Palo Alto Networks (PANW)

BUY: € 201.81 (+39,8%)

Equity Research Division

21th December 2022

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Basic Information

Last Closing Price	$ 147.26
Target Price	$ 202
+/- Potential	+39.8%
Bloomberg Ticker	PANW:US
GICS Sector	Technology
GICS Sub-Industry	Software

5Y Cumulative Returns

Key Financials

Market Cap	$44.57B
Basic Shares O/S	302.356B
52-Wk High	$213.63
52-Wk Low	$140.08
Fiscal Year End.	31 July 2022

($billion)	FY19A	FY20A	FY21A	FY22A
Gross Profit	2,091	2,408	2,981	3,782
EBITDA	99.6	27.0	-43.8	93.7
EBIT	-60	-206	-326	-243
Net Income	-69,2	-252,8	-519,3	-312,7

Key Executives

Mr. Nikesh Arora C.F.A.	Chief Executive Officer
Mr. Dipak Golechha	Chief Financial Officer

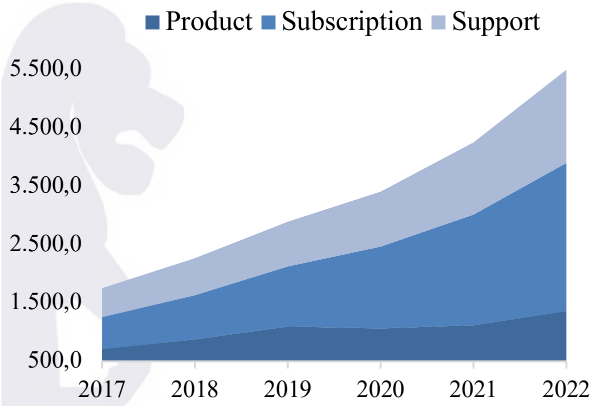
Company Description

Palo Alto Networks, Inc. is a global cybersecurity provider. The Company enables enterprises, service providers, and government entities to secure all users, applications, data, networks, clouds and devices with visibility and context, continuously across all locations. It delivers cybersecurity products covering a range of use cases, enabling its end-customers to secure their networks, remote and hybrid workforces, branch locations, and public and private clouds, and to advance their security operations centers (SOC).

Summary

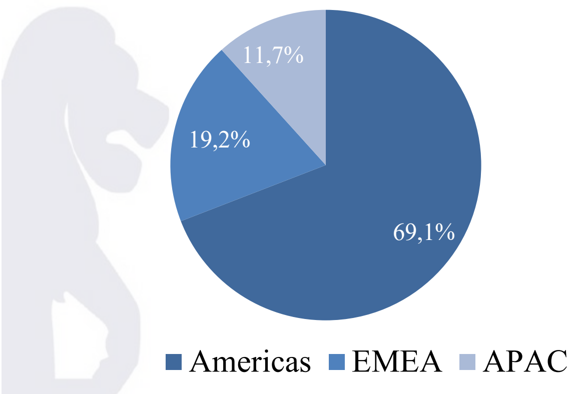
Palo Alto Networks is a fast-growing cybersecurity company (25.67% Revenue CAGR over the last 5 years). The company has not yet experienced consistent positive GAAP earnings. However, its position within the expanding cybersecurity industry, its ability to capture market share over the past few years, as well as its potential to achieve economies of scale when entering its maturity stage, highlight Palo Alto Networks as a potential strong cash generating business in the future. From a valuation standpoint, we performed both absolute and relative valuation. For the absolute one, we used FCFF through 2032 plus TV, discounted at a forecast WACC of 8.4% and a terminal WACC of 7.3%. The DCF analysis yielded a resulting price per share of $192.5. Simultaneously we performed a relative analysis, using the EV/Sales multiple, and obtained a final price per share of 285.6$. We decided to assign a greater weight to the DCF valuation resulting in a final price of $201.81, up 39.8% with respect to the current values.

Exhibit 1: Palo Alto Revenue Breakdown by Product



Source: Company 10-Ks

Exhibit 2: Revenue Breakdown by Geographic reach



Source: Company 10-Ks

Company Overview

Palo Alto Networks, Inc. (Palo Alto) offers integrated security solutions. The company offers zero trust network security, cloud security, security analytics and automation, threat intelligence and security consulting and secure access service edge. It serves the education, energy, financial services, government entities, healthcare, Internet and media, manufacturing, public sector, and telecommunications industries.

Revenues

The firm generates revenue from 3 sources: Subscription, Support, and Product:

- **Product**: it mainly includes network security products that can be purchased either as hardware or software.
- **Subscription**: it accounts for the sale of subscriptions to its cloud security platforms. Clients enter a contractual agreement with Palo Alto lasting from 1 to 5 years, securing Palo Alto growing future cash flows. As a matter of fact, they represent the highest source of revenue for the company, whose medium-term strategy is to acquire a bigger market share by leveraging on its subscription system.
- **Support**: this segment's purpose is to provide post-sales customer support, as well as professional services within the field of cybersecurity, delivering services such as architecture design and planning, implementation, configuration, and firewall migrations.

Palo Alto is headquartered in Santa Clara, California and its business operations span across 3 regions: the Americas; Europe, the Middle East, and Africa (EMEA); and Asia Pacific and Japan (APAC).

Expenses

Cost of Goods Sold as a percentage of Revenues has increased by 4 bps from FY2017 to FY2022, driving gross margin down. More specifically:

- "Product" cost as a percentage of Product revenue increased in the latest financial year by 5 bps. These costs are driven by both personnel costs and manufacturing costs.
- "Service" cost as a percentage of Subscription and Support revenue slightly decreased in the FY2022. These costs are driven by personnel costs and professional services costs.

