The Henry Fund
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MICROSOFT CORPORATION (MSFT)

November 17, 2021

Information Technology – Software

Stock Rating HOLD

Investment Thesis

Based on our research, we have a **HOLD** rating on Microsoft Corporation. Microsoft's stock is now trading at $339.12 and our model's price target is $366, which implies an upside of 7.92%. But Microsoft already has the largest weighting of any investment in the Henry Fund portfolio, 8.92%, which is already 0.88 percentage points over market weight. Therefore, we think a hold rating is more appropriate for Microsoft.

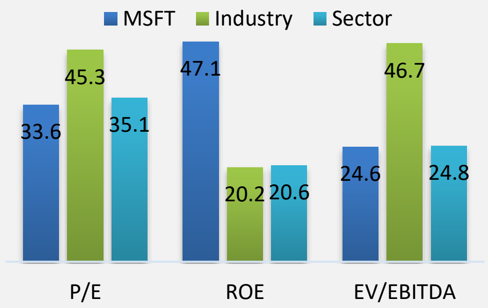
Drivers of Thesis

- The pandemic-driven cloud migration has created a tailwind for the Microsoft cloud, which will grow 17.84% to $198.08 billion in revenue in fiscal 2022, according to our model and the consensus. Thereafter it will grow steadily, ending FY 2026 with total revenues of $371.15 billion.[1]
- We expect the acquisitions and merger activity previously completed by Microsoft to reinvigorate its growth and we expect to see a 17.2% increase in its GAAP earnings per share next year.[1]
- As vaccination rates rise, the outbreak is becoming more manageable. The recovery in GDP will bring more investment in the IT sector.

Risks to Thesis

- The rebound in interest rates is not conducive to Microsoft's M&A activity and will put pressure on new and existing loans that may be obtained in the future.[14]
- Competition in the industry is fierce, with rivals ranging from diversified global companies with vast resources to small, efficient companies focused on relatively narrow product lines. Competitiveness is determined by the constant introduction of innovative products and services, but also requires significant investment in R&D.

Target Price	$366
Henry Fund DCF	$370
Henry Fund DDM	$363
Relative Multiple	$346
Price Data	
Current Price	$339
52wk Range	$208 – 339
Consensus 1yr Target	$363
Key Statistics	
Market Cap (B)	$2523.1
Shares Outstanding (M)	$7608.0
Institutional Ownership	72.6%
Beta	0.9
Dividend Yield	0.7%
Est. 5yr Growth	16.3%
Price/Earnings (TTM)	31.5
Price/Earnings (FY1)	36.7
Price/Sales (TTM)	12.1
Price/Sales (FY1)	0.0
Profitability	
Operating Margin	42.1%
Profit Margin	38.5%
Return on Assets (TTM)	21.3%
Return on Equity (TTM)	49.3%

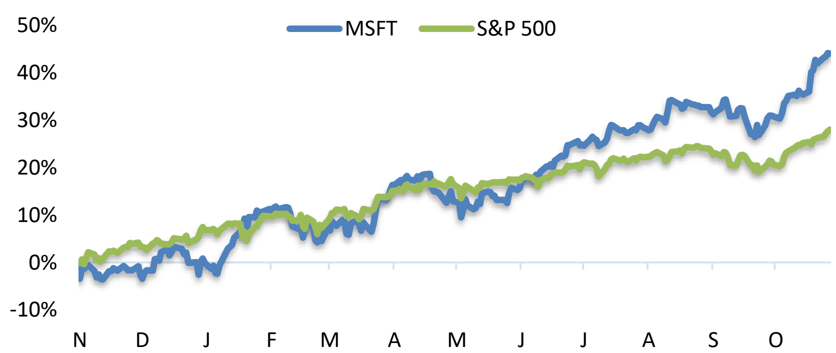


Source: FactSet

Earnings Estimates

Year	2019	2020	2021	2022E	2023E	2024E
EPS	$5.11	$5.82	$8.12	$9.44	$10.48	$12.38
HF est.	-	-	-	$9.52	$10.34	$12.21
growth	*137.7%*	*13.9%*	*39.5%*	*17.2%*	*8.6%*	*18.1%*

12 Month Performance



Source: Yahoo! Finance

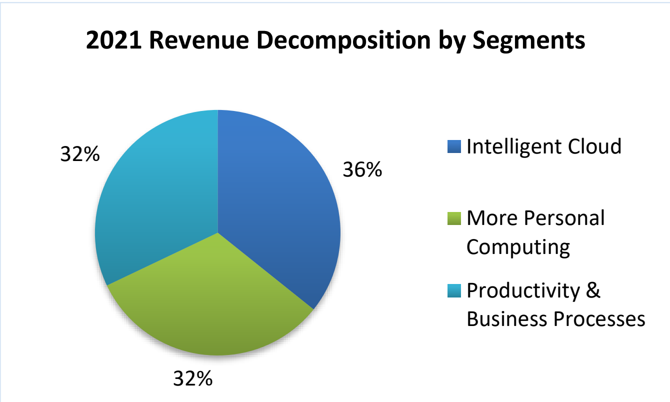
Company Description

Founded in 1975, Microsoft is dedicated to providing customers with cloud-based solutions and consulting services for software, services, and platforms.[8]
Microsoft's products include operating systems, productivity applications, servers, business solution applications, software development tools, and video games. In addition, Microsoft's business also includes the design and sale of smart devices.[8]

Important disclosures appear on the last page of this report.

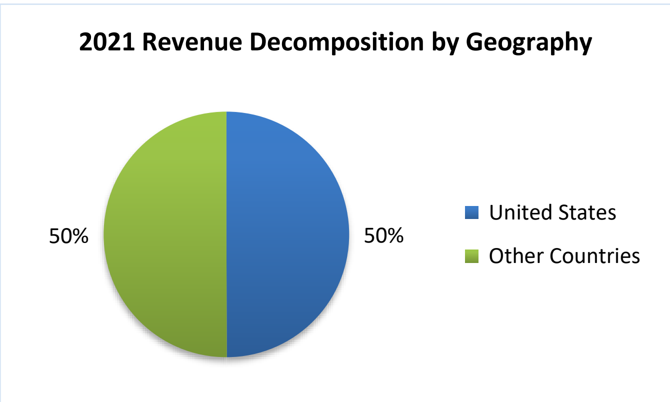
COMPANY DESCRIPTION

Microsoft Enterprise is an acknowledged leader in the software industry, focused on reinventing productivity and business processes, building intelligent cloud and edge platforms, and creating more personal computing. It operates through three divisions, as shown in the figure below: Intelligent Cloud (36%), More Personal Computing (32%), and Productivity & Business Processes (32%). Microsoft has a diverse portfolio of products and services across a variety of devices and platforms, as well as a broad commercial expansion footprint. We expect to see revenue growth of 17% over the next fiscal year.[1, 8]



Source: MSFT 2021 10K[8]

The chart below shows Microsoft's revenue based on geography in 2021. It is apparent that revenues from its operations in the U.S. continue to make up a major portion of its total revenues, at approximately 50%. The remaining 50% comes from other countries such as China (11.7%), Japan (3.8%), and Germany (3.0%).



