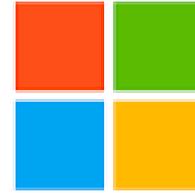


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Microsoft Corporation (MSFT)

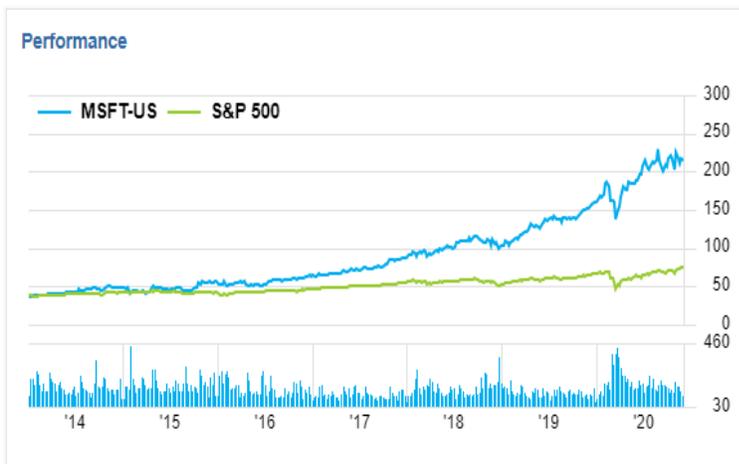


Introduction

*Prepared by Conner Klein, Kasee Meyer, and Joseph Micheel
Senior Analyst: Brad Dobson*

Microsoft was founded in 1975 by Paul Allen and Bill Gates and has since grown to be one of the world’s largest technology brands. The company’s name blends “microcomputer” and “software”, which are two of its core products to date. Throughout its history, Microsoft expanded rapidly by releasing operating systems to hardware companies, most notably IBM. The first retail version of Windows was released in 1985, the same platform that has carried on to present day. The Initial Public Offering was on March 13, 1986, with shares rising \$7.00 in the first trading day. The 1990’s saw an explosion of growth with the rise of the internet and Microsoft’s Internet Explorer. The following decade saw further expansion with the introduction of the Xbox and Windows XP platform. Most recently, Microsoft has ventured into different technology niches, with mobile phones, the Surface, and Outlook email services.

Microsoft has become a well-renowned and globally recognized brand. The company's vision is driven and inspires further technological advances. Their goal is to “develop and support software, services, devices, and solutions” (Microsoft Corporation). The company’s mission is to “empower every person and organization on the planet to achieve more.” This is highly evident with the company’s many user-friendly offerings that help individuals produce great outcomes with core Microsoft products, such as Office and Windows. The Windows operating system commands a dominating 77.74% of market share for personal computer operating systems worldwide. With a market cap of \$1,620.7 B and 163,000 employees, the company has endured many difficult times and been a clear leader in the information technology sector.



Microsoft Corporation (MSFT)

Market Cap:	\$1,620.7 B
Dividend Yield:	1.0%
Current Share Price:	\$214.36
Target Price:	\$243.92
LT Growth Rate:	14.9%
52 Week Beta:	0.81
Headquarters:	Redmond, WA
Employees:	163,000

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Investment Recommendation

We propose buying Microsoft shares for our Student Investment Portfolio. The company has seen significant growth in recent years, with a 35.93% year-to-date return, compared to 14.50% for the S&P 500 Index. Purchasing Microsoft is a fantastic opportunity for long term growth in the portfolio. This level of growth combined with the relative low amount of risk, especially compared to the information technology sector, cannot be missed. The target price given by FactSet of \$243.92 is 13.8% higher than the current share price of \$214.36. Based on a weighted average from our own valuation techniques, we found a target price of \$235.76. Once shares are purchased, we will most likely want to hold them long term since Microsoft has seen such reliable growth and has a promising future.