By considering so, we can assume gross margin decreased in FY22 due to higher manufacturing costs, which could be due to ongoing global supply chain disruptions. Manufacturing costs consist of the price paid to EMS (Electronics Manufacturing Services) to produce hardware products and components. However, product design and development are established by Palo Alto alone.

Customers

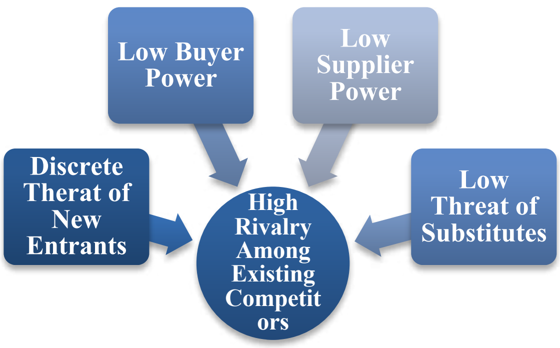
Palo Alto's end-customers are primarily medium-large enterprises operating in several industries. According to Morningstar, the company's client portfolio includes all the Fortune 100 and more than three fourths of the Global 2000 firms. No single customer ever accounted for more than 10% of its total revenue, as disclosed by the company itself in its latest 10-K.

Exhibit 3: Gartner's Market Segmentation

Information Security & Risk Management End User Spending by Segment,, 2020-2021 ($ billions)			
Market Segment	**2020**	**2021**	**Growth**
Application Security	3.3	3.7	12.2%
Cloud Security	0.6	0.8	41.3%
Data Security	3.0	3.5	17.6%
Identity Access Management	12.0	13.9	15.6%
Infrastructure Protection	20.5	23.9	16.8%
Integrated Risk Management	4.9	5.5	12.6%
Network Security Equipment	15.6	17.0	8.9%
Other Information Security Software	2.3	2.5	9.6%
Security Services	65.1	72.5	11.4%
Consumer Security Software	6.5	7.0	7.4%
Total	**133.8**	**150.4**	**12.4%**

Source: Gartner (May 2021)

Five Forces Porter's Analysis



Industry Outlook

The aim of this industry analysis is to understand the dynamics faced by the companies operating within the field of cybersecurity. We will do so by relying on Michael Porter's Five Forces analysis to understand which competitive mechanisms might impact the industry's long-term profitability.

Cybersecurity Industry

The cybersecurity industry is defined as the subset of businesses within the IT industry that aim at providing a solution to those companies who look for a safer IT environment through which they can sustain their operations and protect the firm's and clients' data.

According to McKinsey research, although cybersecurity spending has grown by 12.4% annually in the past few years, making up an overall $150 billion market in 2021, companies suggest that threat volumes will almost double from 2021 to 2022, due to unprecedented types of malwares. This leads to the conclusion that cybersecurity providers have not been able to meet customer demands in terms of automation, pricing, and services. For these reasons, McKinsey estimates a total addressable market of $1.5 trillion to $2.0 trillion, approximately ten times the size of the vended market. The under-penetration of cybersecurity products and services is, on the face of it, the result of the below-target adoption of cybersecurity products and services by organizations - which suggests that the budgets of many if not most chief information security officers (CISOs) are underfunded. Cybersecurity providers must meet the challenge by modernizing their capabilities and rethinking their go-to-market strategies.

To maximize the opportunity, providers must get a grip on the factors shaping the market, the segments most likely to grow, and the services customers need, which are: cloud technologies, pricing mechanisms, artificial intelligence, and (particularly in the midmarket) managed services. With strategic planning in these areas, and a robust approach to implementation, cybersecurity providers can make themselves more competitive and get a slice of the $2 trillion pie.

Buyer Power: The cybersecurity market is characterized by a low customer concentration, in fact, the companies served to rate in all industries and are of different sizes. Moreover, the existence of platforms to provide those services would lead customers to incur high switching costs if were they to change suppliers. Within the cybersecurity industry, players heavily invest in branding, increasing perceived product differentiation. As far as the threat of backward integration is concerned, the buyers' group includes large companies operating in the internet and media industry, thus owning the necessary financial resources and a potential knowledge fit. However, cybersecurity companies' resources are not easy to copy as they heavily rely on skilled workforce and are protected by patents.

Supplier Power: EMSs represent the most important supplier group within the industry. The factor that most strengthens its bargaining power is its low dependence on the industry, in fact, it serves many sectors. However, there are other elements reducing its influence on the analyzed industry, such as: low supplier concentration, as the EMS sector is made of countless companies, low industry switching costs, as they do not partake in product development, and low product differentiation, as their service can be carried out by, without many differences, by other players.

Substitutes: We could not find any substitute that might affect the industry's long-term profitability.

Threat of New Entrants: Given the relatively young age of the sector, supply-side economies of scale are low: companies have not yet been able to scale their businesses, and this weakens barriers to entry, together with low capital requirements. However, companies' strength is mitigated by the revenue generated through subscription models and the related switching costs that customers face.