Source: MSFT 2021 10K[8]

Intelligent Cloud

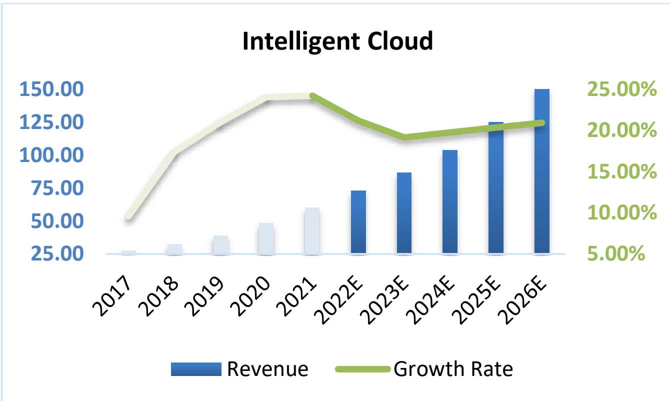
More and more companies are embarking on digital transformation to improve efficiency, optimize operations and attract more customers, creating a strong impetus for the growth of the intelligent cloud sector. Microsoft's cloud business benefits from three economies of scale: data centers with very small unit costs; data centers that can meet the needs of different models with efficient resource utilization; and low application maintenance costs.[8]

The main business of the Intelligent Cloud Division are:

- Azure, SQL Server, Windows Server and other server products and cloud services.
- Enterprise services including advanced support and consulting services.[8]

In 2021, Intelligent Cloud contributed 35.74% of total revenue, ranking first among the three operating segments.[1] In the first quarter of 2022, the segment's revenue grew 31% compared to the same period last year, with server products and cloud services revenue driven by Azure's revenue growth, up 35%.[10]

The following chart illustrates our forecast for this segment of the business over the next five years. Based on the strong performance of Azure and other cloud services, we expect its revenue to grow by 21.18% next year and by an average of 20.28% over the next five years.[1]



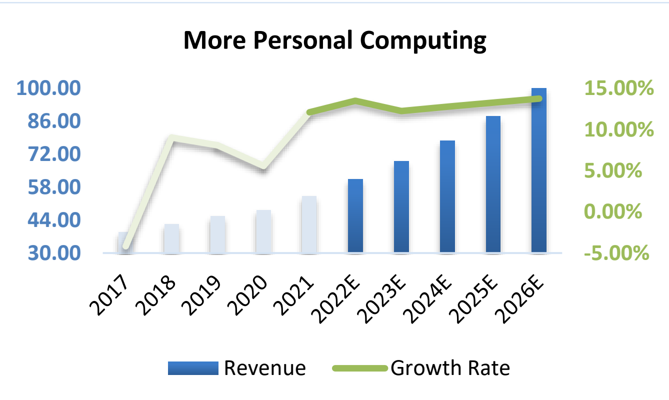
Source: Henry Fund Model[1]

More Personal Computing

The More Personal Computing division puts the customer at the heart of the experience and aims to make computing more personal with more intuitive and engaging interactions. The division focuses on Windows-related services, devices such as Surface and PC accessories, Xbox-related content and services, and search advertising.[8]

The More Personal Computing segment comes in second with $54.1 billion in revenue in fiscal 2021, representing 32.2% of total revenue, slightly ahead of the Productivity and Business Processes segment.[1] Compared to Q1 2021, the segment's revenue increased 12% in Q1 2022. In particular, Windows OEM revenue grew 10%, Windows Commercial Products and Cloud Services revenue grew 12%, Xbox-related revenue grew 2%, and advertising revenue grew 40%, but Surface-related revenue declined 17%.[10]

The next chart shows our anticipation for this segment through fiscal year 2026. We are positive about Windows 11, which officially launched on October 5, 2021, and believe it will spur revenue growth from Windows-related commercial products and services. We expect its revenue to grow by 13.52% in the coming year and by an average of 13.13% over the next five years, the most modest of the three segments.[1]



Source: Henry Fund Model[1]

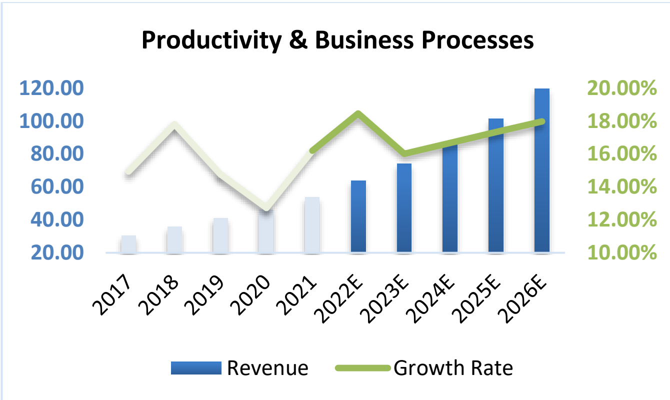
Productivity & Business Processes

The Productivity and Business Processes segment covers products and services related to productivity, communications, and information services, specifically:

- Subscription-based or locally licensed Office commercial, including Office, Exchange, Microsoft Teams, Skype for business, etc.[8]
- Subscriptions or local licenses for Office consumers, similarly, cover Office, Skype, Outlook, OneDrive, etc.[8]
- LinkedIn, which contains Talent, Marketing, Sales, and Learning Solutions, as well as Premium Subscriptions.[8]
- Includes a set of Dynamics business solutions across ERP, CRM, Customer Insights, etc. based on cloud or local applications.[8]

For fiscal 2021, the Productivity and Business Processes segment contributed 32.1% of total revenue, ranking third among the three operating segments by a narrow margin.[1] According to its FY 2022 Q1 earnings report, this segment's revenue increased by 22% compared to the same period last year. The four sub-divisions mentioned above grew by 23%, 10%, 42%, and 48%, respectively, driven by growth in cloud services revenue and growth in marketing solutions.[10]

The chart below shows our expectations for this segment over the next five years. Based on our optimism about cloud services and Microsoft's continued innovation, we expect this segment's revenue to grow 18.46% over the next year, with an average growth rate of 17.29% over the next five years.[1]



Source: Henry Fund Model[1]

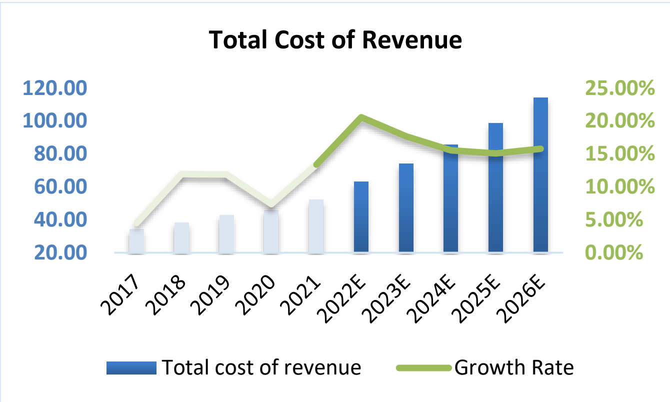
Cost Structure Analysis

Microsoft's major operating expenses for 2021 were 54.41% of total sales, which included Total Cost of Revenue (31.07%), Research and Development (12.32%), and Sales & Marketing (11.97%).[1] Compared to last year, these expenses have increased by approximately 9.7%.[1]

