NOTRE DAME INVESTMENT CLUB – 02/06/2024

Microsoft Corp. (NASDAQ: MSFT)

Andy Swartout, Blair Kedwell, & Owen Portelli

The World's Most Valuable Company

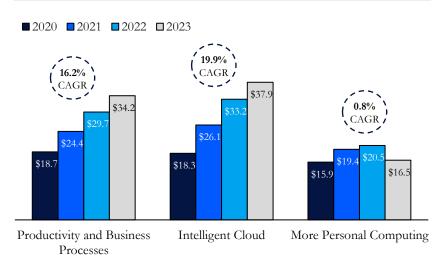


MSFT stands tall with a valuation over \$3 trillion USD, a mark earned by years of operational excellence and continued innovation

Driving Growth Across Diverse Segments

Productivity and Business Processes **SharePoint** 33% Office 365 revenue grew 18% with seat growth of 10% LinkedIn revenue increased \$285mm (22%) **Intelligent Cloud** 43% Azure and cloud services revenue grew by 29% Minimal operating expenses, coming in at 2% despite growth More Personal Computing Microsoft 24% Consistent single digit growth figures

Segment Operating Income (in \$B)



Experienced Management Team



Satya Nadella

Chairman & CEO

- Joined MSFT in 1992 and named CEO in 2014
- Led the transformation to the cloud infrastructure and services business, which outperformed the market and took share from competition



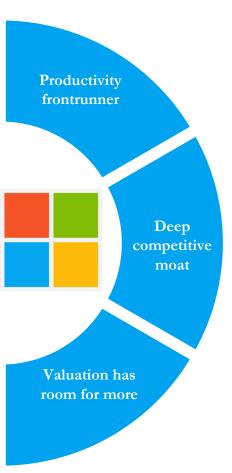
Judson Althoff

Executive VP & CCO

- Joined in 2013 as president of MSFT North America
- MSFT has seen uninterrupted commercial cloud revenue under his leadership



Premier Position Creates Unique BUY Opportunity



Frontrunner in the AI Revolution

MSFT's cloud transition to AI integration mimics prior successful business model shifts, MSFT to continue as productivity revolution frontrunner as a result of consistent investments in AI and M365 Copilot; boosting cash flows in the long term

Deep competitive moat

MSFT holds a deep competitive moat from high switching costs, ensuring a continued place at the forefront of the productivity revolution. Their deep product suite coupled with their fortress balance sheet limits downside risk and provides a strong security to investors

Valuation is warranted with room for considerable upside

MSFT has a strong history of capital efficiency that justifies its current market valuation; we are confident that continued investments in their product suite coupled with strong management direction will drive upside through our forecasting period; investor hesitation remains on grounds of AI concerns despite ATH position

<u>Price Target</u> **\$509.38**

25.6% upside to current **\$405.65**



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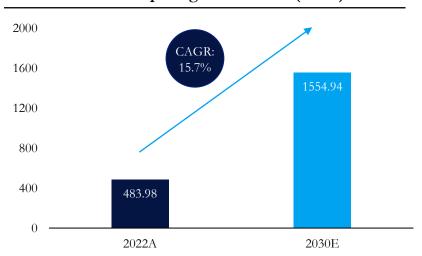
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What is Currently Happening?

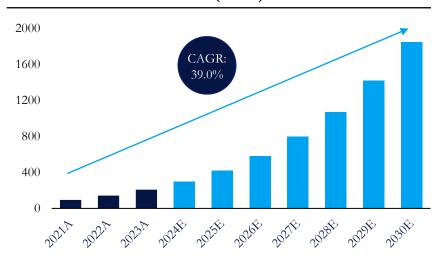


MSFT is currently the top player in a rapidly growing market, making AI integration a key towards incredible upside potential

Global Cloud Computing Market Size (in \$B)

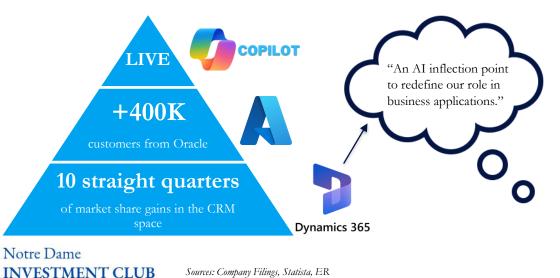


Worldwide AI Market Size (in \$B)



66

How Does MSFT Capitalize?



We see a majority of respondents reporting AIrelated revenue increases within each business function using AI. And looking ahead, more than two-thirds expect their organizations to increase their AI investment over the next three years.

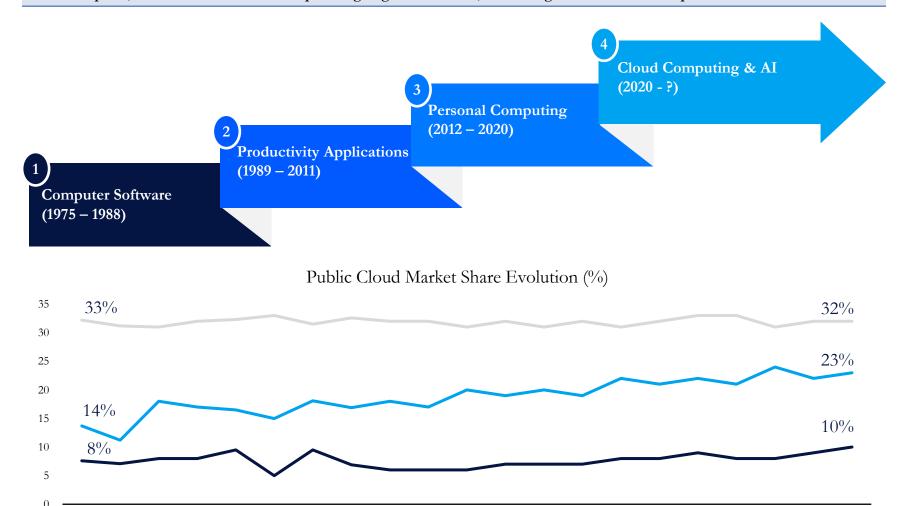
McKinsey

"

