

Microsoft's Evolution in Digital Era: A Financial Analysis and Porter's Model

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Abstract. The world in 2023 is unlike the one in 2019. As the supply chain is expended due to the highest inflation since 1984, and the Russo-Ukrainian conflict is prolonged, the software market is seeing increased rivalry and concerns about the impact of digital transformation. The purpose of this case study is to evaluate the recent performance, identify potential risks, and discuss strategic adjustments that Microsoft may take. By examining key financial metrics from 2019 to 2023, and using common-size analysis, this study analysed the profitability, liquidity, and overall health of Microsoft's financial structure. Through Porter's five force model, this study helps understand the company's competitive force and growth potential. Moreover, this study summarizes and highlights concerns and vulnerabilities within Microsoft. This is essential for developing long-term strategies for both investors and managers. It was discovered that Microsoft has shown weaker performance since 2019, yet it has managed to maintain its dominant position in the software industry by emphasizing cloud-based solutions and artificial intelligence.

Keywords: Common size analysis, Azure, Porter's five forces, liquidity ratio, return on equity.

1. Introduction

One of the global edging technology firms, Microsoft, launched by Bill Gates and Paul Allen, has a mission to "empower every person and every organization" [1]. Its platforms and software help drive productivity, competitiveness, and working efficiency in various businesses and the public sector. Microsoft generates revenue from online advertisements, along with licensing, development, and support for software, cloud-based solutions and services [1, 2]. Its popular products involve Windows operating systems; OfficeSuite, the productivity software for multi-platforms; business-specific networking service; video game console systems, and so on [1].

In the digital age, Microsoft plays a vital role in facilitating the digital transformation of enterprises across industries. Rooted in satisfaction with clients, Microsoft's strategy is based on Azure, a worldwide computing platform comprising over 60 data centre regions. This ensures quick access to the cloud service while obeying local data regulations [1, 2]. Microsoft is also an emerging leader in the AI-based platform. Through Azure OpenAI Service, this company assists subscribers in deploying advanced GPT models as well as embedding model series, for tasks like enhancing writing, generating code, and data reasoning. From financial services to big data analysis, healthcare, and entertainment, digital technology has become a key drive to economic output [1]. Thus, a leading technology company has much more rights and power than some people can imagine.

Microsoft mainly operate in the market of information and technology (IT), which is characterised by the variable nature and sustained growth. In 2023, the foremost concern for this sector is the economic recession triggered by the COVID-19 pandemic. This recession intensifies competition within the industry and gives rise to several macroeconomic risks. Tech businesses and their value chains face difficulties, as earnings decrease, inflation rises, interest rates increase, and exchange rates fluctuate [3]. The energy crisis, driven by the Russo-Ukrainian War, contributes to inflation and ongoing instability in the energy market, further impacting supply chains of the tech industry [3]. Cybersecurity is another mounting concern, with a 38% increase in cyberattacks in 2022 [1,3]. The pandemic and military combats have directed a period of persistent and large-scale cyberattacks. Cloud adoption has made cloud-service providers attractive targets, potentially compromising sensitive customer data [4].

To address these challenges effectively, Microsoft needs to innovate and broaden its portfolio to better serve people and organizations. For the company itself, enhancing adaptability is crucial to overcome economic recession and emerge even stronger [1]. This requires an in-depth understanding of drivers of profitability and industry trends. Financial analysis and industry analysis provide a scheme to evaluate these features. This essay analyses Microsoft's financial performance using financial metrics like liquidity ratios and return on equity. It employs Porter's Five Forces model to assess the competitive profile in the tech sector, offering insights into Microsoft's strategic positioning. Despite increased rivalry and cybercrimes, Microsoft may maximally reduce the impacts by technological investment in machine learning, AI-related solutions, and exploring strategic partnerships [4, 5]. This approach ensures Microsoft remains a global technology leader, adapting and thriving in the dynamic digital era.

2. History of Microsoft

This part describes Microsoft's evolutionary journey from its early days marked by its partnership with IBM, to its current dominance in cloud computing and artificial intelligence (AI).