Rivalry among Existing Competitors: Competition within the cybersecurity industry is based on different sources for competitive advantage, such as: product features, reliability, performance, and effectiveness; product line breadth, diversity, and applicability; product extensibility and ability to integrate with other technology infrastructures; price and total cost of ownership; adherence to industry standards and certifications; strength of sales and marketing efforts; and brand awareness and reputation. Although competition is not entirely based on price, high rivalry is both pushed and mitigated by several factors:

Pushing Factors	Mitigating Factors
• No product perishability • Many competitors of different sizes and power • Diverse rivals' approaches	• Highly differentiated products • High switching costs • Fast industry growth • Low exit barriers

SWOT Analysis

Strengths

R&D: The company's strong R&D allows the company to develop innovative products that meet customers' expectations. It invests a significant part of its revenue in R&D, principally to develop products that are in accordance with emerging technologies in the enterprise security markets. Palo Alto's R&D focuses on developing new software and hardware, and on improving and enhancing its existing product and subscription offerings. The company's engineering team has a deep endpoint, security pertise, and networking, and works with end-customers to identify their future needs. In FY2022, the company introduced Prisma Access 3.0, Prisma Cloud 3.0,
PAN-OS 10.2, AIOps for NGFW, and Cloud NGFW for AWS.

In FY2022, the company incurred expenses of $1,417.7 million on R&D, which as a percentage of revenue, stood at 25.8%. As of July 2022, the company had 3,268 employees dedicated to R&D activities.

Revenue Growth: Strong revenue growth increases the company's ability to allocate adequate funds for its future growth prospect. In FY2022, the company reported revenue of $5,501.5 million, as compared to $4,256.1 million in FY2021, which shows an increase of 29.3%. The increase in revenue was due to the growth in subscriptions and support revenue and product revenue by 32% and 21.7%, respectively in FY2022. The growth in product revenue was due to the increase in software sales, resulting from increased demand for products, and the growth in subscription and services.

Wide Geographic Presence: Wide geographic operations help in mitigating risks associated with dependence on a specific region. The company has offices in several places worldwide to distribute its products efficiently and reach a large customer base. As of July 2022, Palo Alto had end-customers in 180 countries across the Americas, Asia-Pacific, the Middle East, Africa and Europe. The company offers products and services to various industries, including government entities, financial services, public sector education, health care, telecommunications, and entertainment. Wide geographic presence enables the company to serve a wide customer base, which results in improved top line performance.

Awards and Recognitions: Palo Alto received various awards and much recognition in the past few years and occupies a dominant position in the cybersecurity market. The company was recognized as the leader in developer security tools by GigaOm, it also secured rank 1 for security solutions by IT central station and was also recognized as one of the top 10 coolest cloud security tools by CRN magazine. Such awards and recognitions enhance the brand image of the company both in the domestic and international markets.

Weakness

Operational Performance: Decline in profitability could restrict Palo Alto's ability to provide adequate returns to shareholders, reduce their confidence, and its chances to obtain more investments. The company's operating loss was $188.8 million in FY2022, compared to an operating loss of $304.1 million in FY2021.

Weak operational performance indicates lack of focus by the company on cost management. At the NPAT level, the company's net loss was $267 million in FY2022, compared to a net loss of $498.9 million in FY2021.

Opportunities

Global Cloud Computing: Market Cloud-based operations enable enterprises to scale up their operations instantly, handle fluctuations in demand, and access systems and services over a variety of devices at a lower cost. According to MarketLine, the global cloud computing industry is forecast to reach $446,079.3 million by 2025. In July 2022, the company's Prisma Cloud Native Application Protection Platform (CNAPP) was selected by iQo into its digital ecosystem to further enhance cloud security. In June 2022, the company and Thales partnered to help support the cloud migration, allowing organizations to implement Zero Trust security systems at scale. In March 2022, the company teamed up with Amazon Web Services (AWS) to unveil the new Palo Alto Networks Cloud NGFW for AWS. This solution would help customers to speed up their pace of innovation.

Global Cybersecurity Market: The growing vulnerability of IT and communication networks to hacking, increasing threats of terrorist attacks, and the requirement of securing maritime and offshore installations are expected to lead to increase in investment in the cybersecurity market globally. Increase in the use of cloud storage systems is also expected to increase the demand for cloud security solutions. The company's next-generation security platform consists of advanced endpoint protection, which prevents cyber-attacks that aim to run malicious code or exploit software vulnerabilities on a broad variety of fixed and virtual endpoints and servers.

Partnerships and Agreements: Palo Alto's operations could benefit from new contracts and agreements:

- In July 2022, the company expanded its collaboration with Red Canary to help deliver on a bold vision: unifying threat investigation across a wide range of Palo Alto Networks products. Under this collaboration, Red Canary would help Palo Alto in solving customers' security challenges. Both companies would protect organizations from ransomware, phishing, and other modern threats.
- In May 2022, the company entered a partnership with BT to offer managed Secure Access Service Edge (SASE). This solution would provide support the organizations to migrate from their existing architectures, continuously supported by integrated solutions and advisory expertise in cloud security, identity management, Zero Trust and more. In the same month, the company entered a partnership with Cohesity to integrate Cohesity Helios next-gen data management platform with its Cortex XSOAR security orchestration, automation and response platform for improved ransomware detection and recovery.
- In February 2022, the company's Palo Alto Education Group and LaunchFIT partnered with Moomoo to launch Investeen to improve financial literacy for teens. This system would provide equity investment knowledge to high school students across the US.

Launch of New Products: The company focuses on expansion through the launch of new products:

- In August 2022, the company introduced Unit 42 Managed Detection and Response (Unit 42 MDR) to address cybersecurity need with a new service that can offer continuous 24/7 threat detection, investigation, and response.
- In June 2022, the company introduced out-of-band WAAS into Prisma Cloud to help address web application vulnerabilities and unsecured APIs.
- In April 2022, the company announced the availability of its Okyo Garde Enterprise edition to extend SASE to protect home networks.
- In March 2022, the company introduced new features for Prisma SASE built for MSPs. Through this, Palo Alto would deliver unique network security service to its managed service provider partners and their customers. In February 2022, the company announced the PA-3400 and PA-5400 Series ML-Powered Next-Generation Firewalls (NGFWs) offering three times better security performance over the previous generations. In the same month, the company launched Cortex XSIAM, an AI-driven platform; and Nebula, the latest upgrade of its industry-leading PAN-OS software, to help find the evasive, zero-day attacks.
- In January 2022, the company and Macnica Solutions, Inc introduced Palo Alto Networks' cloud-native security platform Prisma Cloud into the full cloud banking system of Minna no Bank, Ltd.