Evolution of MSFT's Business Model



Since inception, MSFT has been able to adapt to ongoing market forces, warranting another effective response in the current transition



Q2 '20

Microsoft Azure

Q2 '21

Q4 '20

Google Cloud

Q4 '21

Q2 '22

Q4 '17

Q2 '18

Q4 '22

Q2 '19

Q4 '19

Amazon AWS

Q4 '18

Azure vs. AWS



Despite a delayed entrance in the cloud computing space, Azure has aggressively competed with AWS despite industry headwinds



29% growth

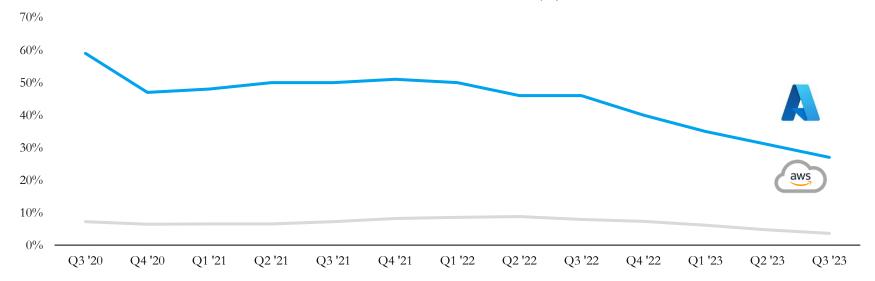


12% growth
3Q23
(Also less than Google Cloud's 22%)

- Got into the cloud computing space late but is growing the fastest
- 3% of Azure's growth was tied to AI
- "...Azure could become a bigger and more important hyperscale provider than AWS." Bernstein Research analysts

- Still leads the pack in terms of overall market share
- Behind MSFT in releasing a tool for deploying generative AI
- AMZ's Bedrock service became available in September, while the Azure OpenAI service opened to the public in January

YoY Growth Azure vs. AWS (%)



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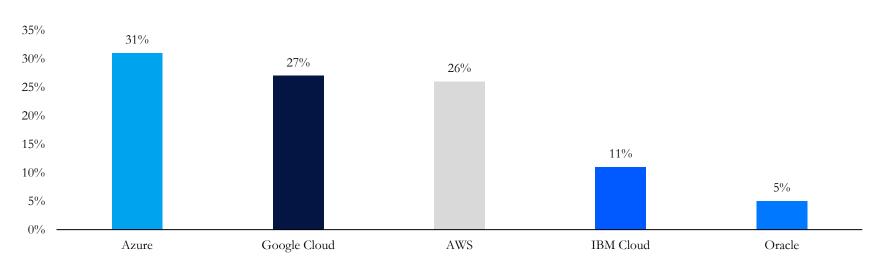
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Consumer Perspective

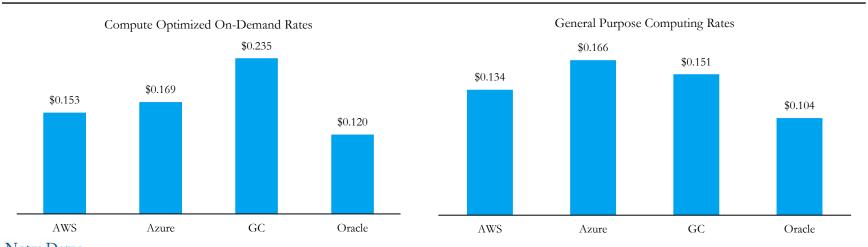


Consumers prefer Azure against GC/AWS due to its strong value proposition and cost saving ability

Which Public Cloud Provider do IT Professionals View as the Best Value for Money?



Cost Structure



The Azure Difference



Azure's key value proposition rests in its ability to be added to existing operating systems (365) and intense focus on data security

	Data management and analytics	Intuitive VM templates	Integration with primary operational ecosystem	Emphasis on data security and regulatory compliance
A				
2			X	X
aws				



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Deep Moat from High Switching Costs



Microsoft's market share dominance coupled with their competitive advantage and high switching costs yields a strong customer base

Market Share Dominance + Competitive Advantage + High Switching Costs



Market Share Dominance:

- 95% of Fortune 500 companies use Azure
- 80% of Fortune 500 companies use Microsoft 365
- Office owns nearly half of the office productivity software market
- Windows occupies 28.79% of the operating system market share worldwide

Competitive Advantage:

- Most product offerings with more advanced settings and options catering to corporations
- Loyal consumer base from flagship products
- Leading enterprise relationships

High Switching Cost:

- Not only would have to buy new software but would have to retrain workforce to work with new technology
- For some applications, like Excel and PowerPoint, this could take a very long time and ultimately you would be switching to a worse off product