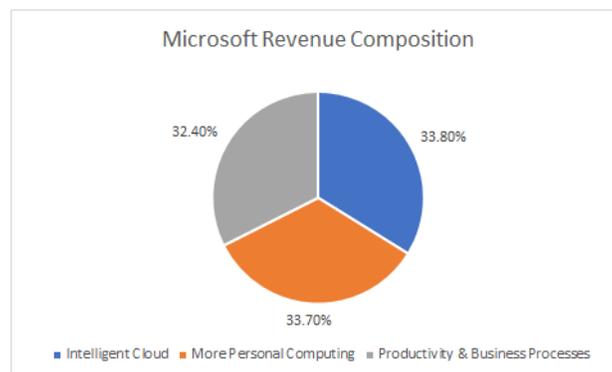
Investment Thesis

Technology Bubble Security

Increases in stock prices combined with lower earnings per share are a potentially worrisome sign. The Information Technology industry has grown at a rapid pace recently, and it may indicate a bubble. If a bubble does exist and there is potential for it to burst, more conservative investing would be a wise decision. Microsoft is an attractive choice because the size of the company and its reach in other subsectors diversifies its risk of a bubble better than its competition. Microsoft has had a high return on equity of 40.1% in the last year. Since Microsoft is such a large company, it has room for dividends to increase in coming years, which have increased 10.9% in the last year. Stable dividend growth can offset market fluctuations with passive income.

Revenue Composition

Microsoft has a nearly perfect balance on its revenue composition from its three segments. 33.8% of revenue comes from its Intelligent Cloud business segment, 33.7% comes from More Personal Computing, and 32.4% comes from Productivity & Business Processes. The fact that Microsoft's revenue is so evenly balanced makes it an attractive investment. It is not overly reliant on one segment over another so if something were to happen to one segment, the others will continue to support Microsoft. This kind of diversification is a strong competitive advantage against less diversified competitors.



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Historical Strength

Microsoft has consistently outperformed the S&P 500 since 2016 and the margin has only grown in that time. Normally when companies offer higher returns, they also give investors a significantly higher risk. This is not the case for Microsoft. The 52-week beta is only 0.81, which is lower than the Information Technology industry's average beta of 1.17. Observing some of Microsoft's five year compounded annual growth rates is a nod to its financial strength. Sales have grown by 9%, free cash flow has grown by 14.3%, and earnings per share has increased over 31% despite leveraging more equity in comparison to debt.

Segment Dominance

Microsoft has many strengths, one of which is their market share for computers running Windows software. In the United States 77.74% of PC's use Windows as the operating platform, with Apple being the second largest competitor with a market share of 17%. This market dominance would prevent smaller companies without extensive resources from taking up a significant part of the market. Many users have Windows operating systems downloaded onto their computers when they are purchased, and these licensure fees provide a significant portion of revenue in the Personal Computing sector (Microsoft Corporation).

Microsoft Office is also seen as the superior collection of products when compared to its main competitor, Google Workspace (formerly G-Suite). Word, PowerPoint, and Excel are the gold standard in the workplace with 38% of the world marketplace using Office 365 and 42.63% in the United States ("Desktop OS Market Share 2020").

Innovative Products & Services

Microsoft has been working on introducing Artificial Intelligence (AI), Internet of Things (IoT), and the cloud into their products before many of their competitors. Azure, Microsoft's primary cloud computing service, has been developed for "computing, networking, storage, mobile and web application services, AI, IoT, cognitive services, and machine learning" (Microsoft Corporation). Azure has been a major source of development in recent years and the continuous development of Azure has given Microsoft a competitive advantage with a hybrid cloud, integrating existing datacenters with their public cloud for a single infrastructure, and the ability to scale for businesses of all sizes and complexities (Microsoft Corporation).

Over the last 20 years the medical field has become increasingly interconnected and Microsoft has worked to secure a large portion of that market. With the development of AI and IoT they assist medical professionals in working more efficiently without sacrificing the health outcomes of their patients. AI can help medical professionals by using chat bots to help treat patients online, using IoT to help monitor outpatient treatment. This is just the beginning of the possibilities for AI, IoT, and cloud, which is only one of Microsoft's three main industries. The technology and techniques that were developed for this industry

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have widespread utility across other industries; each can tailor this platform to continuously improve customer service, and data management and interpretation.

Valuation

For the valuation of the company we used a combination of 3 methods. We used a discounted 5-year cash flow model, P/E ratio analysis, and Dividend Discount Model.

The discounted 5-year cash flow model we used was developed by the Finance 339 class. We found the data required for the model on FactSet and the 10-K filed in June 2020.