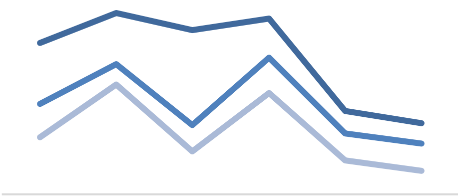
Threats

Intense Competition: The company operates in a highly competitive cloud computing market. Palo Alto faces competition from Juniper Networks Inc, Cisco Systems Inc, Check Point Software Technologies Ltd, Crowdstrike Inc, FireEye Inc, NortonLife Lock Inc, International Business Machines Corp, and Fortinet Inc. Many of its competitors have a longer operating history, greater brand recognition, established customer and supplier relationships, and greater financial resources, which lead to the creation of innovative products and business expansion through acquisitions. In September 2022, Check Point Software Technologies Ltd launched Industry-Leading Security Operations Solutions and Services Suite for managed prevention and response. In May 2022, International Business Machines Corp and MBZUAI signed a MoU to advance fundamental AI research, also to accelerate the types of scientific breakthroughs that could unlock the potential of AI.

Reliance on Third-Party Manufacturers: The company depends on third-party manufacturers as sole source manufacturers for its product lines. Palo Alto is dependent on a subsidiary of Flex, the company's contract manufacturer. Reliance on these third-party manufacturers reduces control over the manufacturing process and exposes the company to risks, including reduced control over quality assurance, product costs, product supply, and timing and transportation risk. Most products are manufactured by contract manufacturers at facilities based in the US. Any manufacturing and logistics disruption by third-party manufacturers could severely impair Palo Alto's ability to fulfil orders.

The company is subject to requirements under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 to diligence, disclose, and report whether products contain minerals originating from the Democratic Republic of the Congo and adjoining countries, or conflict minerals. The company has incurred and expects to incur additional costs to comply with these disclosure requirements, including costs related to determining the source of any of relevant minerals and metals used in products.

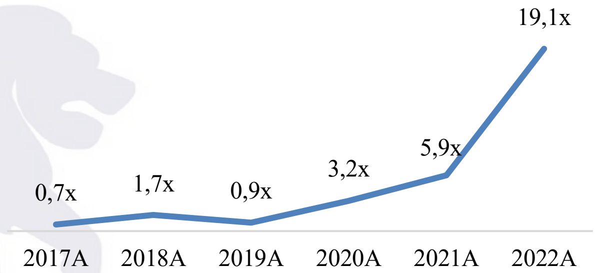
Exhibit 4: Liquidity Ratios



	2017A	2018A	2019A	2020A	2021A	2022A
Current Ratio	1,6x	2,0x	1,8x	1,9x	0,9x	0,8x
Quick Ratio	1,0x	1,4x	0,8x	1,5x	0,7x	0,6x
Cash Ratio	0,6x	1,2x	0,5x	1,1x	0,4x	0,3x

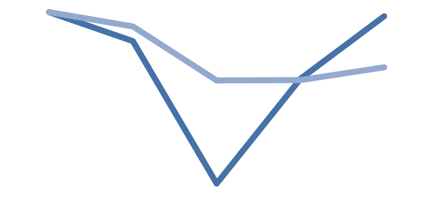
Source: Minerva Investment Management Society

Exhibit 5: Debt-to-Equity Ratio



Source: Minerva Investment Management Society

Exhibit 6: Growth Margins



	2018A	2019A	2020A	2021A	2022A
Annual Growth Rate	29,54%	27,53%	17,55%	24,87%	29,26%
CAGR	29,54%	28,53%	24,76%	24,79%	25,67%

Source: Minerva Investment Management Society

These requirements could adversely affect the sourcing, availability, and pricing of minerals used in the manufacture of semiconductor devices or other components used in its products.

Palo Alto's third-party manufacturers typically fulfil supply requirements based on individual orders, and the company does not have long-term contracts with such manufacturers that guarantee capacity, continuation of specific pricing terms, or extension of credit limits. The company's contract with Flex permits them to terminate the agreement as per their convenience, subject to prior notice requirements. If the company is required to change contract manufacturers, its ability to meet scheduled product deliveries to end-customers could be adversely affected, which could cause loss of sales to existing or potential end-customers, delayed revenue or an increase in costs which could adversely affect gross margins. Any production interruption for any reason, such as a natural disaster, epidemic, capacity shortages, or quality problems, at one of Palo Alto's manufacturing partners would negatively affect sales of product lines manufactured by that manufacturing partner and adversely affect its business and operating results.

Stringent Regulatory Environment: The company operates in a stringent regulatory environment. A range of provincial, state, national, and international laws and regulations apply to the collection, use, retention, protection, disclosure, transfer, and other processing of personal data. These data protection and privacy-related laws and regulations are evolving and may result in ever-increasing regulatory and public scrutiny and escalating levels of enforcement and sanctions. The company's failure to comply with applicable laws and regulations, or to protect such data, could result in enforcement action against the company, including fines, imprisonment of company officials and public censure, claims for damages by customers and other affected individuals, damage to the reputation and loss of goodwill. Evolving and changing definitions of personal data and personal information within the European Union, the US, and elsewhere, especially relating to the classification of intellectual property (IP) addresses, machine identification, location data, and other information may limit or inhibit Palo Alto's ability to operate or expand the business, including limiting technology alliance partners that may involve the sharing of data. The company's inability to comply with the changing regulations would have a material adverse effect on the operations, financial performance, and business.