= Strong Customer Base for New AI Offerings

Xbox Growth From Activision Acquisition



Successfully through regulation, the Activision acquisition allows for further market expansion and enhanced customer experience

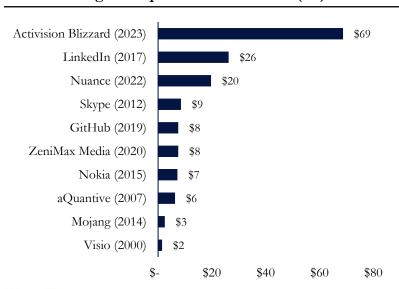
Activision Blizzard King

- Acquisition results in Microsoft becoming the third-largest gaming company by revenue
- Activision holds a portfolio of iconic video games adding to Xbox Game Pass offerings

DIABLO
CALLO
CALLO
WARCRAFT



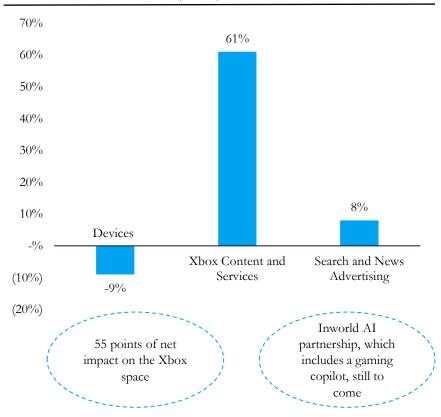
MSFT's Largest Acquisitions of All Time (\$B)



Investment Rationale

- Struggling personal computing sector was in need of a boost
- Deal bolsters MSFT's streaming offering: Xbox Game Pass
- More content/titles to offer increase gaming revenue opportunities
- Initiatives with GenAI have the potential for MSFT to be a more dominant force across the gaming spectrum

Initial Revenue Growth (2Q24)



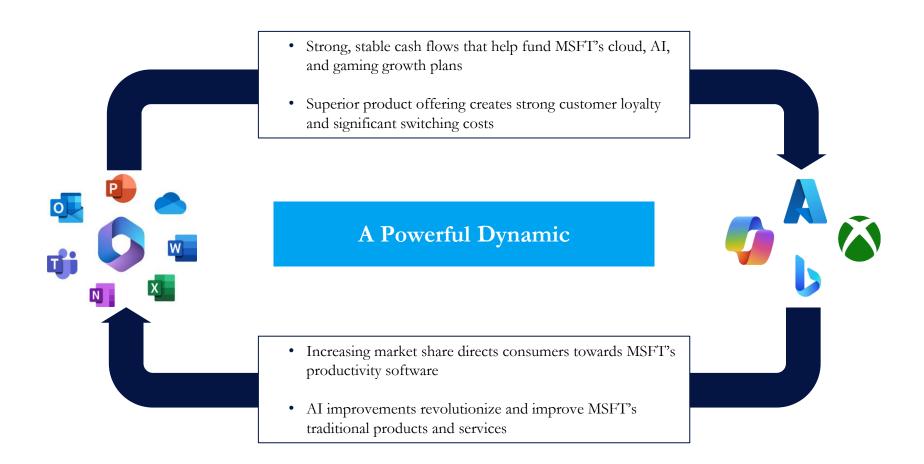
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Using the Past to Attack the Future



Consistent revenues fuel growth in core segments as the wheel of expansion continues to turn for MSFT





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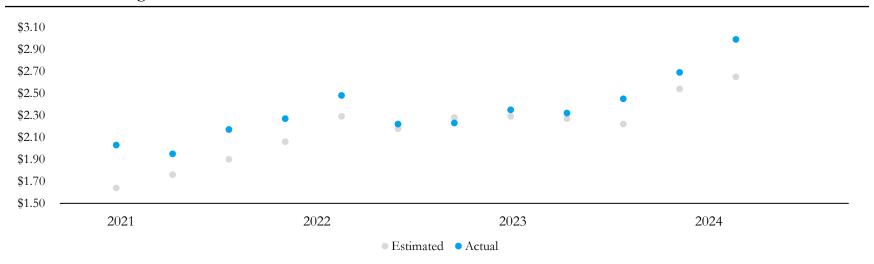
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Strong Performance Measures

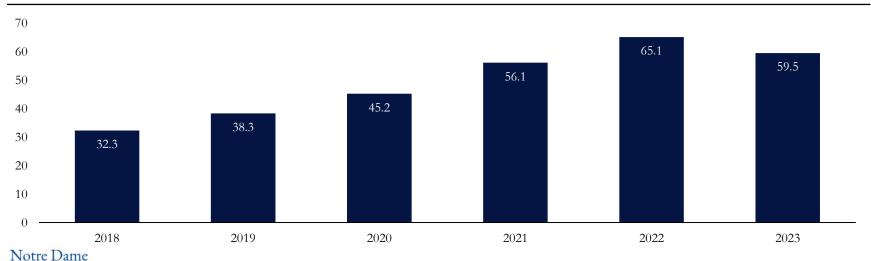


MSFT has consistently beat or come in line with earnings and generated strong cash flows for shareholders and reinvestment

Consistent Earnings Beats



Strong Cash Flow Generation (\$B)