2.1. Born and Early Growth

In April 1975, Microsoft was founded to develop a programming product for the Altair 8800, a milestone of microcomputers. In 1985, Windows 1.0 was released with a unique user interface, which replaced manual typing in computer languages with graphical buttons [6]. This is a breakthrough in terms of interaction style with menus and windows, it provides the basics of modern operating systems. Soon in later 1980s, Microsoft became the largest information and software company.

2.2. Evolution

By 1986, Microsoft went public, with an initial offering price of \$21 per share, quickly soaring to \$35.50 by day's end. Over the decade that followed, Microsoft's stock price increased more than a hundred-fold. In 1990, Microsoft introduced Windows 3.0, selling over 60 million copies, and establishing itself as the dominant force in PC software. This achievement made Microsoft the first software company to surpass \$1 billion in revenue [7]. Subsequent Windows versions further solidified Microsoft's dominance in the PC market. In 2008, Microsoft entered cloud computing with the Azure Cloud platform, operating from the company's data centres. In 2023, Microsoft Windows still held an outstanding market share at around 70 percent [8].

Since 2013, the revenue of Windows licensing declined, leading to a shift towards cloud and database services. Azure thrived under CEO Satya Nadella's leadership, while based on Azure platform, Office suite transitioned to the cloud with the launch of Office 365, enabling remote work and virtual collaboration [1]. In 2023, Microsoft extended its partnership with OpenAI, introducing new-generation AI to various services like Bing, Edge, and Microsoft 365 Copilot [1]. Copilot, an AI-powered coding assistant integrated with Microsoft 365, unlocks consumer productivity by embracing many technological advances in the digital world.

2.3. Development Status

In recent years, Windows has been under higher competitive pressure, especially from Linux and MacOS. MacOS has become increasingly popular among creative art professionals with design needs, and it holds a significant market share in certain industries (like music and graphic design) [9]. While for Linux, though it is still a minority operating system in terms of overall market share, gains favour from tech developers attributed to its open-source feature and flexibility.

However, Microsoft remains a major player, partly due to its strong brand reputation and a wide range of Windows-compatible software. Microsoft also strives to retain a leading position in the dynamic tech field by adopting cloud computing, expanding Office to web versions, and investing in AI and other emerging technologies [1, 5].

If Microsoft can continue to maintain its strong ability to manage changes in the environment, there are still positive prospects for vigorous development in the coming years.

3. Financial Analysis

3.1. Common Size Balance Sheet

Between 2020 and 2022, Microsoft's financial performance exhibited several noteworthy trends. The current assets saw a notable 8.74% decline, with a significant drop between 2021 and 2022. Short-term investment decreased from 40.81% to 24.89% as a percentage of total current assets (Table 1). This reduction is potentially influenced by the COVID-19 pandemic, which weakened the overall economy and increased competition in the technology sector [10]. Such conditions likely impacted Microsoft's strategic allocation of resources, resulting in a shift away from short-term investments.

Conversely, total assets demonstrated significant growth, rising approximately 10.8% between 2020 and 2021, and 9.3% between 2021 and 2022 (Table 1). Additionally, with a growing portion of long-term assets, this can be a sign of capital investment into purchasing equipment and property driving long-run earnings.

Regarding liabilities, the change in liability categories showed responsible debt management. The current liabilities fluctuated but generally increased since 2020, while total liability and long-term debt gradually decreased. The long-term debt notably decreased from 19.77% to 12.89% (Table 2), representing a cash outflow, paying back what Microsoft owed to suppliers, especially for long-term payables. The rise in fixed assets and decrease in long-term debt could be beneficial for Microsoft, meaning it has a lower risk of solvency and the ability to cover long-term liability terms [9, 10].

The liquidity of a firm can be evaluated by working capital, which is the difference between current liabilities and current assets [9]. Due to a decrease in total current assets between 2020 and 2022, Microsoft's working capital experienced a significant decline of approximately 31.9%, indicating a reduced cash flow, and delays in paying back the short-term debt during this period (Table 3). This likely raises a concern about its profitability and the collection time for receivables [9].

Table 1. Current assets and total assets of Microsoft from 2020 to 2022 (in millions).