Total Cost of Revenue

Microsoft's total cost of revenue includes manufacturing and distribution costs for the sale of products and licensing programs, operating costs for product support service centers and distribution centers, advertising lead generation costs, support and maintenance costs, depreciation & amortization, etc.[8]

As a percentage of total sales, total cost of revenue did not fluctuate much, so we used a historical average of 34.37% in our projections. According to their 10K, the increase in total cost of revenue in 2021 is related to growth in the commercial cloud and gaming businesses. The chart below shows our estimates for its annual growth rate, which we expect to decrease and gradually stabilize at around 15%. Combined with our revenue forecasts for each segment, we believe such a growth rate is reasonable.[1]

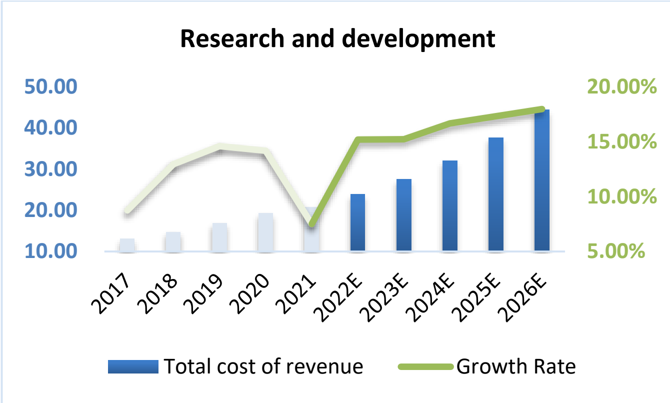


Source: Henry Fund Model[1]

Research & Development

Microsoft's R&D expenses consist of salaries, employee benefits, and costs associated with software development. In 2021, the R&D expenses were $20.7 billion, an increase of 7.5% over last year. According to Microsoft, this was brought about by investments in cloud engineering.[8]

Since R&D expenses are critical to the growth of software industry players, we believe that Microsoft will continue to invest more in R&D for the foreseeable future to facilitate the growth of its cloud services. As shown in the chart below, we expect R&D expenses to grow by 15.2% in 2022, with an average annual growth rate of 16.49% through the end of fiscal 2026.[1]

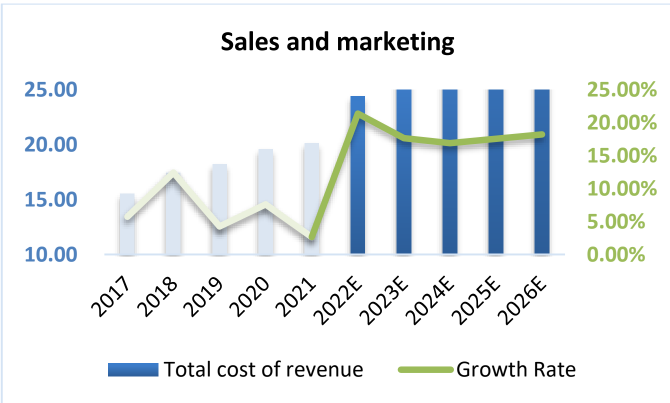


Source: Henry Fund Model[1]

Sales & Marketing

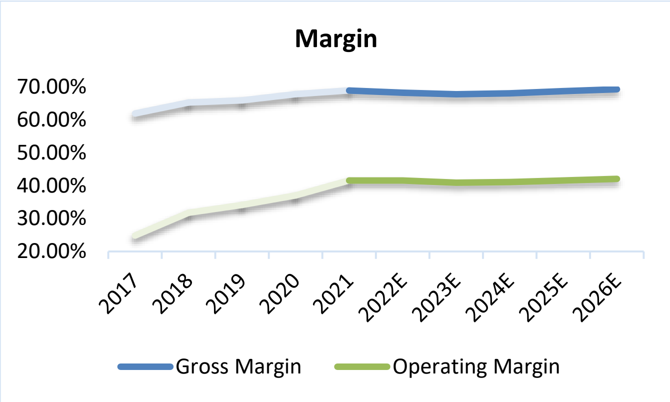
Microsoft's sales and marketing expenses cover expenses such as salaries, which are determined by the number of employees, and expenses such as advertising and promotion. Sales and marketing expenses were $20.1 billion in 2021, which included a negative foreign exchange impact of 2%. It was up 2.6% over last year, boosted by investment in commercial sales.[8]

As illustrated in the chart below, based on Microsoft's guidance, we expect to see sales and marketing expenses grow by 21.39% in fiscal year 2022, with annual growth rates gradually slowing to a steady rate of around 18.36% thereafter.[1]



Source: Henry Fund Model[1]

In 2021, Microsoft's gross and operating margins received a positive foreign exchange impact of 3% and 4%, respectively, but it is uncertain whether this trend will continue. In addition, according to Microsoft, competition in the industry is extremely fierce and competitive pressures may adversely affect sales volume, selling prices, and operating costs, resulting in lower gross margins. Our model reflects these conditions well, with gross and operating margins expected to be slightly lower in 2022 than last year.[1] However, we believe that Microsoft's industry position is unshakeable, and its strong drive to launch dozens or even hundreds of new products every year is enough to support its stable gross and operating margins in the face of fierce competition. Its margins are still on a steady upward trend in the long run.[8]



Source: Henry Fund Model[1]

Debt Maturity Analysis

According to 2022 Q1 earnings report, Microsoft's board of directors expects the company's liquidity to be sufficient to support operating, investing, and financing activities such as dividend payments, debt repayments, and material capital expenditures. As of September 30, 2021, Microsoft had $130.6 billion worth of cash, cash equivalents, and short-term investments, well above its minimum liquidity of $1 billion.

According to the company's guidance, $8.08 billion of debt will mature in 2021. In terms of cash alone, our model forecasts $41.74 billion through the end of fiscal 2022. Combined with the best AAA debt credit rating from S&P and a stable rated liquidity outlook, we do not believe Microsoft will face liquidity-related issues.