Financial Analysis

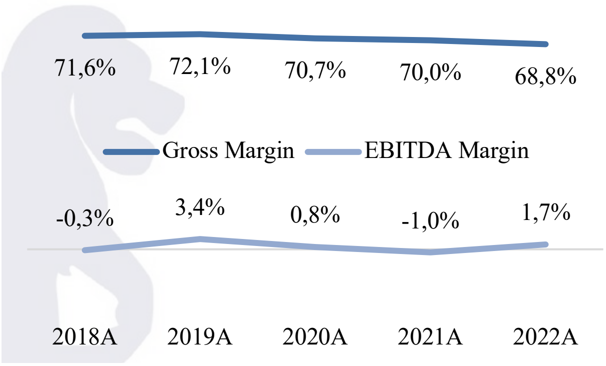
Liquidity

In order to analyze Palo Alto's liquidity, we utilized three ratios: current, quick, and cash ratio. As we can see from Exhibit 4, from 2020 on, the liquidity position of the company significantly decreased. Although its cash flow from operating activities has been consistently positive and increasing over the 5-year period, the cash balance of the company has been suffering due to investments and acquisitions of businesses, CAPEX, and stock buybacks.

Solvency

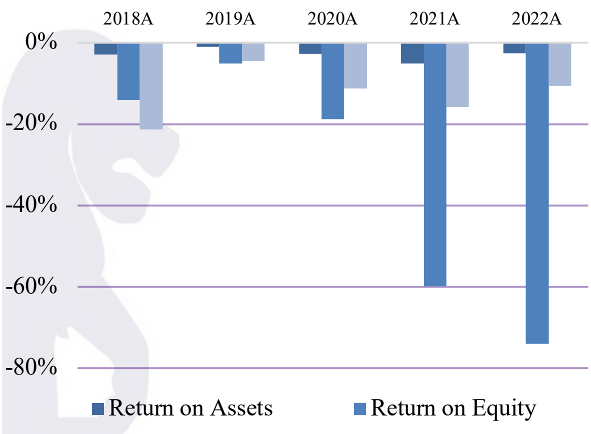
In order to assess Palo Alto's ability to sustain its activity in the long-term, we decided to look at its Debt-to-Equity Ratio, since we could not assess its interest coverage ratio as its EBIT has consistently been negative for the past 5 years. From Exhibit 5 we notice the company has tremendously increased its financial leverage from 2020 on, reaching a multiple of 19.1 (Debt/Book Equity). However, its solvency is supported by its ability to issue shares at a high price, with a large market Equity Value and a Market D/E ratio of 0.08.

Exhibit 7: Income Statement Margins



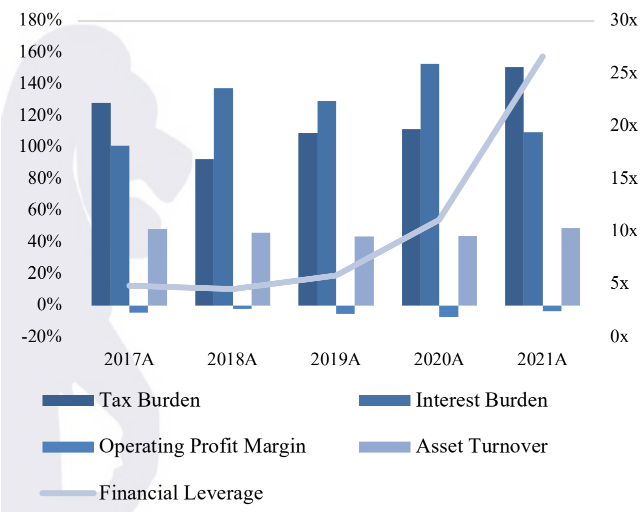
Source: Minerva Investment Management Society

Exhibit 8: Profitability Ratios



Source: Minerva Investment Management Society

Exhibit 9: 5 Step Dupont Analysis



Source: Minerva Investment Management Society

Profitability

As regards the analysis of the profitability margins, the revenue growth rate is always positive, but decreasing until 2020 and increasing from 2021 onwards; in particular, the CAGR is equal to 25.67%.

Exhibit 7 illustrates that gross margin stands at constant values of around 70%, while the EBITDA margin is subject to greater fluctuations, and it is not possible to identify any trend. The EBITDA margin was negative in the two-year period 2017-2018, increasing in 2019 up to 3.4% and then decreasing again in the following years. This is not surprising given that Palo Alto Networks is a growth cybersecurity company.

Moreover, since the margins of the income statement the main profitability ratios, such as ROA, ROIC and ROE, are also negative, as shown by Exhibit 8.

It may be useful to investigate which are the main variables that impact on shareholder profitability through the 5-step Dupont model (Exhibit 9). Asset turnover settled in the period 2018-2022 at values that were mostly constant and close to 0.5x. Conversely, the Operating Profit Margin is negative in all historical years considered and this justifies the negativity of the Return on Equity. Moreover, the negativity of this indicator is amplified above all in the three-year period 2020-2022 by the increase in financial leverage which goes from 4.6x in 2019 to 26.6x in 2022.