June 30,	2022		2021		2020	
Cash and cash equivalents	13,931	3.82%	14,224	4.26%	13,576	4.51%
Short-term investments	90,826	24.89%	116,110	34.79%	122,951	40.81%
Accounts receivables	44,261	12.13%	38,043	11.40%	32,011	10.62%
Total current assets	169,684	46.51%	184,406	55.25%	181,915	60.37%
Total assets	364,840	100.00%	333,779	100.00%	301,311	100.00%

Table 2. Current liabilities and total liabilities for Microsoft between 2022 and 2020 (in millions).

Year	2022		2021		2020	
Accounts payables	19,000	5.21%	15,163	4.54%	12,530	4.16%
Total current liabilities	95,082	26.06%	88,657	26.56%	72,310	24.00%
Long-term debt	47,032	12.89%	50,074	15.00%	59,578	19.77%
Total liabilities	198,298	54.35%	191,791	57.46%	183,007	60.74%

Table 3. Change in working capital from 2020 to 2022 (in millions).

Year	2022	2021	2020
Total current assets	169,684	184,406	181,915
Total current liabilities	95,082	88,657	72,310
Working Capital	74602	95749	109605

3.2. Common Size Income Statement

Compared to past years, Microsoft revenue increased, but the revenue of Windows OEM rarely grew [11]. Product revenue included sales from Windows licenses, productivity tools, hardware, and so on. This had a decreased portion of revenue over the years from 47.58% to 36.68% (Table 4). In contrast, service and other revenue occupied a higher amount of revenue. This segment included revenue recognised from Cloud services (such as Azure, Office 365, and Xbox) and sales from internet marketing and LinkedIn [11,12].

The net income showed significant growth, with respective growth rates of 19% and 38% during 3 years (Table 4). Meanwhile, cost of sales had a steady rise, especially in cloud engineering and commercial sales and LinkedIn, which was reasonable as the company focused on these sectors in this period [1,12]. However, rates of sales growth and net income growth over past years decreased, indicating Microsoft experienced a weaker performance which required adjustment in strategy, such as providing more customizable services of application software, to fit in more platforms and operating systems.

In Microsoft's fourth-quarter report, the company reported impressive financial figures, with revenue reaching \$56.2 billion, marking an 8% increase, and net income totalling \$24.3 billion, showing a remarkable 20% increase. Notably, Microsoft Azure emerged as a dominant force, accounting for over 50% of the revenue generated in the cloud segment during the 2023 fiscal year [12]. Furthermore, the Azure OpenAI service experienced substantial growth in the fourth quarter, with nearly 100 new customers, including notable names like Volvo Group, Mercedes Benz, and Shell, joining daily. Additionally, KPMG demonstrated its commitment to Microsoft by pledging to invest billions of dollars in the procurement of Microsoft's Cloud and AI services [13]. These results underscore Microsoft's growing influence in the cloud and AI sectors.

Table 4. Total revenue, net income, and cost of revenue for Microsoft from 2020 to 2022 (in millions).

Year	2022		2021		2020	
Product	72,732	36.68%	71,074	42.28%	68,041	47.58%
Service and other	125,538	63.32%	97,014	57.72%	74,974	52.42%
Total revenue	198,270	100.00%	168,088	100.00%	143,015	100.00%
Product	19,064	9.62%	18,219	10.84%	16,017	11.20%
Service and other	43,586	21.98%	34,013	20.24%	30,061	21.02%
Total cost of revenue	62,650	31.60%	52,232	31.07%	46,078	32.22%
Operating income	83,383	42.06%	69,916	41.59%	52,959	37.03%
Net income	72,738	36.69%	61,271	36.45%	44,281	30.96%

Microsoft has generally exhibited a positive trend in both income and assets, without any significant concerns regarding cash flow and liabilities [1, 2]. However, this company is always contending with fierce competition from various software products, platforms and devices. For instance, there is intense rivalry in the markets for Windows, Xbox, and other online services, with strong competition coming from industry giants like Apple and Google [1, 14]. Notably, Apple and Google have experienced rapid revenue growth in recent years (Figure 1). For Apple in fiscal year 2022, it gained 394.33 billion (B) of revenue compared to 198.27 B for Microsoft. Meantime, Google gained about 256B (2021) and 280B (2022) revenue, which was also highly exceed the revenue generated by Microsoft.

Thus, to maintain its competitive edge in this challenging industry, Microsoft must prioritize continuous innovation in technology and make improvements to its customer services [14]. These methods are essential for the company to effectively compete and thrive in the market.