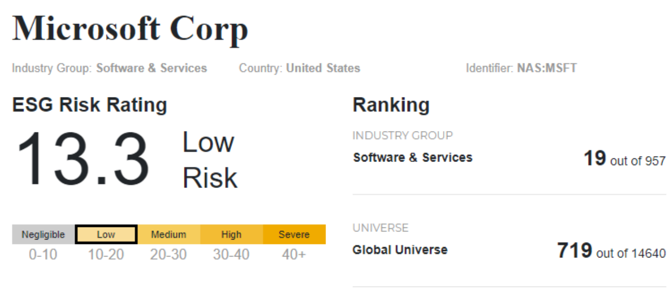
Fiscal Year	Payment ($B)
2022	8.08
2023	2.75
2024	5.25
2025	2.25
2026	3.00
Thereafter	42.59
Total	63.91

Source: MSFT 2021 10K[8]

ESG Analysis

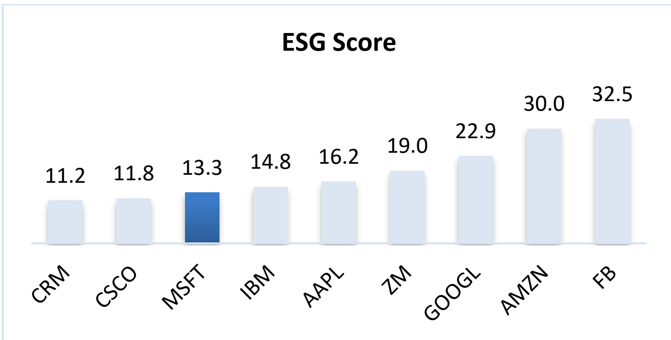
According to Sustainalytics, Microsoft's ESG score of 13.3 is in the low-risk range, ranking 19th out of 957 companies in the Software & Services industry. This suggests that Microsoft's exposure to various ESG issues is relatively low compared to other companies in the same industry, and its management of ESG issues is relatively good.

Microsoft has been carbon neutral globally since 2012 and has committed to a goal of achieving negative carbon emissions by 2030. It also commits to taking responsibility for its land footprint, permanently restoring, and protecting more land than it uses by 2025. In a further emphasis on sustainability, Microsoft is reducing waste through the reuse of materials and methods such as recycling, and is committed to achieving zero waste by 2030.[11]



Source: Sustainalytics[9]

The chart below compares the ESG scores of Microsoft and its competitors. Microsoft scored third behind salesforce and Cisco. We find that with the exception of Google, Amazon and Meta, all of these companies are in the low-risk category. We believe that the stock prices of these companies partially reflect the impact of relatively good ESG ratings.



Source: Sustainalytics[9]

RECENT DEVELOPMENTS

2022 Q1 Earnings Announcement

On October 26, 2021, Microsoft announced results for the first quarter of fiscal year 2022 ending September 30, 2021. Compared to the same period last fiscal year, revenue of $45.3 billion increased 22%, beating consensus by 3.3%; operating income of $20.2 billion increased 27%; GAAP net income was $20.5 billion, up 48%. GAAP earnings per share were $2.71, beating consensus by 9.13%. Microsoft Cloud alone generated $20.7 billion in revenue in the quarter, up 36% year-over-year, driving first quarter results with strength. See the Company Description section for business highlights by operating segments.[12]

Microsoft provided forward guidance for Q2 during the earnings call:

- Capital expenditures are expected to be roughly flat from the previous quarter ($5.81 B), and Microsoft will continue to invest to meet demands.
- Total Productivity and Business Processes revenues will range from $15.7-15.95 billion.
- Intelligent Cloud revenues will be between $18.1 and $18.35 billion.
- More Personal Computing revenues will range from $16.35 to $16.75 billion.
- Total cost of revenue is expected to be $17 to $17.2 billion and operating expenses are expected to be $12.7 to $12.8 billion.

Microsoft will continue to optimize the experience of its cloud products and drive fiscal 2022 results with the latest versions of Windows, Surface, and the Xbox gaming platform.[12]

COVID-19 Impact

While the pandemic created headwinds for traditional software license, upgrade, and support revenues, it created strong tailwinds for cloud subscription revenues: the sudden outbreak increased pressure on retail and tourism, accelerating cloud migration; consumers are expected to continue the online shopping habits they developed during this period. Although COVID-19 made certain expenses larger, combined with its gross margin (+1.14%) and operating margin (+4.56%) changes, overall, we do not believe it had a material adverse impact on Microsoft.[1, 3]

During the pandemic, Microsoft worked to ensure employee well-being by modifying employee travel policies, closing offices, and allowing non-essential employees to work remotely. Service providers who charge by the hour can continue to be paid. The existing Microsoft CARES employee assistance program was expanded.[8]

According to the company's guidance, the instability caused by the outbreak could adversely affect the following activities:

- Maintenance of operational infrastructure to meet the stability and capacity requirements of cloud services.
- Maintaining stable international businesses.
- Ability to hire the required workforce[8]

ACQUISITIONS

Microsoft has frequent acquisition activity, which is common for an industry giant like it. The software industry is fast-paced, and product development cycles are key, so acquiring new technology or expanding existing product lines through acquisition is often more attractive than developing them in-house.[3]

In December 2020, Microsoft acquired Smashgg, Inc. for an undisclosed amount to expand its gaming-related services.[2]

In March 2021, Microsoft acquired Marsden Group for undisclosed terms to enhance its ability to create customer value with solutions based on Microsoft's cloud, edge, and artificial intelligence offerings.[2]

In March 2021, Microsoft acquired ZeniMax Media, Inc., the parent company of Bethesda Softworks LLC, one of the world's largest privately held game developers and publishers, for $8.1 billion.[2]

In April 2021, Microsoft announced the acquisition of Nuance Communications, Inc., a software provider with both artificial intelligence and healthcare experience, for $19.7 billion. This is the largest deal in Microsoft's history after the acquisition of LinkedIn. Microsoft is trying to build a healthcare cloud.[2]

In May 2021, Microsoft acquired Kinvolk GmbH for an undisclosed price to enhance each other's services and growth opportunities.[2]

In June 2021, Microsoft acquired ReFirm Labs, Inc. for an undisclosed price to provide silicon and cybersecurity.[2]

In July 2021, Microsoft acquired RiskIQ for undisclosed terms to enhance cybersecurity.[2]

In July 2021, Microsoft acquired CloudKnox Security, Inc. for an undisclosed amount to further expand its security business.[2]

In July 2021, Microsoft acquired Suplari for undisclosed terms to enhance business optimization capabilities.[2]

In our view, there is no doubt that such frequent and aggressive acquisitions by Microsoft will provide a strong impetus to its growth and help it expand its product line and solidify its position in the industry.

MARKETS AND COMPETITION

Cloud-based software development tools

Programmers are as important to the software industry as gasoline is to a car. Today, more and more programmers tend to use Web-based collaboration tools to share or modify code because it reduces the amount of time programmers need to develop or test software. Pandemic restrictions are causing more and more employees to work from home, and with the growing use of open-source software, there is a growing demand for such collaboration tools. GitHub, which Microsoft previously acquired, is the world's largest provider of collaborative code hosting, with more than 27 million users since 2008.[13]

Open-Source Software

As we just mentioned, open-source software has become increasingly popular in the last decade. The rapid growth of this type of software, which has source code that can be freely modified and redistributed, poses an alternative threat to the software industry based on traditional licensing models.[13]

Porter’s Five Forces

Threat of New Entrants (High)

According to CFRA Software industry survey, on average, dozens of new software companies are formed every day. On the one hand, software is the most preferred choice of venture capital in the information technology industry. This is because of its short development cycle, which can see results in as little as a few weeks, while semiconductor companies take years to achieve; on the other hand, the rapid growth of the software industry also brings rich returns for venture capitalists, and they complement and reinforce each other. Its rapid growth is attracting more investors, and more and more investment is attracting entrepreneurs who want a slice of the pie. On balance, we believe that the threat from new entrants is relatively high.[3]