Valuation Summary			
1. PV of FCFs	Periods	1	48,931.1
		2	25,272.6
		3	63,003.3
		4	81,619.1
		5	61,544.4
	PV of Terminal Value		1,680,729.6
2. Enterprise Value	Sum of PV of FCF and Terminal Value		1,961,100.1
3. Equity Value	Net Debt		49,751.0
	Equity value		1,911,349.1
4. Equity value per share	Fully Diluted Shares		7,686.0
	Equity value per share		\$248.68
5. Overvalued / Undervalued?	Current Share Price		\$214.29
	DCF Equity value per share		\$248.68
	Difference		(\$34.39)
	Answer:		Undervalued

Basic Discounted Cash Flow Analysis for Microsoft

Free cash flows for year ending June 30:			
Valuation date:		12/01/20	
2021		51,622.3	
2022		28,129.0	
2023		73,981.1	
2024		101,111.7	
2025		80,436.1	
Terminal value		(983,202.4)	
Weighted average cost of capital		5.50%	
Information Needed for Basic DCF			
Current Share Price		\$216.21	
Fully Diluted Shares Outstanding		7,686.0	
Net Debt		49,751.0	
WACC		5.50%	

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The P/E valuation model was more conservative than our other models. To find these bear, base, and bull case estimates, we used Morgan Stanley's predictions for market growth of the next year. We also factored in Microsoft's beta. Since the beta is lower than 1, we can expect that the stock price will not be as volatile compared to the rest of the market. This means that our target prices for a bear market were not as low as the market, but base and bull case target prices were not as high.

For the dividend discount model, we calculated the next 5 years of dividends based on past dividend growth. For the last 3 years the dividend growth rate has fluctuated between 7.7% and 10.9%, from which we extrapolated a 9.4% dividend growth rate. This model has given the largest range, with both the highest and lowest estimates that we found.

Case	Current Share Price	Yearly % Change	Beta	Factor	Target Price P/E	Dividend Discount Model
Bear	\$213.43	-5%	0.81	-4.05%	\$204.79	\$196.19
Base	\$213.43	10%	0.81	8.10%	\$230.72	\$241.54
Bull	\$213.43	18%	0.81	14.58%	\$244.55	\$252.18

The final price range is \$196.19-\$252.18, with a median of \$241.54, and a mean of \$231.24. Due to the large range in the dividend discount model we weighted it less than the other valuation methods in our final number. For the final estimate we took the average of the methods with multiple numbers and then weighted the dividend discount model at 25% with P/E and discounted cash flow at 37.5% each. With these calculations we found a final number of \$235.76 as the target price.

Risk Analysis

Alternative Services

Microsoft has weaknesses, especially compared to its main competitor, Google Workspace. Microsoft 365 has long been the gold standard in the workplace, but with increasing levels of online collaboration, Google Workspace has taken a significant portion of the market share at 55.2% on a global scale. Google Workspace is renowned for online collaboration. Though Microsoft is not the leader of online collaboration, they are actively working towards a collaborative and integrated suite that allows users to work together seamlessly on their platform.

Alternative Devices

Another weakness is a loss of revenues from PC operating systems as people move to complementary devices to do work. As an increasing amount of work is done on phones, tablets, and other devices which may the revenue from pre-installed Windows software to decrease. Windows is

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working to minimize this through development of its own products, such as the Microsoft Surface line of 2-in-1 computers and cell phones.

Information Security

One of Microsoft's primary threats is the security of their products, services, devices, and customer data. As Microsoft expands their products and services, rates of external threats increase. Microsoft manages a lot of data for companies. It is critical that their services and products maintain confidentiality and security. They continuously work to increase security in their products and services, as well as deploying updates to increase security, and provide tools to help companies avoid security issues, like firewalls and virus protection. For customers in certain industries (healthcare, government, financials) products are engineered to special requirements.

Free-to-User Income

Microsoft makes much of its revenue from licensing fees, cloud revenue, Office 365 products, and many other products and services. Edge (the Microsoft developed browser) is unpopular and therefore makes significantly less advertising income than other companies. This creates less free-to-user income for Microsoft.

Aggressive Market Competition

Many other companies are working towards including AI and Internet of Things (IoT) in their products, and if Microsoft doesn't create products that come out before competitors or if their products perform worse than competitors' products they may face lower revenue from a loss of sales or license fees. Microsoft has put many resources into creating and integrating IoT and AI into its services, so a failure in either of those sectors could mean great losses for the company. Though AI and IoT could potentially be threats to the company, Microsoft has competitive advantages that many other companies do not. Microsoft leads the world in data to AI computing and combined with their continued investment in data, hybrid infrastructure, development, and integration of AI an IoT into new and existing products makes them a main competitor in this developing technology.