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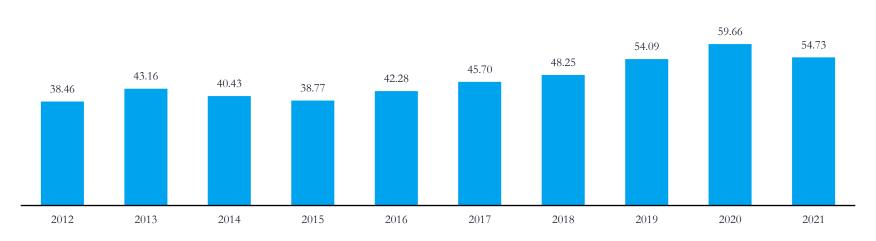
Reliable Business Segments



Windows & computer hardlines segments provide consistent revenue security and cushion to impediments in productivity suite growth

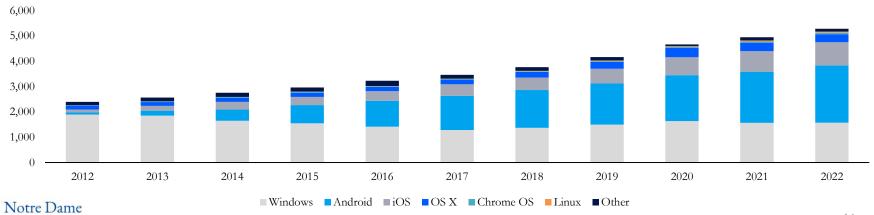
Computer Software Segment

Personal Computers Revenues (\$B)



Windows: Here To Stay

Global Internet Users By Operating System

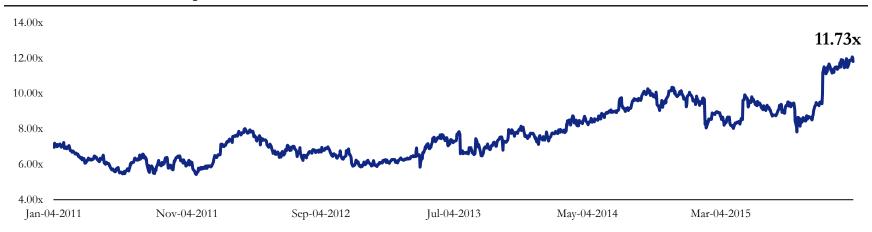


Multiple Through Transition

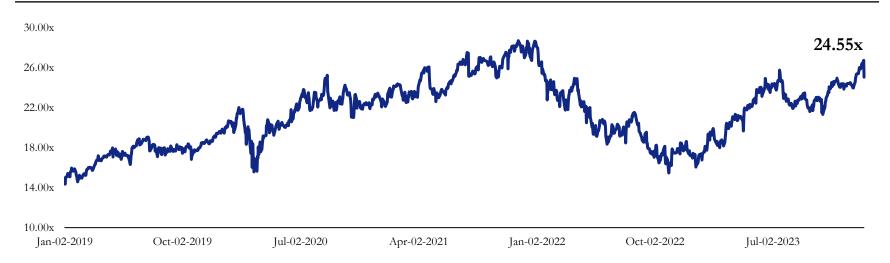


MSFT's transition from hardlines computers business to software services featured the same EBITDA multiple evolution as present

Initial EV/EBITDA Multiple Evolution



Current EV/EBITDA Multiple Evolution



Risks and Mitigants



Despite the risks associated with a "Buy" of MSFT, but we remain confident in our identified mitigants to defend our thesis

	Identified Risks	Mitigants
Market and Economic	Company is so highly covered, how is there anything to miss	Very difficult for research to concretely predict the proceeds of monetization of AI integration, so estimates lean conservative
Consumer/ Operational	Unclear adoption speed of AI integrated products	Businesses will do all in their power to prevent falling behind
Competition	Does not have strongest market share while selling services at a premium	Increasing market share faster than any other major industry player
Valuation	Currently at an all-time high	Strong growth figures are here to stay; consistent ROE justifies premium



Case Assumptions

Bear Case Base Case **Bull Case** Azure misses analyst targets for YoY growth Azure is able meet/beat growth expectations Azure AI/Productivity integration and of 29.37% and 26.81% in FY 24 and FY 25, at 29.37% and 26.81% for FY 24 and FY 25, adoption exceeds analyst estimates and is able respectively; MSFT core segments revenue to grow consistently at over 25% yearly respectively; MSFT is able to keep gross YoY growth drops below 13% (analyst floor) margins consistent at ~70% through to 2028 AWS and Azure remain public cloud leaders Azure wins in the cloud race through and competition continues, with Azure avoidance of growth convergence at ~15% growing at ~25% YoY into 2028 and AWS and is able to take market share from AWS growing at ~18% YoY into 2028 permanently Activision acquisition integrates smoothly and Consistency in gaming space and Activision acquisition is slow to be integrated as a result product bundling efforts are successful of heavy regulatory oversight without regulatory hurdles Seamless introduction of M365 Copilot with strong monetization capabilities to add on top of Azure accelerated adoption and continued usage of Windows OEM drives other services

revenues

Why This Opportunity Exists



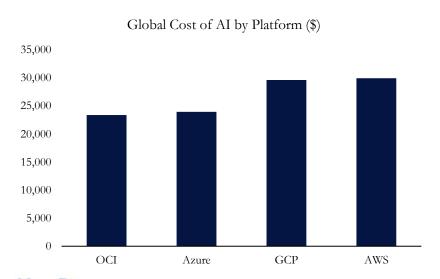
MSFT is well suited to take advantage of the rapid cloud transition through its built-out product portfolio and deep innovation moat