Threat of Substitutes (Moderate)

We believe that the threat from substitutes in the Software industry is moderate. Complete replacement of existing software poses immeasurable and unpredictable risks for consumers or businesses, so complete or rapid replacement is uncommon. However, near replacement or gradual obsolescence is very common, and existing vendors will need to update or transition existing software, such as moving from local client-server applications to cloud-based programs. In addition, vendors also need to face intense competition in the industry, as we mentioned before.[3]

Bargaining Power of Suppliers (Moderate)

In the Software industry, the bargaining power of suppliers is unique. On the one hand, the design and construction of software do not require physical raw materials. However, skilled workers or engineers with design and development skills are pivotal to the growth of a company. Smaller companies seem to have a more difficult time attracting or retaining these talents, as large companies offer terms of employment that are difficult for smaller companies to match. Therefore, taken together, we believe that the bargaining power of suppliers is moderate.[3]

Bargaining Power of Customers (Low)

Based on our research, we believe that customer bargaining power in the software industry is moderate. Since most of the revenue comes from enterprise customers, their influence is very significant. However, their influence is also limited by specific market segments, and the demand for specific software from companies. These specific dependencies can also affect the loyalty of that customer to different applications.[3]

Intensity of Rivalry (High)

We believe that competition within the software industry is fierce. Regardless of whether it is run through traditional license sales and maintenance models or subscription-based payment and cloud delivery models, the entire product cycle speed in the software industry is no less than that of the fashion industry, and the cost of mistakes is very high due to the increasingly important role it plays in running businesses. In addition, major players such as Microsoft, Oracle, and IBM account for over 80% of the industry's combined revenue. However, the increasing number of new entrants and the rapidly changing market share percentages all indicate that, on average, the level of competition within the Software industry is intense but healthy.[3]

Peer Comparisons

Players in the software industry compete on various fronts, such as brand awareness and price. While most of the industry's revenue comes from corporate customers, the spending power of individual consumers cannot be ignored, and they are more price conscious than corporations. Operators focused on meeting the needs of enterprise consumers have had to differentiate between enterprise and individual customer use of software, allowing them to charge higher prices for the former. But it must be said that the rise of open-source downloads and cloud-based software has increased competition in the industry, and consumers are no longer focused on comparing prices, but tend to look for free alternatives. In addition, the industry is becoming increasingly global, with a growing share of revenue coming from international customers.[4]

Based on our research and Microsoft's latest earnings report, we learned that its main competitors are Apple Inc. (AAPL), Alphabet Inc. (GOOGL), Meta Platforms Inc. (FB), Amazon.com, Inc. (AMZN), International Business Machines Corporation (IBM), salesforce.com, inc. (CRM), Cisco Systems, Inc. (CSCO), and Zoom Video Communications, Inc. (ZM). Because these companies operate different industry segments, we did not present their industry market share percentages; instead, as shown in the table below, we compared their market capitalization, revenue from the software industry, and revenue from the software industry as a percentage of total revenue. This table is based on a descending order of industry revenue.

In terms of market capitalization, Apple and Microsoft are far ahead of the pack, as they have taken the lead in the over $2 trillion market cap category. They are followed by Google and Amazon, which are also approaching this value, and IBM and Zoom, which are relatively small. In terms of industry revenue, there is no doubt that Google and Microsoft are the industry leaders, with similar industry revenue of about $150 billion. Cisco and Zoom's industry revenues are relatively low among their peers, at $6 billion and $3 billion respectively. This is understandable since Cisco only generates about 11% of its revenue from the software industry. On the other hand, Zoom is the youngest of these companies, with the pandemic providing the impetus for its growth.

	Mkt Cap ($B)	Revenue from Industry ($B)	Revenue from Industry (%)
GOOGL	1,980	158	86.9
MSFT	2,528	146	86.8
FB	948	86	100.0
AMZN	1,788	71	18.3
AAPL	2,461	68	18.7
IBM	107	68	92.3
CRM	300	21	100.0
CSCO	240	6	11.1
ZM	76	3	100.0

Source: Bloomberg[5]

Apple Inc. (AAPL)

Apple Inc. specializes in the design, manufacture, and sale of smart products, wearable devices, and accessories. It has operations around the world, including the Americas, Europe, and the Asia Pacific region. Apple operates through five segments: iPhone (52.5%), Services (18.7%), Wearable, Home & Accessories (10.5%), Mac (9.6%), and iPad (8.7%). Its competition with Microsoft is in several areas of the industry, such as smartphones, personal computers, advertising, software, cloud services, operating systems, etc. The two spend comparable amounts on R&D, with the latest financial reports showing that Apple and Microsoft spent $21.91 billion and $20.72 billion on R&D, respectively, in the past fiscal year.[2]

Alphabet Inc. (GOOGL)

Alphabet is a holding company engaged in the business of acquiring and operating companies, operating primarily through the Google and Other Bets divisions. The Google division covers its major Internet products such as Android, Chrome, advertising, Google Maps, Google Cloud, YouTube, etc.[2] In addition, Google is the overwhelmingly dominant Internet search engine, with this aspect accounting for 55%-65% of total revenues.[6] Alphabet has four operating divisions, Google Services (92.5%), Google Cloud (7.2%), Other Bets (0.4%), and Hedging Gains/Losses (0.1%).[2] Its competition with Microsoft revolves around Google and Bing, as well as Google Cloud and Azure.[6]

Meta Platforms Inc. (FB)

Meta Platform Inc. is a global social technology company dedicated to connecting users through augmented reality and virtual reality smart devices, such as Facebook Reality Lab products, and social media platforms, such as Facebook, Instagram, Messenger, and WhatsApp. The company also uses the aforementioned platforms to precisely tag users and push them ads that may be of interest to them. the main source of Meta's revenue is the advertising division (97.9%). The competition between Microsoft and Meta occurs mainly in the provision of connectivity services and communication products to users.[2]

Amazon.com, Inc. (AMZN)

Amazon.com is the world's leading provider of online retail services, as well as cloud computing services for individuals, companies, or governments.[7] The company operates through six divisions: Online Stores (51.1%), Third-Party Seller Services (20.8%), Amazon Web Services (11.8%), Subscription Services (6.5%), Other (5.6%), and Physical Stores (4.2%).[2] It competes with Microsoft mainly for market share of cloud services.

