

Market Snapshot

Shares Outstanding (mn)	7628.81
Market Cap (USD bn)	\$1,102.1
52-week low	\$93.96
52-week high	\$145.67
TTM P/E	27.3
Beta	1.1

Source: Bloomberg

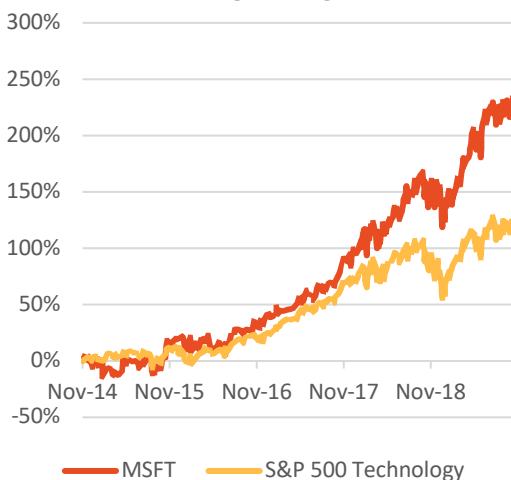
Investment Thesis

We issue a BUY recommendation on MSFT with a target price of \$158.63, presenting 9.74% upside. Our opinion is based on a 80%/20% mix of intrinsic (FCFF) and relative (EV/EBITDA & P/E) valuation respectively. Our target price implies a 28.8x 2019F P/E, which is below MSFT's historical valuations of 32.3x P/E (ave. 2015A-2018A)

Diversified business portfolio:

MSFT operates multiple business lines resulting in a more diversified portfolio that reduces the probability of shocks in its growth should there be an economic downturn. Additionally, the ability for customers to integrate MSFT's products vertically puts it in an advantage in comparison to other technological companies in terms of retaining and attracting customers in its infrastructure

RELATIVE SHARE PRICE PERFORMANCE



Source: Bloomberg

Booming Intelligence Cloud Demand:

MSFT is the second largest public cloud computing provider in the world behind Amazon. Its integration with the MSFT product line makes experimenting and moving from on premises to the cloud more painless than that of competitors. It can utilize the loyal base of customers who use MSFT's Operating System and Productivity software, convincing them to migrate their infrastructure to the cloud. MSFT's Intelligence Cloud Business have been growing at a 10.5% CAGR in 2015A-2019A and we expect its growth to accelerate in the future as the industry grows and MSFT obtains a larger market share. In 2019, some of MSFT's major achievement in the cloud includes contracts for the \$10 billion for DoD JEDI, \$500 million for Walgreens and \$2 billion for AT&T. Additionally, its economics of scale and decrease in price of semiconductors will assist in expanding its margins.

Recurring Revenue from Productivity & Database Software:

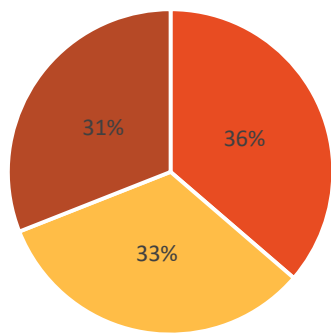
The MSFT Office products provided by MSFT Account for 26% of revenue and has been having double digit growth. MSFT SQL Database Management Software is also deemed to be the defacto software for databases. Due to high switching cost and integration with other MSFT products, we believe that revenues from the productivity software business line would not fall in the future. Additionally, we believe that its office products has a network effect that encourages developer to build on MSFT's products. As an example, financial professionals use add-ins built by Bloomberg, FactSet and Capital IQ which is only accessible through MSFT Excel.