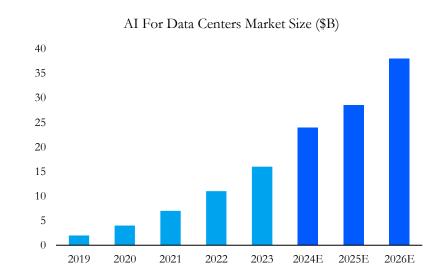
Market
Misunderstanding of
Cloud Transition

MSFT is in the process of going from an IT leader to an AI and cloud software leader. The current market does not understand the deep monetization capabilities for AI as it becomes more efficient than employees at completing menial tasks

Deep Innovation Moat Through their partnership with OpenAI, MSFT is able to ensure that it has exclusive rights to commercialize many of the worlds most advanced and recent large language models. While anyone can use the public domain GPT-3.5 technology, MSFT has a unique "home-field" advantage that the market does not grasp the size of

Misunderstanding of Speed of Cloud/AI Transition Azure has been able to accelerate adoption and revenue figures consistently, demonstrating willingness of businesses to do everything in their power to optimize their suite of services before getting left behind; AI and productivity revolution are in tandem picking up speed





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Base Case: Killer Upside



Equal weights between the Exit Multiple Method and the Gordon Growth Method yield an upside of 26.3%

Exit Multiple Method:

Terminal Value:						
2029 EBITDA	\$230,465.0					
Exit Multiple	21.0x					
Terminal Value	\$4,839,764.8					
Period	4.8					
PV of Terminal Value	\$3,467,761.1					

Value Distribution:						
PV of Period Cash Flows	\$498,251.8					
PV of Terminal Cash Flows	\$3,467,761.1					
Total	\$3,966,012.8					
Period Cash Flows	12.6%					
Terminal Cash Flows	87.4%					
Total	100.0%					

Implied Share Price:						
Enterprise Value	\$3,966,012.8					
(-) Total Debt	105,681.0					
(+) Cash	80,452.0					
Equity Value	\$3,940,783.8					
Shares Outstanding (mm)	742,900.0					
Share Price	\$530.46					
Upside/Downside	31.0%					

Gordon Growth Method:

Terminal Value:						
2029 FCF	\$157,588.4					
PGR	3.50%					
Terminal Value	\$4,402,592.7					
Period	4.8					
PV of Terminal Value	\$3,154,521.0					

Value Distribu	tion:
PV of Period Cash Flows	\$498,251.8
PV of Terminal Cash Flows	\$3,154,521.0
Total	\$3,652,772.8
Period Cash Flows	13.6%
Terminal Cash Flows	86.4%
Total	100.0%

Implied Share Price:						
Enterprise Value	\$3,652,772.8					
(-) Total Debt	105,681.0					
(+) Cash	80,452.0					
Equity Value	\$3,627,543.8					
Shares Outstanding (mm)	742,900.0					
Share Price	\$488.30					
Upside/Downside	20.6%					

DCF Valuation:	
Exit Multiple Method	\$530.46
Gordon Growth Method	\$488.30
Blended Share Price	\$509.38
Upside/Downside	25.6%

Commentary

)
1	Exit multiple remains conservative, a
4	healthy 10 turns below the comps set
- [mean, 3 turns below current

3.5% PGR justifiable when considering incomprehensible potential for AI

Outputs weighted 50/50 to arrive at \$509.38, representing 25.6% upside to current valuation

Heavy terminal cash flows represents conservative short term estimates and long term potential for MSFT

What You Need to Believe



It is essential to understand that MSFT has the unique combination of operational excellence and a favorable time to act

In a league of its own
In great hands

In the right place
...at the right time

- 1 Best-in-Class Products that Demand a Premium
 - MSFT's office productivity, cloud computing, and personal computing products and services have long been perceived as the premier offerings for the technology needs of both businesses and individuals alike
- A Poised and Confident Leadership Team
 - MSFT's management team has a proven track record of effectively implementing growth strategies, aggressively taking market share, and consistently driving returns
- A Desire to Capitalize on a Revolutionary Time Period
 - MSFT has the potential to lead the AI charge because of how well they have positioned themselves
- Opportunities for Long-Term Growth
 - · MSFT's business model falls right into the massive growth expectations for both the cloud computing and AI markets