International Business Machines Corporation (IBM)

IBM is engaged in providing integrated solutions for software or hardware to customers worldwide. It operates through six divisions: Global Technology Services (35.1%), Cloud & Cognitive Software (31.8%), Global Business Services (22.0%), Systems (9.5%), Global Financing (1.5%), and Other (0.2%).[2] Microsoft is facing pressure from IBM for several of its products, such as server products, because IBM pre-installed their own Unix operating system on the server hardware. Additionally, there are enterprise computing and point solutions, as well as database, business intelligence, and data warehousing solutions.[8]

salesforce.com, inc. (CRM)

salesforce designs and develops cloud-based enterprise customer relationship management software. It has five operating divisions: Platform & Other (29.5%), Services (25.3%), Sales (24.4%), Marketing & Commercial (14.7%), and Professional Services & Other (6.0%).[2] Microsoft's Dynamic, which provides a variety of local or cloud-based solutions for all types of businesses and organizations worldwide, faces competition from salesforce.[8]

Zoom Video Communications, Inc. (ZM)

Zoom provides a video communication platform for people in various industries, helping users to communicate and connect through voice, video, and content analysis.[2] Its only operating segment is Video-first Unified Communications Platform, and the competition between Zoom and Microsoft revolves around Office.[8]

Cisco Systems, Inc. (CSCO)

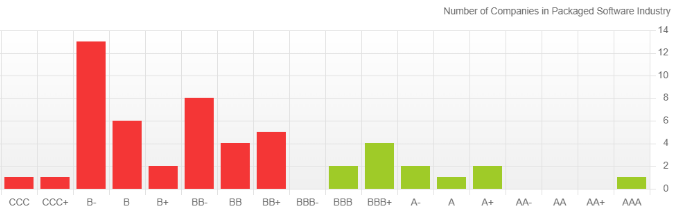
Cisco focuses on the design, manufacture, and sale of Internet Protocol-based products and services related to communications and information technology, such as switches, wireless, optical networks, VPN security clients, etc. Cisco has five segments: Infrastructure Platforms (54.4%), Services (27.7%), Applications (11.0%), Security (6.8%), and Other (0.0%).[2] According to Microsoft's latest financial report, the pressure from Cisco is mainly brought by Cisco's use of its position in the enterprise communications equipment segment to develop the unified communications business.[8]

The table below compares Microsoft's debt and credit profile to its peers, and we have ranked them from highest to lowest debt rating. It is worth noting that Meta Platform and Zoom do not have any debt at the moment, so we have excluded both of their values from the comparison. Looking at the Debt/Asset ratio, Microsoft's 23.5% is in the middle of the pack. Looking at the EBITDA/Interest Expense ratio, we were surprised by Alphabet's performance with EBITDA about 300 times the interest expense. Microsoft's performance is second only to Alphabet and Apple at 37.69x. On top of that, Microsoft has the best debt rating of AAA, so on balance, we think Microsoft has enough assets to pay its own debt and enough revenue to pay interest.

	Debt/ Asset	EBITDA/ Interest Expense	S&P Debt Rating
MSFT	23.5%	37.69x	AAA
GOOGL	8.1%	302.35x	AA+
AAPL	38.9%	45.46x	AA+
AMZN	33.9%	34.43x	AA
CSCO	13.0%	35.65x	AA-
CRM	17.8%	33.32x	A+
IBM	40.9%	12.61x	A-
FB	7.8%	-	-
ZM	1.5%	-	-

Source: FactSet[2]

We learned from FactSet that the debt ratings of software industry participants fluctuate between CCC and AAA. This is shown in the chart below. Microsoft's AAA credit rating is extremely safe and far better than the industry average.



Software Industry S&P Debt Rating Distribution

Source: FactSet[2]

The following table compares Microsoft's gross margin, pre-tax margin and R&D expenses for the coming year to its peers and ranks them in descending order of gross margin. Microsoft has a relatively nice gross margin (68.4%) and a strong pre-tax margin (42.1%) performance compared to its peers.

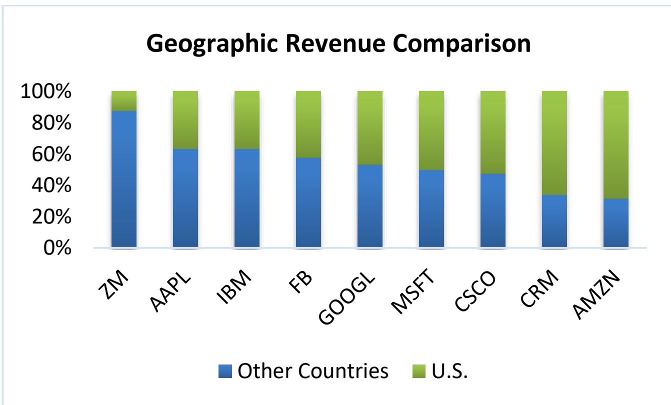
We see that FB also performs strongly, with the highest gross margin and the second highest pre-tax margin. ZM's performance is surprising, although it does not compare favorably to its peers in terms of market capitalization or industry revenue. But its gross and pre-tax margins are great. Note that AMZN is relatively weak, but in combination with R&D expenses, AMZN has the highest R&D expenses ($49.8 billion), so we believe its pre-tax margin of 5.6% is reasonable.

In terms of R&D expenses, various industry leaders, such as Meta Platform, Microsoft, Alphabet, Apple, and Amazon, are expected to spend more than $20 billion in their next fiscal year. This is in line with our analysis of the Porter's Five Forces in the software industry: although there is no physical raw material in the industry, the demand for R&D is extremely high.

	Gross Margin	Pretax Margin	R&D ($B)
FB	80.7%	40.7%	22.7
CRM	77.8%	20.7%	3.6
ZM	74.7%	38.0%	0.2
MSFT	68.4%	42.1%	23.6
CSCO	63.6%	33.8%	5.8
GOOGL	57.0%	34.5%	31.7
IBM	50.2%	14.5%	6.1
AAPL	41.8%	28.9%	25.0
AMZN	41.6%	5.6%	49.8

Source: FactSet[2]

The software industry is a special case because its products are less limited by distance and transportation costs. So compared to other industries, such as food, materials, etc., the software industry is doing better in globalization. The table below shows the geographic revenue of Microsoft and its competitors. Clearly, Zoom has done the best job of expanding its global footprint because its business is largely free of physical transportation, while Amazon's revenue comes more from within the United States. Microsoft is relatively evenly split between domestic and foreign revenue, both accounting for about 50% of total revenue.

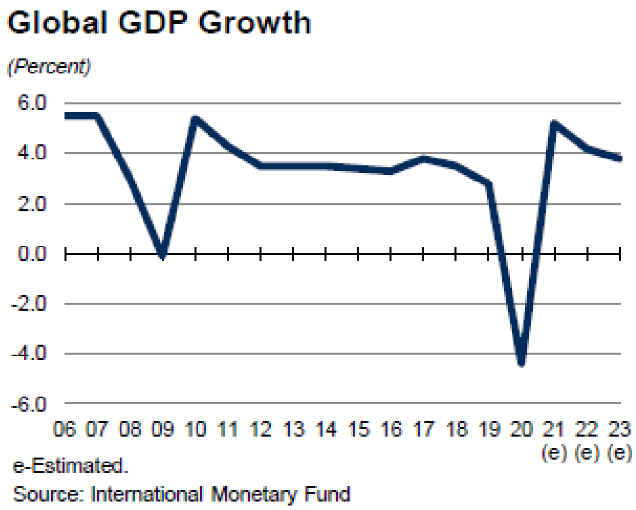


Source: FactSet[2]