Management Team

The top three leaders in the company have at least 18 years working for the company. Satya Nadella is the CEO and Non-Independent director and was appointed in February of 2014. He has made some drastic changes to the workplace by encouraging a growth mindset (Insider). He has also made working on cloud services a top goal of the company. Over the last 6 years the market cap of Microsoft has drastically increased, from a market cap of \$300B when Nadella was hired to over \$1T now.

Scott Guthrie is the executive vice president of Microsoft Cloud & AI Group. He has been with the company for 23 years and has focused on cloud and AI for most of his career. He helped lead Azure before becoming the Executive Vice President of Cloud and AI.

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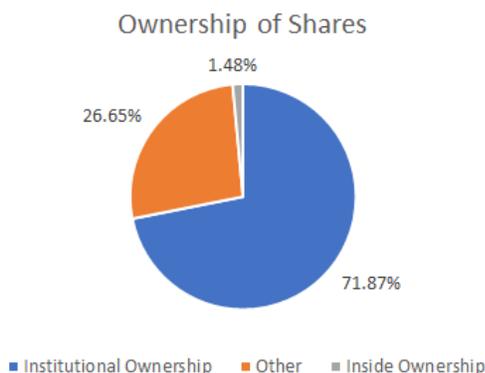
Peer Analysis

In comparison to its sector competition, Microsoft has been decreasing its debt-to-equity while also increasing its return-on-equity. Microsoft is creating more value for its investors despite also increasing its leverage on equity. Microsoft’s competition has continued to go in the opposite direction. Their debt-to-equity has been steadily rising and their ROE has stagnated. Microsoft is also competitive in terms of current and quick ratios, earnings-per-share, and price-to-equity despite its far greater market cap in comparison to its competition.

		Financial Ratios vs 5 yr. AVG							
Company	Report Date	Current Ratio	Quick Ratio	EPS	P/E	D/E	ROE	5 yr. Comparison Legend	
Microsoft	Jun-20	2.5	2.5	5.76	35.3	64.4	40	Consistent Growth	
IBM	Dec-19	1	0.9	10.6	12.7	278	50	Inconsistent Growth	
Oracle	May-20	3	3	3.08	17.5	586	60	Neutral	
SAP	Dec-19	1.1	1.1	2.78	43.3	42	11	Inconsistent Decline	
Broadcom	Oct-19	1.4	1.3	6.43	46.1	120	11	Consistent Decline	
Salesforce.com	Jan-20	1	1	0.15	1230	16.1	0.5	Incomplete Data	

Ownership of Shares

Microsoft has most of its shares held by financial institutions that account for approximately 72% of all that is outstanding. The top 10 institutional holders are made up of members like The Vanguard Group Inc., BlackRock Fund Advisors, and SSgA Funds Management Inc; of which those are the top three. The top 10 institutional holders make up a little over a quarter of total ownership in Microsoft at 28.5%. Financial Institution activism among the top 10 is generally rated as “low”, or “very low”. The only financial institution that was rated as a “medium” is BlackRock Fund Advisors. Black Rock has conducted two campaigns in the last three years, however, neither campaign involved Microsoft. The remaining 26.65% of investors consist of those who are individual owners, mutual funds utilizing non-disclosure laws, and owners that have less than 100 million dollars invested. Insider ownership is just shy of 1.5% with the majority of that being owned by the company creator, Bill Gates. He has recently relinquished his chair on the board but continues to be a technical adviser.