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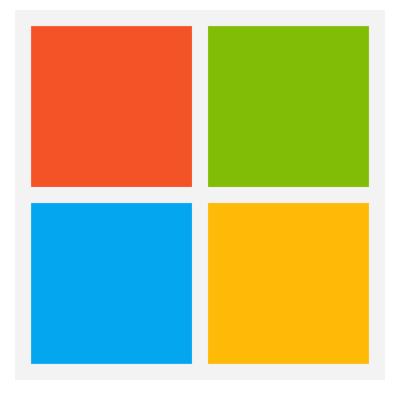
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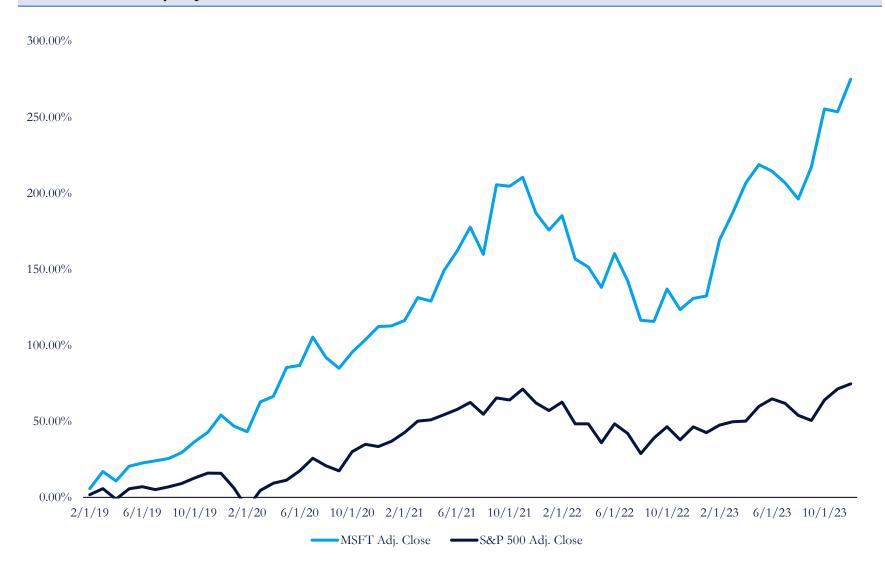


Appendix

5Y Stock Chart



MSFT has consistently outpaced the S&P 500 since 2019



How Microsoft Makes Money



From a pure-play computers business to now, MSFT has found unique and innovative ways to diversify its revenue streams

Core Products and Their Monetization



Microsoft 365

- Office consumer and office commercial
- Subscription and license model
- Advertising
- Revenue growth up 18%
- 23% of total revenue



Microsoft Dynamics 365

- Revenue driven by # of users and applications used
- Expansion of average revenue per user, and the continued shift to Dynamics 365



Azure

 Revenue is mainly affected by infrastructure-as-a-service and platform-as-a-service consumption-based services, and per user-based services



Windows

- Revenue generated through number of operating systems sold and pre-installed
- Affected by computing device market volume



Xbox

- Selling of devices
- Selling of games
- Game pass subscriptions



Devices

Selling of tablets and laptops



Bing

• Search Ads



LinkedIn

- Premium subscriptions
- Talent solutions
- Sales solutions
- Promoted search
- Advertising
- Revenue grew 8%

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Equity Research Perspective



Equity research provides information that works both for and against our recommendation

Investment Considerations (Bull)

- Public cloud is widely considered to be the future of enterprise computing, and Azure is a leading service in this environment
- Microsoft 365 continues to benefit from upselling into higher-priced stock-keeping units as customers are willing to pay up for better productivity and security
- MSFT has monopoly like positions in various areas (OS, Office) that serve as cash cows to help drive Azure growth
- MSFT's strong balance sheet minimizes downside risk

Investment Considerations (Neutral)

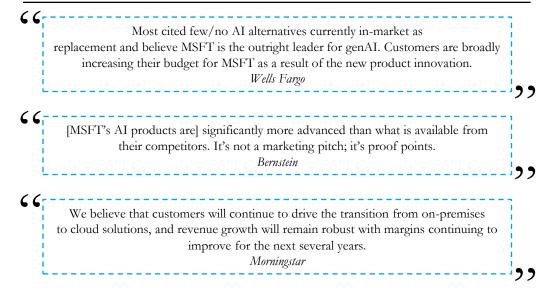
- Uncertain timeline for AI software, such as Copilot, adoption by customers
- MSFT is giving a substantial amount of focus to further developing their gaming business, particularly Xbox
- Currently trading near its historical average premium level

Investment Considerations (Bear)

- Momentum is slowing in the ongoing shift to subscriptions, particularly in Office, which is generally considered a mature product
- MSFT lacks a meaningful mobile presence
- MSFT is not the top player in its key sources of growth, notably Azure and Dynamics

Analyst Ratings		Stock Price Target		
China Renaissance	"Buy"	\$421.00	3.95%	
WELLS FARGO	"Buy"	\$425.00	4.93%	
BARCLAYS	"Buy"	\$421.00	3.95%	

Equity Research Commentary



ChatGPT: The Tip of the OpenAI Iceberg



ChatGPT is OpenAI's most well-known offering, but it is merely a shred of what OpenAI tech is capable of

How Does it Actually Work

OpenAI developers leave the software to make data point connections on the open network for GPT-3, amassing a total 175 billion parameters (variables that allow an input to prompt a response) from effectively every single publicly available source in human history

OpenAI interacts with users who give it prompts and it is able to give them answers/ask further questions in return. This then reinforces learning through human feedback

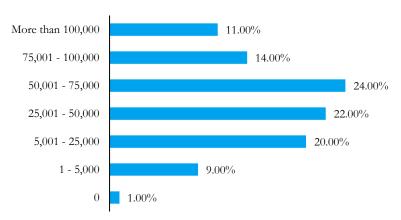
Through countless interactions GPT is then able to understand the rules of syntax and develop algorithms that represent and respond to those rules; this becomes a cycle of better results for users and subsequent better development of the model

GPT 3 175 Billion Parameters

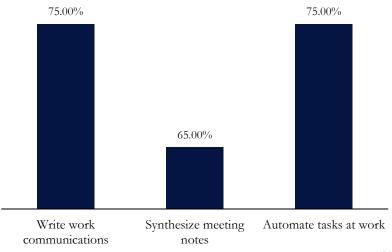
GPT 4 100 Trillion Parameters

By The Numbers

Companies Saving Money Using OpenAI



Intended Uses for AI in Developed Nations



OpenAI & Microsoft: World's Most Beneficial Situationship?