ECONOMIC OUTLOOK

Global GDP Growth

As illustrated below, the global GDP fell 4.4% in 2020 compared to the same period the previous year due to the epidemic. According to the IMF forecast, 2021 is expected to see a global economic recovery with 5.2% GDP growth. As global vaccination rates steadily increase, we expect steady economic development, IT spending, and a return to pre-pandemic growth rates in the software industry.[3]

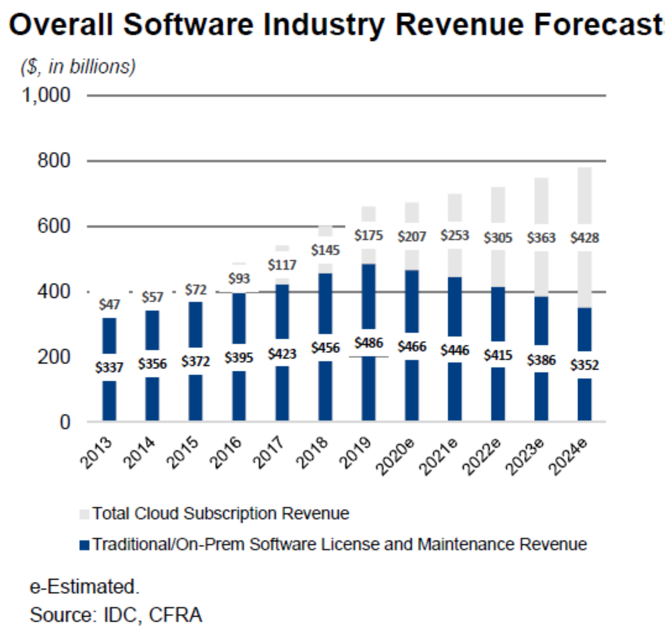


Source: CFRA Software Industry Survey[3]

Overall Software Industry Revenue Forecasts

In 2020, the sudden outbreak had a significant impact on the software industry, whose total industry revenue growth was only 1.8%, which was a 7.3% slowdown compared to the previous year. The chart below shows a comparison between the software industry's traditional license maintenance revenue and cloud subscription revenue. For the first time in a decade, we saw a decline in traditional model revenue, down about 4.1%. This was offset by a strong 20.7% increase in cloud subscriptions and did not affect the upward trend in total software industry revenue.[3]

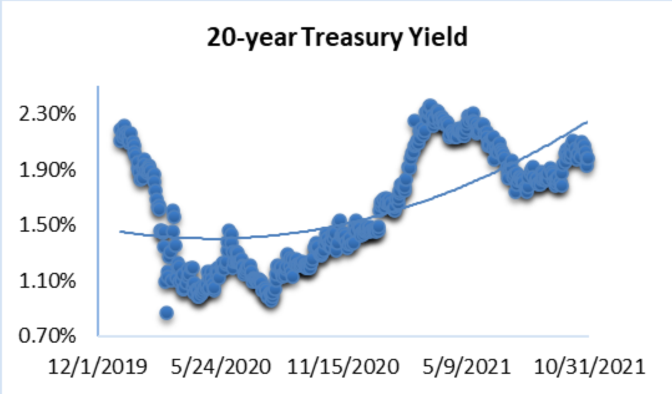
According to CFRA, total software industry revenue will grow by 6.4% in 2021. As pent-up demand is unleashed and cloud-based products and services are updated and upgraded, we expect to see increased pricing power for vendors to follow. We think vendors have the ability to pass cost volatility on to consumers, so we think we will see more rapid growth in cloud subscription revenue after that.[3]



Source: CFRA Software Industry Survey[3]

Interest Rate

The chart below shows the change in the 20-year Treasury Yield since 2020, and we can clearly see that rates are rebounding. The low-interest rates that existed during the epidemic to stimulate consumption and growth no longer exist, and we believe this move is also intended to mitigate the inflation of the moment. This will certainly have a negative impact on the Software industry, as the industry used to engages in a lot of M&A activities to expand its product line and gain market share to gain room for growth. High-interest rates will discourage businesses like Microsoft from issuing new debt and will increase the interest burden on their existing debt.



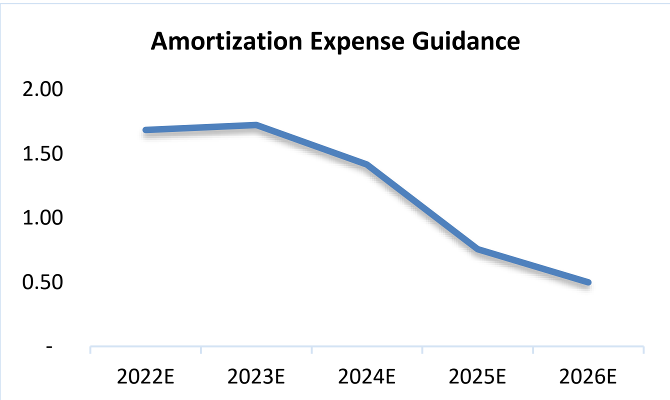
Source: U.S. Department of the Treasury[14]

VALUATION

Income Statement

We expect total sales to grow 17.84% in 2022, totaling approximately $198 billion. The total cost of revenues will be approximately $63 billion, representing a growth rate of 20.57%. Research and development, sales and marketing, and general and administrative will be approximately $23.87 billion, $24.42 billion, and $4.54 billion, respectively. For margin expectations and a detailed description, please see the company's presentation section.[1]

In addition to the expenses described above, Microsoft has depreciation and amortization expense. We found that Microsoft's depreciation rate has trended downward in recent years, so we used the average depreciation rate of the past two years as a benchmark and the initial PP&E for each year to estimate future expenses. As for amortization expense, we followed the guidance provided by Microsoft, as detailed below.[1]

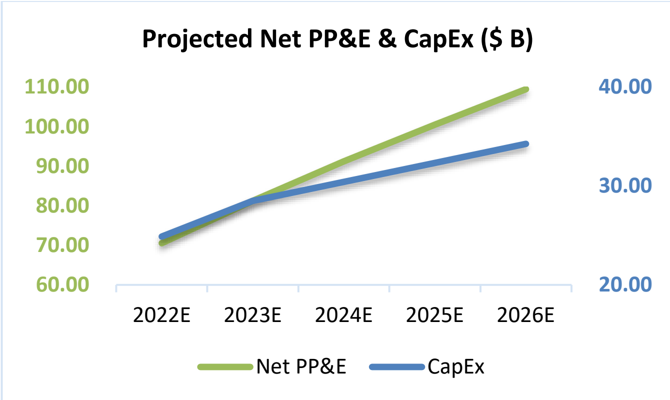


Source: Henry Fund Model[1]

Balance Sheet

Operating assets and liabilities, such as Accounts Receivable, Inventories, Other current assets, Accounts Payable, Accrued Compensation, etc., are pro forma using their historical average percentage of sales, and we do not expect to see significant changes in this percentage in the foreseeable future, any short-term fluctuations will net off in the long term.[1]