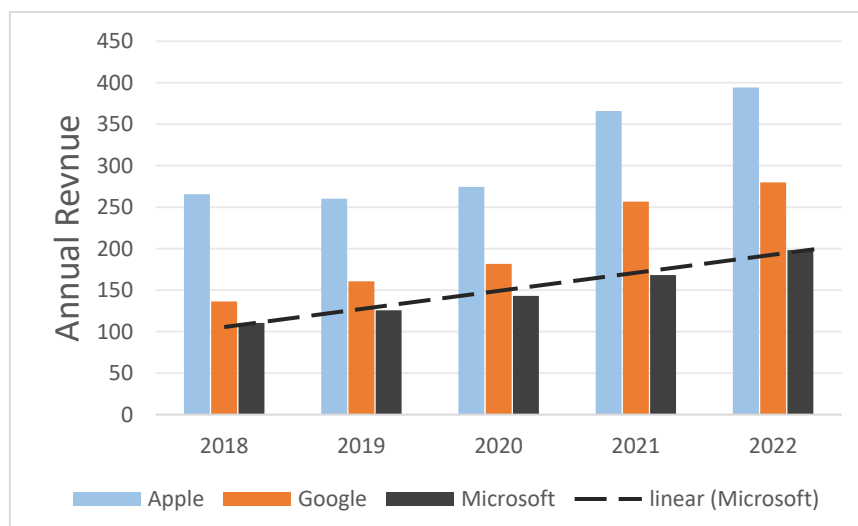


Figure 1. Revenue of Apple, Google and Microsoft between 2018 and 2022 (in billions) [15].

3.3. Ratio Analysis

3.3.1. Return on equity ratio (ROE)

ROE is numerical representation of a corporation's profitability using net assets. It is defined by the multiplication of three parameters: profit margin, assets turnover, and capital structure leverage. The ROE value has a positive correlation with a company's ability to convert shareholders' capital into net incomes. In the tech sector, a normal technology with moderate size may have ROE values of 18% or more, while for Microsoft, ROE exceeds this average value since 2018 [16].

Microsoft's return on average equity has exhibited stability from 2018 to 2021, showing minimal volatility within a range of 0.40 to 0.46 [16]. However, there was a decrease from 47% in 2022 to 39% in 2023, indicating lower leverage and asset turnover ratio (Table 5). This decrease can be attributed to Microsoft's prudent measures taken to mitigate risks during the period when researching new products, such as the intelligent cloud. Additionally, the resurgence of competitors in the technology industry following the pandemic may have contributed to reduced profits for Microsoft during this period [10]. These factors together help to explain the observed decline in 2022.

Table 5. ROE for Microsoft fiscal year 2021 to 2023.

Standard ROE Decomposition	2023	2022	2021
Profit Margin	3.18	3.33	3.05
Assets Turnover Ratio	5.52%	5.98%	6.03%
Capital Structure Leverage	2.21	2.37	2.56
ROE	38.82%	47.15%	47.08%

3.3.2. Liquidity ratios

The current ratio and quick ratio are two metrics considered in this context, which measure the short-term financial risk of a company and its ability to manage cash flows. The current ratio works similarly to working capital. The quick ratio equals to current assets (exclude closed inventories) dividend by short-term liabilities. Given the structure of these ratios, a value above 1.0 is sought after. A current ratio of 2.0 is optimal for a company to meet all its short-term obligations with few concerns about the cash shortage. For a quick ratio, 1.0 is sufficient to eliminate current liabilities within a fiscal year. A higher value may suggest a higher cost for stocking.

In the case of Microsoft, there has been a decrease in both liquidity ratios annually. The current ratio has dropped from 2.53 to below 2.0 (Table 6), indicating a potential concern related to net incomes and account receivables. When the current ratio falls below 2.0, it suggests that the company may have fewer liquid assets to meet its annual obligations. Similarly, the quick ratio decreased from 2.4 to 1.5 from 2019 to 2023 (Table 6). While this still indicates Microsoft maintains a sufficient level

to pay off short-term debts, it does represent a riskier financial position compared to previous years. The decrease in the quick ratio implies that Microsoft may have a weaker ability to cover immediate financial obligations.