MSFT and OpenAI have a strong standing partnership that dates back to the early days of OpenAI

Partnership Overview



The goal of the partnership is to drive multibillion dollar AI breakthroughs using MSFT tech exclusively



The partnership
has allowed
MSFT to
integrate
OpenAI GPT
into Bing!
search engines
for optimal user
results



MSFT will enable OpenAI to develop "Supercomputing at Scale" as they seek continued growth and parameters on MSFT platforms



Partnership began with a \$1 bn investment from MSFT in 2019, the corporate VC initiative has since evolved to greater investment and partnership

Partnership Timeline

2016: OpenAI is founded after a conversation between the likes of Elon Musk and Sam Altman; it is founded as a non-profit research lab with lofty ideas

2022: MSFT strengthens their existing partnership with OpenAI via an additional \$10bn investment, with a signifigant portion of the funding dedicated towards

Azure and cloud services

2019: MSFT makes a \$1bn investment in OpenAI in efforts to support Azure AI technology in the long term

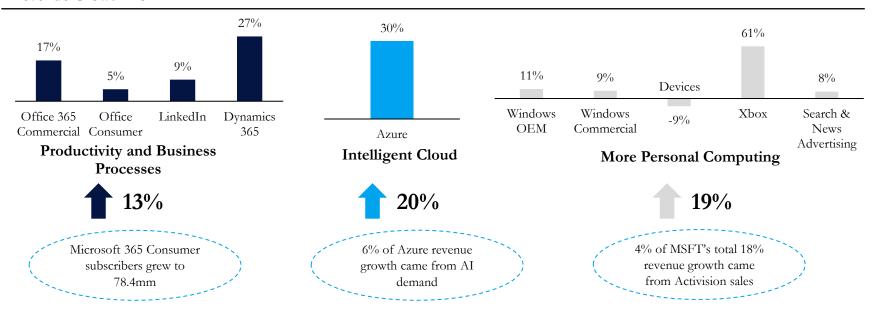
2023: After four days of drama, Sam Altman returns to OpenAI courtesy of MSFT, and the partnership is strengthened well into the future

1/30/23 Earnings Release (2Q24)

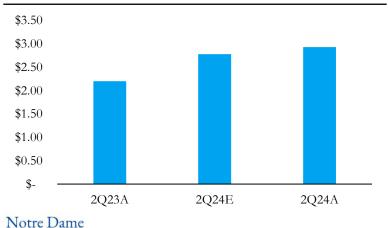


MSFT released 2Q24 Earnings on January 30, 2024

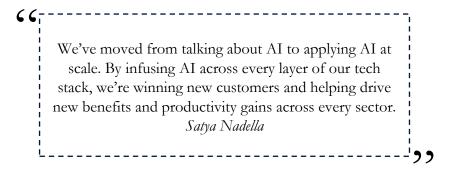
Revenue Growth YoY



EPS Growth & Beat



Expectation Becoming Reality



DCF Assumptions



Our revenue expectations display a considerable increase in services revenues with COGS following and margin profile consistency

Products Revenue	71,074.0	72,732.0	64,699.0	65,346.0	66,326.2	67,652.7	69,344.0	71,424.3	73,924.2
Serrvices Revenue	97,014.0	125,538.0	147,216.0	175,187.0	210,224.4	256,473.8	307,768.6	366,244.6	433,999.9
Total Revenue	\$168,088.0	\$198,270.0	\$211,915.0	\$240,533.0	\$276,550.6	\$324,126.5	\$377,112.6	\$437,669.0	\$507,924.1
% Growth		18.0%	6.9%	13.5%	15.0%	17.2%	16.3%	16.1%	16.1%

We are forecasting slow and consistent growth in the products revenue segment, which represents MSFT hardlines business operations like computers and Xbox; bulk of growth here driven by Activision acquisition integration. Services revenue will increase with considerably greater pace as Azure adoption continues and AI integration makes product suite more efficient; justifying headcount reductions for customers in lieu of purchasing the services for menial tasks

Products COGS	(18,219.0)	(19,064.0)	(17,804.0)	(16,990.0)	(17,112.2)	(17,319.1)	(17,613.4)	(17,998.9)	(18,481.0)
Services COGS	(34,013.0)	(43,586.0)	(48,059.0)	(59,563.6)	(71,896.8)	(88,227.0)	(106,487.9)	(127,453.1)	(151,900.0)
(-) Cost of Goods Sold	(\$52,232.0)	(\$62,650.0)	(\$65,863.0)	(\$76,553.6)	(\$89,008.9)	(\$105,546.1)	(\$124,101.3)	(\$145,452.1)	(\$170,381.0)
Gross Profit	\$115,856.0	\$135,620.0	\$146,052.0	\$163,979.5	\$187,541.7	\$218,580.4	\$253,011.3	\$292,216.9	\$337,543.1
% Margin	68.9%	68.4%	68.9%	68.2%	67.8%	67.4%	67.1%	66.8%	66.5%