Valuation

Our analysis followed two main approaches:

- Intrinsic valuation regarding the DCF model (FCFF).
- Relative valuation using comparable company analysis

Cost of Capital

The **cost of equity** was estimated using the CAPM formula:

$$R_e = R_f + \beta * (R_M - R_f)$$

The **cost of debt** was estimated by using the risk-free rate and adding a default spread associated with the company's bonds. Using Refinitiv, we have found that all bonds outstanding issued by Palo Alto Networks are rated BBB- (Starmine). Therefore, we find a corresponding credit spread of 1.76% (ICE US Corporate BBB Option-Adjusted Spread).

We then estimate the WACC using the following formula:

$$WACC = \frac{E}{D+E} * Cost\ of\ Equity + \frac{D}{D+E} * (1-T) * Cost\ of\ Debt$$

We have the following results for the forecast period WACC and the terminal period WACC (accompanied by their specific assumptions):

Forecast WACC (8.4%)

- Risk-free Rate: 3.85% [Average of the estimated risk-free rate in the US for 2023 (5%) and the Fernandez average risk-free rate for US companies]

Exhibit 10: DCF Valuation

Assumptions	
Final period in forecast horizon	**FY2032**
Terminal growth rate	1%
Tax rate	21.0%
Forecast WACC	8.4%
Terminal WACC	7.3%
Calculations	
Final forecast FCFF	5.957
Terminal value	95.801
Present value of forecast cash flows	17.389
Present value of terminal value	42.718
Enterprise value	**60.107**
Less: debt & other capital claims	4,015
Add: cash & cash equivalents	2,119
Less: Pension provisions	-
Less: Other debt-like items	-
Add: Non-operating assets	-
Less: Minority Interests	-
Equity value	**58.210**
Weighted average basic shares outstanding	302
Value per share	**$ 192.5**
Current value per share	147.26
Premium (discount to last close)	30.7%
Implied EV/Sales	10.9 x

Exhibit 11: Sensitivity Analysis

Share price vs Terminal WACC & TGR

	0,6%	0,8%	1,0%	1,2%	1,4%
7,7%	$ 176,1	$ 179,9	$ 184,1	$ 188,4	$ 193,1
7,5%	$ 179,7	$ 183,8	$ 188,2	$ 192,8	$ 197,7
7,3%	$ 183,5	$ 187,9	$ 192,5	$ 197,5	$ 202,7
7,1%	$ 187,6	$ 192,2	$ 197,2	$ 202,4	$ 208,1
6,9%	$ 192,0	$ 196,9	$ 202,1	$ 207,8	$ 213,8

- Equity Risk Premium: 5.5% [Estimated using Fernandez's analysis of US MRP]
- Beta: 0.87 [Average of the beta estimated through regression analysis (S&P 500 vs PANW) and the beta estimated through comparable company analysis]
- D/E ratio: Calculated with the market value of equity and debt

Terminal WACC (7.3%)

- Risk-free Rate: 2.7% [Estimated using Fernandez's analysis on the average risk-free rate for US companies]
- Equity Risk Premium: 5.5% [Estimated using Fernandez's analysis of US MRP]
- Beta: 0.85 [Adjusted to the Damodaran's average capital structure for the Software (System & Application) industry]
- D/E ratio: [Adjusted to the Damodaran's average capital structure for the Software (System & Application) industry]

DCF Valuation

In the DCF Valuation, we apply a two-stage DCF model, followed by a terminal stage.

To forecast revenues, we have first analyzed the evolution of the cybersecurity market and have arrived at a 2021 market share of Palo Alto Networks sitting at around 3.4 % (growing at around 14% YoY).

Then, using the estimated CAGR of the overall market, we have computed the market share gain stage, in which we take the previous years market share growth and apply it for the next 5 years of the revenue forecast. This implies an increase in revenues from 5,5 bn in 2021 to 18,5 bn in 2027. This is due to Palo Alto's presence within the industry as a growth company and due to its consistent capture of market share over the past few years.

After that, we see the next 5 years in which Palo Alto still gains market share, however, at a decreasing rate. Here the revenue grows from 18,5 bn in 2027 to 39,2 bn in 2032.

After this, we estimate that the company will enter a mature stage, in which it has a stable market share at around 9-10% (compared to 3.4% in 2021) and will grow into the future at the estimated terminal growth rate (assumed at 1.8% ≈ US GDP growth rate in the last 20 years). (Source: Trading Economics)

Profitability of the business increases over time due to efficiency gains from economies of scale and networking effects as the company becomes more mature. This can be especially seen in a decrease of Operating Expenses (S&M, G&A, R&D) as a % of revenue as the company grows. This will be reflected in the EBIT margin of the company.

Growth Capex has been forecasted as a constant % of revenue according to the company's capital expenditure practice over the last few years. Net Working Capital was forecasted using ratios such as Days Sales Outstanding, Days Payables Outstanding, and Days Inventory on Hand.

We have used the following formula to calculate the FCFFs:

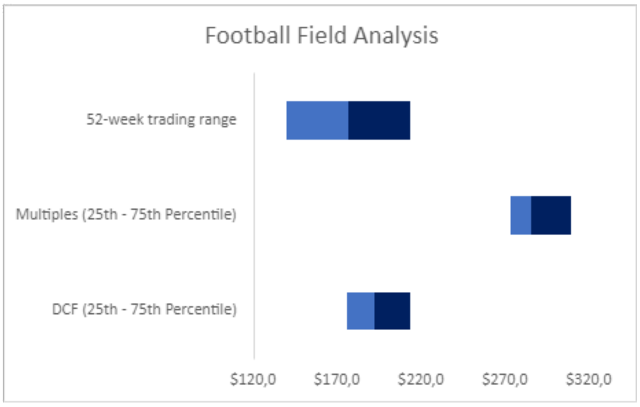
$$FCFF = EBIT * (1 - T) + D\&A - Capex - \Delta NWC$$