Table 6. Current ratios and quick ratios for Microsoft and the current ratio in the industry (from 2019 June 30th to 2023 June 30th).

Fiscal year/ Liquidity ratios	2023	2022	2021	2020	2019
Current Ratio	1.77	1.78	2.08	2.52	2.53
Quick Ratio	1.5	1.6	1.9	2.3	2.4
Current Ratio (IT industry)	-	1.44	1.64	1.85	1.77

It is worth noting that the average quick ratio in the information technology sector for the fiscal year 2023 is 2.0, with a standard deviation of 2.0. Microsoft's quick ratio ranks in the 57.4% percentile within the sector [17]. This means that while Microsoft's quick ratio has decreased, it is still better than many other companies in the same sector. However, the decrease in liquidity ratios suggests this company should improve sales and inventory turnover to yield more cash.

4. Porter's Five Forces

This model is practiced to facilitate the understanding of a company's competitive power in its operating industry [9]. It aids investors and analysts in evaluating the company's product and service performance relative to its competitors, offering insights into overall industry dynamics.

4.1. Threat of New Entrants

The profit potential of new entrants is low, mainly due to the high switching cost of buyers and the economic scale of Microsoft. For individuals, switching cost is relatively low, some numbers of alternative products are available on the market, which may have a better performance-price ratio. In contrast, the switching cost is high for large enterprises, and few alternatives offer similar functions with Microsoft products at lower or the same prices. In addition, Microsoft always has market dominance with Office and Windows systems. In past decades, Microsoft has had very large operating scale in worldwide and it has a prominent good reputation and network effect against new companies [1, 2]. People are likely to work together on Microsoft Office to ensure smooth synchronization, thanks to the document sharing and collaboration features. Microsoft also invests a lot in data security, newly emerging technologies, and better user experience [14]. The large user population coupled with significant economic scale, acts as a formidable barrier to new entrants.

4.2. Competitive Rivalry

There is a notable concentration of competitors in the tech market, firms that operate at large scale are Apple, Google, Sony, amazon, and so on, they all have significant loyal customer populations and a good reputation for their products [14]. Meanwhile, these competitors provide a wide range of services with unique features. For instance, Apple's IOS system is renowned for its synchronization, functioning flawlessly within the Apple ecosystem across all Apple devices, thereby attracting a significant number of loyal customers. Also, Consumers are now more empowered and informed, resulting in high price sensitivity and greater demand for more personalized pricing, releasing pressure on Microsoft to develop a more flexible pricing strategy to fit in this digital age.

4.3. Bargaining Power of Costumers

High switching cost and low substitute availability limit the bargaining power of customers to a low level, but alternatives to Microsoft's services compete on the prices. Though individuals may not have many concerns about shifting to other products and trying novel technology, for upper-end customers like large corporations, and government bodies, Microsoft's name gives it a competitive advantage [14]. Customers face difficulties in accessing effective solutions that are not related to

computers and online networks, but alternatives in the software market cannot be ignored. Cheaper or even free alternatives like Google Workspace, LibreOffice, and Dropbox Cloud provide viable options to Microsoft 365 and OneDrive. These are readily available on the market, and they have the potential to attract customers with competitive pricing and improved document sharing speeds.

4.4. Bargaining Power of Suppliers

This force varies but leans towards moderate. Generally, the size and population of suppliers remain moderate, yet a few qualified suppliers provide essential components of hardware devices. Principle hardware components are mainly obtained from a monopoly supplier (Intel) [9]. If these suppliers encounter availability limitations or fail to deliver satisfied products, Microsoft has few options of alternative sources. Consequently, a select group of suppliers has a significant influence on Microsoft's business, particularly for larger enterprises due to their important inputs.

4.5. Threat of Substitutes

Substitutes of Windows, Office, and other software of Microsoft always exist. For instance, when Apple's hardware devices offering iCloud with seamless integration in Mac systems, the income from OneDrive will be negatively affected [9]. In case of competition from other technological companies, Microsoft invests in reducing the closeness of their products, focusing on providing several versions of business solutions. Besides, it improves its software to suit a majority of platforms in the market [14]. Additionally, non-online products or manual-mechanical processes have few competitive advantages over the computer network and cloud services of Microsoft. While the digital transformation is an inevitable tendency that benefit both social networking and work productivity, the threat of substitution is a minor issue for Microsoft.