Valuation

Methodology	Weight	Price
Intrinsic	80%	\$ 172.69
Relative	20%	\$ 102.42
Target Price		\$ 158.63

Source: Team Analysis

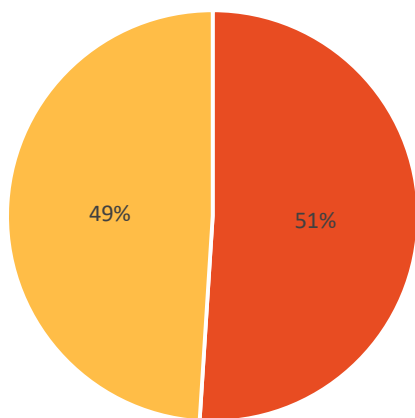
REVENUE BY SEGMENT



- More Personal Computing
- Productivity and Business Processes
- Intelligent Cloud

Source: Company Data

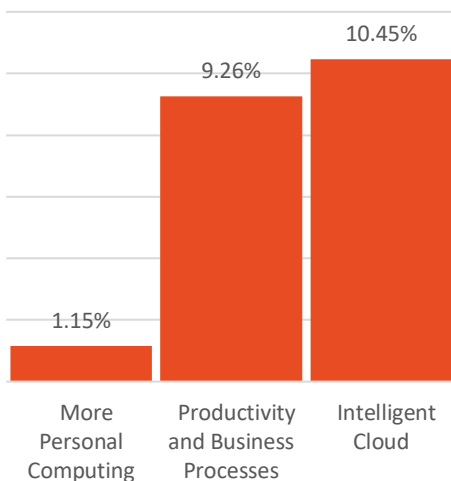
REVENUE BY GEOGRAPHY



- United States
- International

Source: Company Data

REVENUE CAGR BY SEGMENT



Source: Company Data

Business Description

MSFT Corporation is a technology company that was founded in 1975 in Redmond, WA with the mission to empower every person and every organization on the planet to achieve more. Its platform and tools mainly drive small business productivity, large business competitiveness, and public-sector efficiency. This is achieved through the various product lines that MSFT offer such as Productivity and Business Processes, Intelligent Cloud and Personal Computing. Currently, the company has offices in 100 countries globally and employs about 131,000 employees. It provides products and services globally with 51% of its sales in the United States and 49% internationally.

The company started its dominance in the Operating system but has expanded to include other business lines. Over the past few years, MSFT has been accelerating its public cloud growth, acquiring around 40 companies since 2014.

Productivity and Business Process: This segment has been growing significantly over the past 5 years as MSFT has introduced new products into its line. This business line consists mainly of its MSFT Office products, LinkedIn and Dynamic Business Solutions. Its Office products has recently experienced a shift to a subscription based model through Office 365 in 2011. Additionally, MSFT has entered the workplace communication space through its \$27 Billion acquisition of LinkedIn in 2016 and the launch of MSFT Teams in 2017.

Intelligent Cloud: This segment is MSFT’s fastest growing business with an average growth rate of 13% over the past 5 years. The products in this business line includes server products & cloud services and Enterprise Services such as MSFT Consulting Services. In late 2018, MSFT announced the acquisition of Github which would fall under its Intelligent Cloud Business Line. Its public cloud segment, MSFT Azure, provides out of the box services through the cloud such as computing, storage, Artificial Intelligence and Machine Learning to IT professionals and enterprises through its data centers globally. Azure revenue is mainly affected by infrastructure-as-a-service and platform-as-a-service consumption-based services, and per user-based services such as Enterprise Mobility + Security. Its public cloud growth has propelled MSFT to own the 2nd largest market share in the IaaS market globally at 15%

More Personal Computing: This segment consists of products and services geared towards harmonizing the interest of end users, developers and IT professionals across devices. In order to achieve this goal, some of MSFT products include Windows Licensing, Devices, gaming and search. The segment is the slowest growing business line and has been growing at 1.15% CAGR (2015A-2019A)

Industry Overview

Cloud Computing: The public cloud computing market is currently valued at 146Bn in 2018 with a potential to grow to 331.2 Bn in 2022. Businesses have realized the benefits of moving to the public cloud such as scalability and reduced IT costs such that public cloud spending now comprise 30% of global IT Infrastructure spending, an increase from 15% in 2014. Within the Cloud Computing Industry, Software as a service (SAAS) dominates the landscape accounting for 80% of all Public IT Cloud services revenue in 2018. This SAAS segment of public cloud is an area where MSFT controls 21.7% of the global market share behind VMWare's 38.8%. The Infrastructure As A Service (IAAS) market also shows strong performance by MSFT accounting for 15.5% of the market. Similar to the overall public cloud market, the IAAS market is expected to grow from 88 Bn 2019 to 206Bn in 2027.