We are forecasting COGS consistency to achieve establish MSFT margin profile through the stages of revenue increases, AI and cloud transition will demand considerable manpower/cost commitments. We are forecasting consistent gross profit increases that are explained effectively entirely by revenue increases

Research and Development General and Administrative Expenses	(20,716.0) (5,107.0)	(24,512.0) (5,900.0)	(27,195.0) (7,575.0)	(30,066.6) (6,889.8)	(34,568.8) (8,010.8)	(40,515.8) (9,499.1)	(47,139.1) (11,169.1)	(54,708.6) (13,090.7)	(63,490.5) (15,334.3)
Selling and Marketing Expenses (-) Total Operating Expenses	(20,117.0)	(21,825.0)	(22,759.0) (\$57,529.0)	(27,661.3) (\$64,617.7)	(31,803.3) (\$74,383.0)	(37,274.6) (\$87,289.5)	(43,368.0) (\$101,676.1)	(50,331.9)	(58,411.3) (\$137,236.1)
Operating Income (EBIT) % Margin	\$69,916.0 41.6%	\$83,383.0 42.1%	\$88,523.0 41.8%	\$99,361.7 41.3%	\$113,158.8 40.9%	\$131,290.9 40.5%	\$151,335.2 40.1%	\$174 ,0 85.7	\$200,307.0 39.4%

We are forecasting considerable increases in R&D as spending for cloud research and AI commitments keep up with forecasted revenue increases. Furthermore, we are assuming consistency with revenues for our SG&A line items, as there will be reasonable expenditures necessary to convince customers of the merit of cloud technology as a replacement for low level menial tasks and other related back office roles

Comps Output

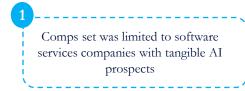


We selected a wide group of comparables in an effort to understand how the market is valuing companies leading the AI transition

Relative Valuation – 2	5th Percentile
2023A EBITDA	109,483.0
EV / EBITDA	20.7x
Enterprise Value	2,266,298.1
(–) Debt	(105,681.0)
(+) Cash	143,945.0
Total Equity Value	2,304,562.1
Shares Outstanding	7,429.0
Share Price	\$310.21
Upside / Downside	(23.2%)

Relative Valuation	– Median
2023A EBITDA	109,483.0
EV / EBITDA	26.4x
Enterprise Value	2,890,351.2
(–) Debt	(105,681.0)
(+) Cash	143,945.0
Total Equity Value	2,928,615.2
Shares Outstanding	7,429.0
Share Price	\$394.21
Upside / Downside	(2.4%)

Commentary	



Comps set came out wider due to higher volume as AI remains an undefined sector

Relative Valuation – Mean				
2023A EBITDA	109,483.0			
EV / EBITDA	30.9x			
Enterprise Value	3,387,890.6			
(–) Debt	(105,681.0)			
(+) Cash	143,945.0			
Total Equity Value	3,426,154.6			
Shares Outstanding	7,429.0			
Share Price	\$461.19			
Upside / Downside	14.2%			

Relative Valuation – 75	5th Percentile
2023A EBITDA	109,483.0
EV / EBITDA	38.1x
Enterprise Value	4,171,302.3
(–) Debt	(105,681.0)
(+) Cash	143,945.0
Total Equity Value	4,209,566.3
Shares Outstanding	7,429.0
Share Price	\$566.64
Upside / Downside	40.3%

MSFT trades in line with the comps set median, this indication has limited merit due to staggard AI race

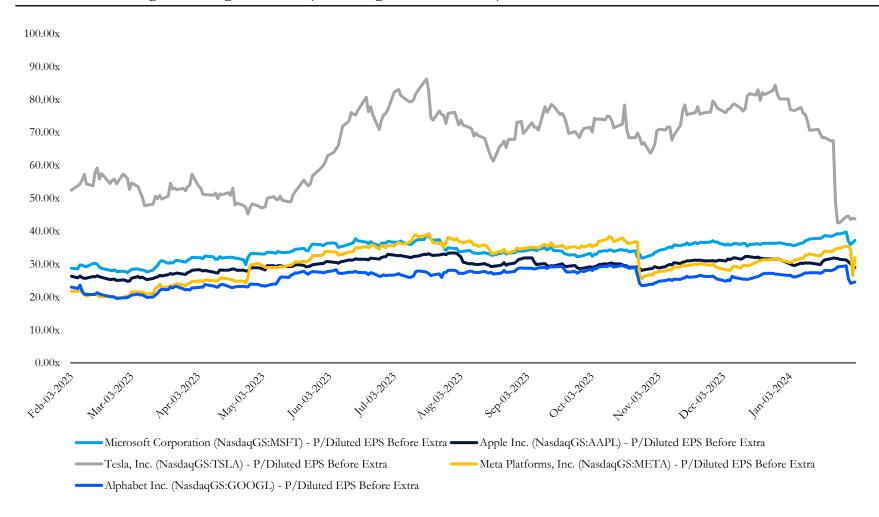
Mean and 75th percentile analysis yield upsides that rationalize how we expect market to appreciate MSFT in LT

P/E Evolution: Really That Egregious?



MSFT valuation quickly rationalizes when plotted against similar equities; note that NDIC already holds 2 of the equities shown below

MSFT 1-Yr P/E Against "Magnificent 7" (Excluding: AMZN, NVDA)



"But it's at an ATH!!!!" - Charlie (Probably)



The all-time-high argument suggests that we should attempt to time the market; this is something we as value investors do not practice