Exhibit 12: Peer Analyis

	Core Comps	Country	GICS Sub-Industry
1	Cisco Systems	USA	Communications Equipment
2	Zscaler	USA	Systems Software
3	ServiceNow	USA	Systems Software
4	Workday	USA	Application Software
5	CrowdStrike	USA	Systems Software
6	Salesforce	USA	Application Software
7	Fortinet	USA	Systems Software
8	Tenable	USA	Systems Software
9	HubSpot	USA	Application Software
10	DocuSign	USA	Application Software

	Broad Comps	Country	GICS Sub-Industry
1	Arista Networks	USA	Communications Equipment
2	Autodesk	USA	Application Software
3	Splunk	USA	Application Software
4	NetApp	USA	Technology Hardware
5	Adobe	USA	Application Software
6	Microsoft	USA	Systems Software
7	Atlassian	USA	Application Software
8	Datadog	USA	Application Software
9	Cloudfare	USA	Internet Services
10	Dynatrace	USA	Application Software

Exhibit 13: 5 Football Field



After this, we have discounted those cashflows using the Forecast WACC (8.4%). Furthermore, we have calculated a terminal period cash flow using the Gordon Growth formula, with a terminal growth rate of 1% and the terminal WACC (7.3%).

Discounting all the cash flows and adding them up leads us to an enterprise value of $60 bn, which, after doing the equity bridge, results in a share price of $192.5.

Multiples Analysis

We have decided to focus on a group of comparables coherent not only with the core business of the company evaluated but also aligned in terms of size and geography. We have conducted our analysis over 10 core comps (companies that operate within the same Systems Software vertical and are mainly B2B) and 10 broad comps (companies which encompass the overall technology sector).

Computation

In order to check the results obtained through the DCF model, we have performed a market multiples analysis. We have investigated EV/Sales, EV/EBITDA, and EV/EBIT multiples for the business. However, Palo Alto Networks is a growth company, still experiencing high revenue growth with low profitability margins. Its EBITDA margin hovers around 1% and its EBIT margin is negative. Hence, EV/EBIT and EV/EBITDA multiples would not be appropriate to consider the overall value and potential of this company.

Therefore, we have opted to analyse Palo Alto Networks through the EV/Sales multiple. This asset side multiple also has as its main focus the embedded growth prospects of the company. Using a smoothed average (excluding maximum and minimum) for the core comps, broad comps, and total comps, we find a range of Enterprise Values (using estimated FY2023 Revenue) between $ 84 – $ 95 bn. By doing the equity bridge, we arrive at a valuation between $274 - $309 per share.

Final Valuation Methodology

For deriving the price target, we have computed a weighted average of the values obtained from the two analyses, attributing a higher weight to the DCF result because it captures both top-line revenue growth and profitability, while the EV/Sales estimate focuses mostly on the former. This leads to a target price of $201.80 / share, a 39.8% increase from the last close price (21/12/2022).

DCF Median	$	192.5	90%
Multiples Median	$	285.6	10%
	$	**201.8**	**100%**

Investment Risks

ACHIEVING REVENUE GROWTH

The cybersecurity and technology industry changes quite fast and therefore there is a risk that, due to unforeseen market changes, the value of company assets or return on investment may decrease, R&D investments may take longer and/or cost more than expected. A large part of Palo Alto's valuation is based on its terminal value and the realization of strong revenue growth throughout the next few years. A very competitive environment or an inefficient growth strategy can impair this value.

MAINTAINING REPUTATION

Palo Alto Networks operates within the cybersecurity industry, where having good operational systems and keeping customers safe from cyber-attacks is of the utmost importance. Any breach of the systems secured by Palo Alto Networks software (or infrastructure) could be mediatized and have a negative impact on the demand for the company's products. Furthermore, the company will have to keep its own systems up and running at all times, guaranteeing 24/7 security for customers. In this sense, the company must pay the utmost attention to guarantee the ability of the cybersecurity systems to always remain active, functional, and performing.

REGULATORY RISKS

The cybersecurity industry is a fast-growing industry that changes quite rapidly. We may see some regulatory changes around the protection, disclosure, and processing of personal data. If regulatory scrutiny increases, the company's failure to comply with the laws could lead to fines and penalties of several types, as well as reputational damage. Furthermore, the company's inability to comply with regulations would inevitably lead to a deterioration in operating and financial results.