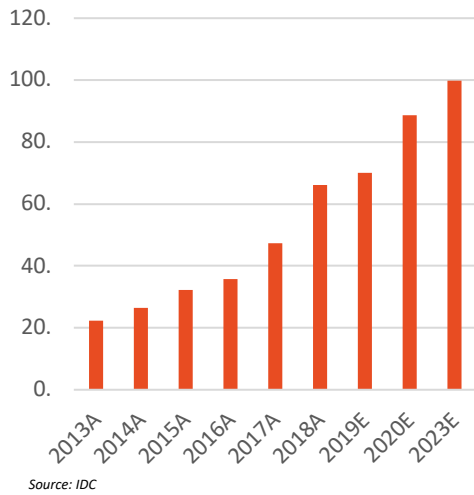
Overall, the cloud computing industry is expected to growth exponentially in the near future as 19,509 exabytes of data is expected to flow through public data centers, double that of today. According to a survey by KPMG, 49% and 38% of IT leaders globally plan to make significant investments in SaaS and IaaS respectively over the next 1-3 years. Additionally, 17% of organizations have plans to utilize the public cloud over the next 12 months.

Operating System & Productivity Software: The OS & productivity software market has been growing at an annualized growth rate of 6.3% over the past 5 years with a forecasted 2.4% annualized MSFT held 58.3% of the market, significantly more than 2nd place MSFT of 16.2%. The uniqueness of this industry is that it holds a mix of both business-to-business sales and business-to-consumer sales. Therefore, key revenue drivers for corporations includes investment in computing and software technology by companies and per capita disposable income. The slowdown in growth is expected hardware product sales is reaching a mature stage as 97% of household in the US has at least 1 computer. Demand for software products are highly correlated to hardware demand as individuals tend to only update to the latest software when making new hardware purchases.

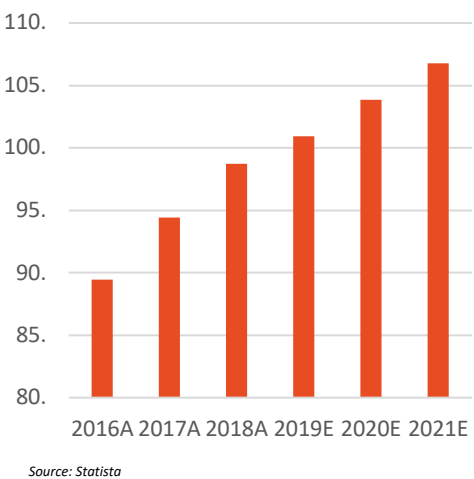
Competitive Positioning

Threat of New Entrants: The emergence of home-made software by entrepreneurs might put MSFT at risk. However, in order to compete with MSFT, a company would require highly specialized labor which might be costly for new entrants into the market. Additionally employees would need to have expertise skills in areas such as security. Disruption in the Operating Systems area is difficult but might emerge in the productivity software space. The concentration of power held by MSFT will be a significant barrier for new entrants as consumers stick with familiarity and seamless integration in software.

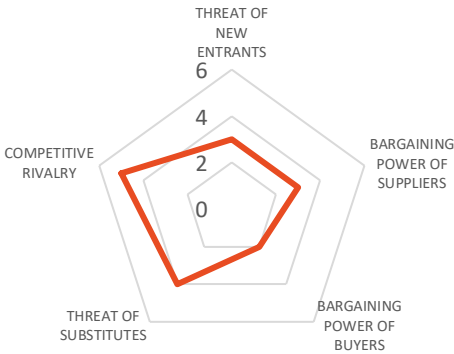
ANNUAL SPENDING ON CLOUD IT INFRASTRUCTURE (IN BILLION USD)



ANNUAL GLOBAL BUSINESS PRODUCTIVITY SOFTWARE REVENUE (IN BILLION USD)