5. Discussions

The ratios and financial metrics reflect various challenges and risks that Microsoft may face in its business operations and financial performance. Firstly, this company is facing increased competitive pressure in its core market of software and operating systems, with competitors like Google, Apple, and Amazon [14]. The investment in cloud and data security can largely increase operating costs, which could impact its net income, but the security and privacy of users' data need to be prioritized by Microsoft. Finally, the decrease in current assets, liquidity ratios, and ROE under the background of economic recession, indicates a lower profitability, and a risk in Microsoft's financial structure.

To meet the growing demands of enterprise clients, Microsoft has decided to increase its funding in data centres, CPU and GPU, and network devices to support generative AI and secure cloud platform [1]. As part of this strategy, Microsoft predicts that the cost growth rate for 2024 will exceed that of 2023, with a highlight of capital expenditure growth [1, 12]. The ongoing rise in capital expenses leads to higher investment risk, which may result in unsatisfactory returns. In this case, Microsoft may need to raise product prices, or otherwise, accept lower net profits. On the other hand, some real-world case studies in IT firms suggest that a 30 percent gross return on tech investment is expected when risk is high [18]. Furthermore, increasing capital spending is significantly linked to greater stock market value, resulting in enhanced sales performance, particularly in sectors characterized by a strong knowledge base, such as IT [18, 19].

Regarding the critical issue of cybersecurity, Microsoft recognizes the need to deliver more effective solutions that cover private encryption, compliance, key management, and access control system across its cloud and platform offerings [1, 4]. With the help of real-time machine learning, Microsoft Defender 365 portal can combat Java malware threats, and block evolving malware variants [5]. This commitment is essential not only for protecting the company's reputation and liability to customers but also for maintaining its position within the industry. While the focus on data security may lead to higher operating costs, it is a necessary step to gain a competitive advantage [4].

Since Microsoft has strategically prioritized cloud services since 2014, the company has made significant progress through its partnership with OpenAI. This collaboration has allowed Microsoft to leverage its cloud computing capabilities alongside advanced AI models, thereby driving its digital and intelligent transformation for products like Office 365 and Dynamics [1]. As a result, Microsoft is likely to continue this cloud-focused strategy to accelerate its AI transformation, fuel business growth, and enhance profitability. However, it is worth noting that an increased attention on Cloud does present execution risks, given the significant investments involved [12]. Nonetheless, these investments also offer advantages, such as reducing energy consumption through AI services and data centres [1]. This is particularly relevant to large companies like Microsoft which must address rising energy costs and work towards greater sustainability.

6. Conclusion

In conclusion, Microsoft has significant progress and strategic evolution since 1975, starting with the Windows operating system and becoming world-leading in intelligent cloud and productivity application software. It has successfully transitioned to adapt to the digital era in the past decade. However, Microsoft faces challenges in a dynamic economic environment, including recession, geopolitical conflicts, and cybersecurity threats.

Analysis of Microsoft's financial statement revealed its performance in recent years. Revenue and net income increased directed by growth in Azure and Office 365, offset in part by decline in Windows licensing and devices. The health of its financial structure was positively impacted by the rise in fixed assets and operating profits, and a decline in long-term liability, which may result in higher valuation and potential cash earnings. But liquidity ratio and ROE indicate this company has decreased liquidity and profitability which requires careful management. The increase in short-term debt and cost of revenue which is driven by growth in Microsoft Cloud may be a new concern. In Porter's five forces analysis, Microsoft's leading position in the market is reinforced by large barriers to new entrants and limited threats of substitution. Nevertheless, it faces intense competition from tech giants like Apple and Google, which have had rapid revenue growth recently.

Microsoft should address challenges related to industry competition, data security, and revenue decline in the 'more personal computing' segment. Some strategies include investment in data protection, focus on cloud-based services and innovation in AI-driven applications can be beneficial for it to attract and retain customers. While risks persist in the tech sector, Microsoft's outstanding reputation, resources, and commitment to innovation position it to well meet these obligations. Its ability to adapt and evolve will be essential to maintain predominance in the dynamic market.

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