Top 5 Institutional Holders	
The Vanguard Group, Inc.	7.78%
BlackRock Fund Advisors	4.58%
SSgA Funds Management, Inc.	4.09%
Fidelity Management & Research Co. LLC	2.91%
T. Rowe Price Associates, Inc.	2.39%
Total	21.75%

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Works Cited

- 2021 Investor Strategy Outlook: 6 Takeaways for the Year Ahead." *Morgan Stanley*, 1 Dec. 2020, www.morganstanley.com/ideas/global-investment-strategy-outlook-2021. Accessed 3 Dec. 2020.
- 2021 Investor Strategy Outlook: 6 Takeaways for the Year Ahead." *Morgan Stanley*, 1 Dec. 2020, www.morganstanley.com/ideas/global-investment-strategy-outlook-2021. Accessed 3 Dec. 2020.
- Business Insider. "PRESENTING: Satya Nadella Employed a 'growth Mindset' to Overhaul Microsoft's Cutthroat Culture and Turn It into a Trillion-Dollar Company — Here's How He Did It." *BusinessInsider*, 7 Mar. 2020, growth-mindset-2020-3. Accessed 4 Dec. 2020.
- Desktop OS Market Share 2020." *Statista*, www.statista.com/statistics/218089/global-market-share-of-windows-7/#:~:text=Microsoft%20Windows%20is%20the%20dominating. Accessed 3 Dec. 2020.
- Desktop OS Market Share 2020." *Statista*, www.statista.com/statistics/218089/global-market-share-of-windows-7/#:~:text=Microsoft%20Windows%20is%20the%20dominating. Accessed 3 Dec. 2020.
- Farr, Christina. "Microsoft Hires a Former GE Exec to Work with Health Companies in the Midst of the Coronavirus Pandemic." *CNBC*, 21 Apr. 2020, www.cnn.com/2020/04/21/microsoft-hires-former-ge-exec-tom-mcguinness-as-vp-of-health.html. Accessed 4 Dec. 2020.
- Gralla, Preston. "G Suite vs. Office 365: What's the Best Office Suite for Business?" *Computerworld*, 3 Feb. 2020, www.computerworld.com/article/3515808/g-suite-vs-office-365-whats-the-best-office-suite-for-business.html. Accessed 7 Dec. 2020.
- Johnston, Matthew. "Investing in Microsoft Stock (MSFT)." *Investopedia*, 3 Dec. 2020, www.investopedia.com/microsoft-stock-msft-5078359#:~:text=Microsoft%20sells%20computing%20devices%2C%20cloud. Accessed 4 Dec. 2020.
- Liu, Shan hong. "Microsoft - Statistics & Facts." *Www.Statista.com*, Statista, 22 Sept. 2020, www.statista.com/topics/823/microsoft/. Accessed 7 Dec. 2020.
- Microsoft Corporation (MSFT)." *FactSet*, my.apps.factset.com/navigator/company-security/snapshot/MSFT-US. Accessed 3 Dec. 2020.
- Microsoft Corporation (MSFT)." *FactSet*, my.apps.factset.com/navigator/company-security/snapshot/MSFT-US. Accessed 3 Dec. 2020.
- Microsoft Corporation. "Microsoft Investor Relations - 2020 Annual Report." *Microsoft.com*, 2020, www.microsoft.com/en-us/Investor/annual-reports.aspx. Accessed 3 Dec. 2020.
- Microsoft Corporation. "Microsoft Investor Relations - 2020 Annual Report." *Microsoft.com*, 2020, www.microsoft.com/en-us/Investor/annual-reports.aspx. Accessed 3 Dec. 2020.
- Moore, Gregory. "Microsoft Cloud for Healthcare: Unlocking the Power of Health Data for Better Care." *Microsoft Azure*, Microsoft, 28 Oct. 2020, azure.microsoft.com/en-us/blog/microsoft-cloud-for-healthcare-unlocking-the-power-of-health-data-for-better-care/. Accessed 7 Dec. 2020.
- Scott Guthrie." *Microsoft Leadership*, Microsoft, news.microsoft.com/exec/scott-guthrie/#:~:text=As%20executive%20vice%20president%20of. Accessed 7 Dec. 2020.

Fall 2020

SWOT Analysis of Microsoft | Business Teacher." *Businessteacher.org*, 2 Dec. 2020,
businessteacher.org/swot/microsoft-swot.php. Accessed 3 Dec. 2020.

SWOT Analysis of Microsoft | Business Teacher." *Businessteacher.org*, 2 Dec. 2020,
businessteacher.org/swot/microsoft-swot.php. Accessed 3 Dec. 2020.

Wakabayashi, Daisuke, and Steve Lohr. "Bill Gates Stepping Down From Microsoft's Board". 13 Mar.
2020, www.nytimes.com/2020/03/13/technology/bill-gates-microsoft-board.html.