PORTER'S FIVE FORCES

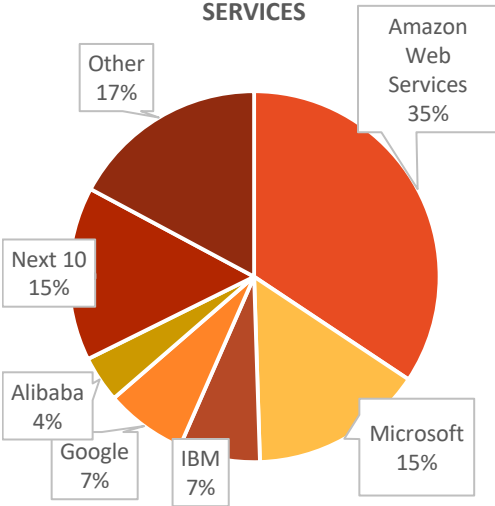


Source: Team Analysis

In the cloud space, there is a demand by customers to continuously innovate to stay relevant. Additionally, to ensure global reliance and availability, companies would need to invest heavily in servers and property. Even though computing power is getting cheaper, large economics of scale is needed to ensure minimal costs. Cheaper labor and land outside of the US has resulted in competition from non-US companies but we believe they target customers with lower revenue as reliability and availability is crucial for customers, which can only be provided by cloud providers with large scale operations.

Bargaining Power of Suppliers: In the Operating system and productivity area, a majority are self-built in house by employees. 42.5% of revenue is typically spent on wages relative to 26.8% on wages for all industries. The recent decrease in unemployment rate, hitting a 50 year low, might prove difficult to hire Information Technology talent. Additionally, the growing sector of the Technology industry compounds the high demand for technological talent globally. Fortunately, MSFT has an advantage of tapping into talent globally having offices in major technological hub such as Seattle, Boston, Hong Kong, Singapore and Ireland. Additionally, it was ranked by Glassdoor as #34 best places to work in 2018.

GLOBAL MARKET SHARE OF CLOUD INFRASTRUCTURE SERVICES

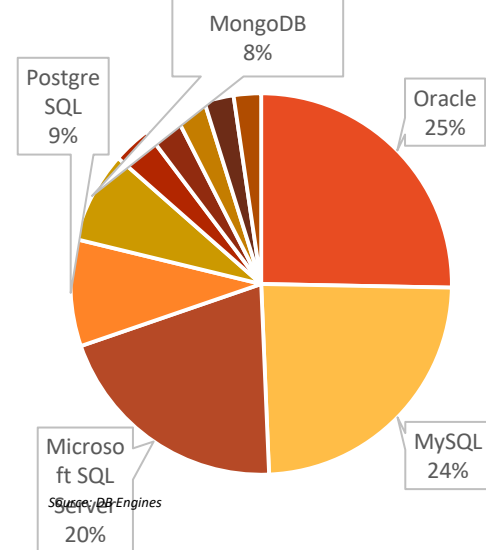


Source: Synergy Research Group

Another aspect is the supply of computer chips to power its cloud computing aspect of the business. Prices for semiconductor components have been falling over the past decade due to production efficiency and technological innovation. The costs of semiconductors is expected to fall in the near future.

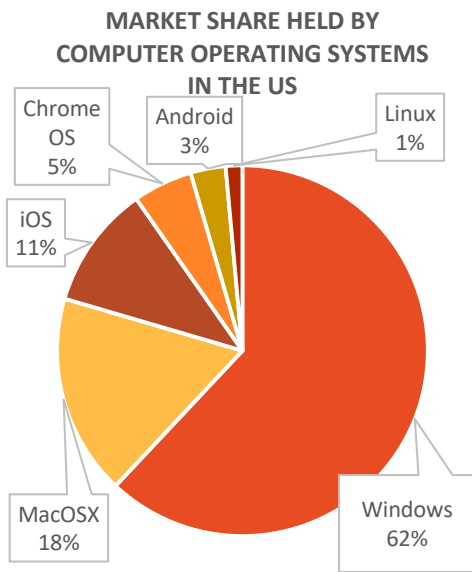
Bargaining Power of Buyers: In the software space, customers have limited power due to the highly concentration power that MSFT has on the Operating System and software industry. Additionally, the high switching costs and knowledge by industry and global talent on MSFT services results in difficulty for business consumers to switch away from MSFT products. In the cloud space, the heating competition between cloud providers still gives customers high bargaining power and MSFT is not considered the cheapest cloud provider as Amazon still dominates the price war for its public cloud computing services.