We used the initial net PP&E value plus additional capital expenditures minus depreciation expense to estimate the future net PP&E value. We followed the guidance for Capital expenditures. The future capital expenditure and net PP&E are shown below.[1]

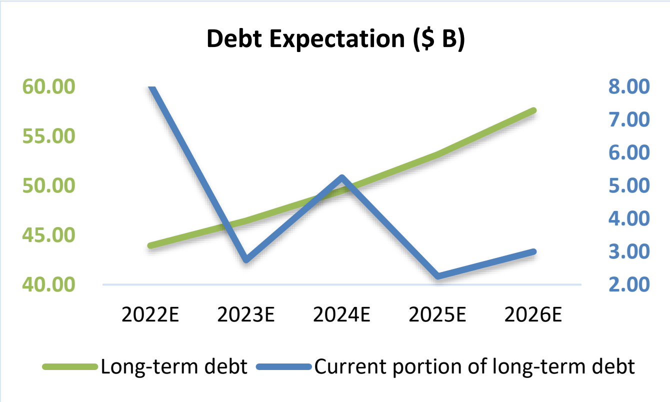


Source: Henry Fund Model[1]

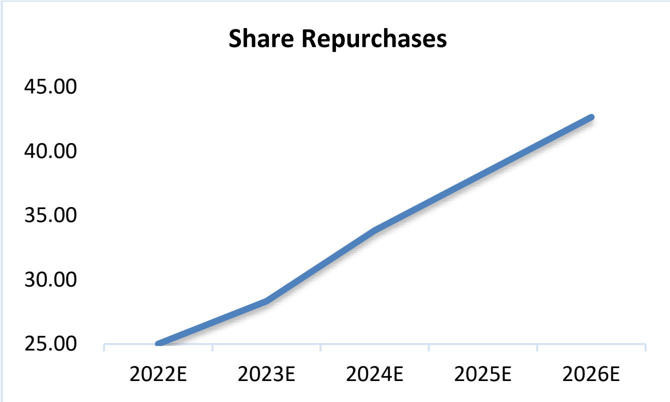
We forecasted investment-related assets based on current 1-year Treasury yield (0.14%). We assumed that the return on investment will be close to this number. We multiplied (1+ROI) by the previous year's value to get the new value.[1]

Since it has had short-term debt for only four of the last ten years, and Microsoft has not had short-term debt for four years in a row, we predict that it will not have short-term debt in the next five years either.[1]

As for the current portion of long-term debt, we reflect the long-term debt maturity schedule provided by Microsoft. For long-term debt, we project it as its historical average percentage of non-cash assets. These are shown in the chart below.

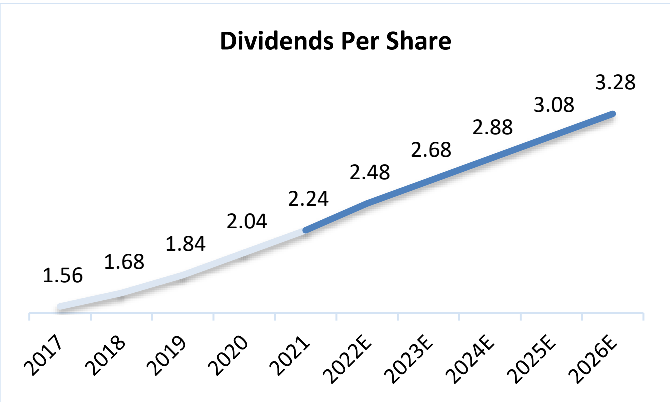


Source: Henry Fund Model[1]



Source: Henry Fund Model[1]

Microsoft has continued to grow its dividend payout steadily in the past. As it released its first quarter earnings for fiscal 2022, we used the first quarter dividend times 4 to forecast the annual dividend for the current fiscal year. Microsoft's dividend increases fluctuate between 0.12 and 0.24, and we took the more frequently occurring value of 0.20 for future dividend increases. See the chart below for a forecast of the dividend.[1]



Source: Henry Fund Model[1]

We learned from Microsoft's 10K report that as of June 30, 2021, $8.7 billion of stock is available for repurchase under the company's stock repurchase program. The repurchase program is subject to liquidity needs, market, regulatory requirements, and other factors. As shown in the chart below, we followed the company's guidance amount for the repurchase forecast.

According to our model, Microsoft Corp. has 2022 GAAP earnings per share of $9.52, which falls within the EPS range provided by FactSet but is on the high side. We believe this is related to the slightly more aggressive revenue derived from our model. A comparison of our model's EPS to FactSet is shown below.[1, 2]

GAAP EPS ($)	2022E	2023E	2024E
FactSet	8.96-9.66	9.91-10.90	11.45–13.20
Model	9.52	10.34	12.21

Source: FactSet[2]*, Henry Fund Model*[1]

Model

We constructed discounted cash flow (DCF) and economic profit (EP) valuation models, dividend discount model (DDM), and relative valuation (PE) model. The target prices obtained from these three models are $369.51, $362.63, and $345.74, respectively. The final target price is $366, which is the average of the target prices from the first two models.[1]

Discounted Cash Flow

The 6.29% cost of equity, 1.96% after-tax cost of debt, 96.92% equity weight, and 3.08% debt weight generated a weighted average cost of capital of 6.16% for Microsoft. We have a 2% projected CV year NOPLAT growth rate and a 256% CV year ROIC. The discounted cash flow model yields a $369.51 target price with these inputs. The economic profit model has the same implied share price as the DCF model.[1]

We consider DCF reliable because it does not only account for income statement data. It also takes into account operating assets, non-operating assets, debt, operating leases and employee stock ownership plans, which provides a more complete and reliable long-term view.[1]

Dividend Discount Model

With a CV year EPS growth rate of 2.5%, a CV year ROE of 43.27% and a cost of equity of 6.29%, this model yields a Microsoft price target of $362.63.

We believe the DDM is solid because Microsoft has a long history of steady dividend payments and their dividends per share increased year over year.

Relative Valuation Model

We ultimately did not use the target price given by this model because we believe the average P/E ratio of the peers does not truly reflect Microsoft, and most of the peers have lower P/E ratios than it. Microsoft's P/E ratio is expected to be 35.31 in 2022, while peers' expected P/E ratios fluctuate between 13-83. In comparison, we believe Microsoft's stock is overvalued compared to most of its peers.[1]

SUMMARY

All in all, we believe Microsoft's position as an industry leader with a diverse product line and attractive margins will be difficult to catch up with. However, Henry Fund has currently overweighted the IT industry, exceeding the market weight by 2.83%. The holding in Microsoft also exceeds the S&P 500 by 0.88% and there is no need to add to the position for a potential 7.96% upside, so I recommend holding Microsoft.

We need to keep a close eye on interest rates to determine if it is continuing to pick up. For a giant like Microsoft, which frequently and heavily engages in acquisitions, rising interest rates are significantly detrimental to business.

We also need to watch for Microsoft Cloud, by which Microsoft has been given a very strong start to fiscal 2022. Whether such momentum remains strong, and how long it can last, will guide Microsoft's growth after that.

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DISCLAIMER