Appendix

Income Statement (all in USD millions)	2017	2018	2019	2020	2021	2022
Revenue:						
Product	708.5	879.8	1,096.2	1,064.2	1,120.3	1,363.1
Y/Y Growth (%)		*24.18%*	*24.60%*	*-2.92%*	*5.27%*	*21.67%*
	40.4%	*38.7%*	*37.8%*	*31.2%*	*26.3%*	*24.8%*
Subscription	548.8	758.1	1,032.7	1,405.3	1,898.8	2,539.0
Y/Y Growth (%)		*38.14%*	*36.22%*	*36.08%*	*35.12%*	*33.72%*
	31.27%	*33.34%*	*35.62%*	*41.23%*	*44.61%*	*46.15%*
Support	497.8	635.7	770.7	938.9	1,237.0	1,599.4
Y/Y Growth (%)		*27.70%*	*21.24%*	*21.82%*	*31.75%*	*29.30%*
	28.36%	*27.96%*	*26.58%*	*27.55%*	*29.06%*	*29.07%*
Total Net Sales	**1,755.1**	**2,273.6**	**2,899.6**	**3,408.4**	**4,256.1**	**5,501.5**
Y/Y Growth (%)		*29.54%*	*27.53%*	*17.55%*	*24.87%*	*29.26%*
Cost of Goods Sold:						
Product	201.4	272.4	315.9	294.4	308.5	455.5
Product as a % of Net Sales	*11.48%*	*11.98%*	*10.89%*	*8.64%*	*7.25%*	*8.28%*
Service	275.0	372.7	492.5	705.1	966.4	1,263.2
Service as a % of Net Sales	*15.67%*	*16.39%*	*16.99%*	*20.69%*	*22.71%*	*22.96%*
Total Cost of Goods Sold	**476.5**	**645.2**	**808.5**	**999.6**	**1,275.0**	**1,718.8**
COGS as a % of Net Sales	*27.15%*	*28.38%*	*27.88%*	*29.33%*	*29.96%*	*31.24%*
Gross Profit	**1,278.6**	**1,628.4**	**2,091.1**	**2,408.8**	**2,981.1**	**3,782.7**
Gross Profit Margin (%)	*72.85%*	*71.62%*	*72.12%*	*70.67%*	*70.04%*	*68.76%*
Operating Expenses:						
Research and Development	347.4	400.7	539.5	768.1	1,140.4	1,417.7
Research and Development as a % of Net Sales	*19.79%*	*17.62%*	*18.61%*	*22.54%*	*26.79%*	*25.77%*
Sales and Marketing	898.8	1,074.2	1,344.0	1,520.2	1,753.8	2,148.9
Sales and Marketing as a % of Net Sales	*51.21%*	*47.25%*	*46.35%*	*44.60%*	*41.21%*	*39.06%*
General and Administrative	198.3	257.8	261.8	299.6	391.1	405.0
General and Administrative as a % of Net Sales	*11.30%*	*11.34%*	*9.03%*	*8.79%*	*9.19%*	*7.36%*
Depreciation and Amortization	-59.8	-96.4	-153.8	-206.1	-260.4	-282.6
Total Operating Expenses	**1,384.7**	**1,636.3**	**1,991.5**	**2,381.8**	**3,024.9**	**3,689.0**
EBITDA	**-106.1**	**-7.9**	**99.6**	**27.0**	**-43.8**	**93.7**
EBITDA Margin (%)	*Negative*	*Negative*	*3.43%*	*0.79%*	*Negative*	*1.70%*
Depreciation and Amortization	59.8	96.4	153.8	206.1	260.4	282.6
EBIT	**-165.9**	**-104.3**	**-54.2**	**-179.1**	**-304.2**	**-188.9**
EBIT Margin (%)	*Negative*	*Negative*	*Negative*	*Negative*	*Negative*	*Negative*

Balance Sheet Restated (all in USD millions)	2017	2018	2019	2020	2021	2022
Accounts receivable, net	432	467	582	1,037	1,240	2,143
Prepaid expenses and other current assets	169	268	279	344	229	320
Short-term deferred contract costs					277	318
Long-term deferred contract costs					495	550
Accounts payable	36	49	73	64	57	128
Accrued compensation	118	164	236	322	431	461
Accrued and other liabilities - Balancing value	80	125	162	199	264	337
Deferred Revenue	968	1,214	1,582	2,049	2,742	3,641
Long-term deferred revenue	805	1,066	1,307	1,761	2,282	3,353
Noncash working capital	**- 1,405**	**- 1,882**	**- 2,498**	**- 3,014**	**- 3,534**	**- 4,590**
Property and equipment, net	211	273	296	348	318	358
Intangibles, net	54	141	281	358	499	385
Goodwill	239	523	1,352	1,813	2,710	2,748
Fixed Assets	**504**	**937**	**1,929**	**2,519**	**3,527**	**3,490**
Core Capital Employed	**- 902**	**- 945**	**- 569**	**- 494**	**- 7**	**- 1,100**
Short-term investments	631	897	1,842	790	1,027	1,516
Long-term investments	789	548	575	554	888	1,052
Operating lease right-of-use assets				259	263	242
Other assets	169	326	423	604	421	505
Other long-term liabilities	148	230	216	90	98	108
Surplus Assets	**1,442**	**1,541**	**2,624**	**2,117**	**2,502**	**3,206**
Net Capital Employed	**540**	**595**	**2,055**	**1,622**	**2,495**	**2,107**
Operating Lease Liabilities - Current Portion/Short-Term	-	-	-	58	66	62
Convertible senior notes, net	-	550	-	-	1,558	3,677
Convertible senior notes, net (Long-term)	525	1,370	1,430	3,084	1,668	-
Long-term operating lease liabilities	-	-	-	337	313	276
Temporary equity	-	21.9	-	-	129	-
Gross Financial Debt	**525**	**1942**	**1,430**	**3,479**	**3,734**	**4,015**
Cash and cash equivalents	744	2,507	961	2,958	1,874	2,119
Net Debt	**- 220**	**- 565**	**469**	**521**	**1,860**	**1,897**
Common stock and additional paid-in capital	1,600	1,967	2,491	2,259	2,311	1,933
Accumulated other comprehensive loss	- 3	- 16	- 4	11	- 10	- 56
Retained earnings / accumulated deficit	- 837	- 791	- 901	- 1,168	- 1,667	- 1,667
Total common equity	**760**	**1,160**	**1,586**	**1,102**	**635**	**210**
Noncontrolling interests	-	-	-	-	-	-
Total shareholder equity	**760**	**1,160**	**1,586**	**1,102**	**635**	**210**
Total Funds Invested	**540**	**595**	**2,055**	**1,622**	**2,495**	**2,107**

Disclaimer