MARKET SHARE OF DBMS



Threat of Substitute: Due to the concentration in the software space on several companies, there is a medium risk of new players in the market. However, there are the emergence of new companies trying to enter the market such as Dropbox, Zoho and Slack. Even with new entrants, we expect a majority of users will stick with the dominants of the industry, MSFT & Apple due to the high switching costs and cost benefits that MSFT products provides.

In the public cloud space, substitutes that have the scale that MSFT has is limited such as Amazon Web Services, Oracle and VMWare. Additionally, MSFT owns the proprietary software that is run on other public computing services such as Windows SQL & MSFT SQL Server



Source: Stat Counter

Competitive Rivalry: Operating System competition relies heavily on a community developer base that supports its application in the specific operating system. In order to tap a greater customer base, developers tend to create software for operating system's with large user base, namely Windows and Mac OS. This is a self-enforcing mechanism that MSFT has, as they dominate the OS space, more developers will build on its platform and vice versa. On the other hand, productivity software relies less on the stickiness of the product. Additionally, the labor concentration who are familiar with MSFT's system puts MSFT at a competitive edge as businesses have poured resources on its system. Price has become an important factor for consumers as users embrace free productivity software from companies such as Google and Slack resulting in high competition in the productivity area.

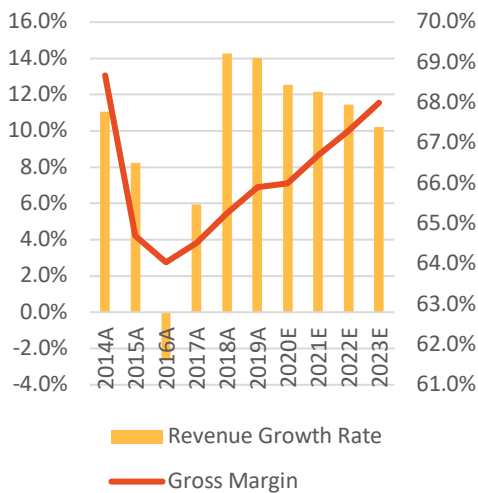
In the Cloud space, there is still ongoing competition for market share by the 2 biggest players in the market, Amazon & MSFT. The competitive nature stems from ensuring that the company that innovates new technologies and products would win customers. Similar to the Operating Systems space, there is a stickiness by companies once they have adopted a cloud computing provider. We expect competition to be strong in the cloud space, even coming from smaller companies that targets niche markets. Most recently, MSFT won the \$10 Billion bid for the US government Joint Enterprise Defense Infrastructure (JEDI) project proving MSFT's strength against its competitors.

Valuation

We issue a BUY recommendation for MSFT with a target price of \$158.63, representing an upside of 9.7% from \$144.55 per share on November 4, 2019. Our target price is driven out on the relative valuation model with a target price of \$102.42 and the intrinsic valuation model with a target price of \$172.69. We weighted the intrinsic valuation model at a weight of 80% and absolute valuation model at a weight of 20%. We decided to weight the intrinsic valuation model at a higher percentage due to the multiple business lines and economies of scale that MSFT has that other companies do not have. Additionally, the intrinsic valuation model allowed us to take into account fluctuations in global demand and forecast cyclicity into each cash flow.

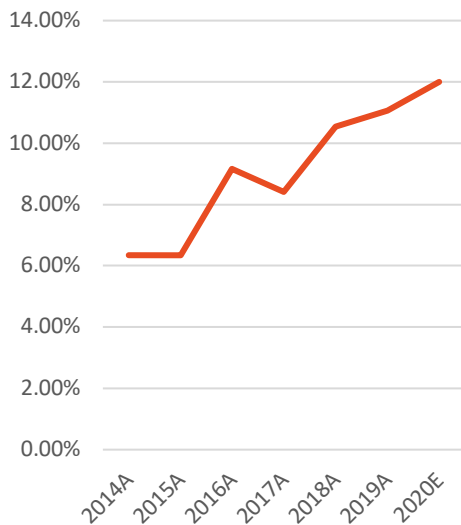
Revenues: We forecasted MSFT's revenue for each of its segmented as reported by the company. Due to the stagnant nature of geographical sales

REVENUE GROWTH & GROSS MARGIN



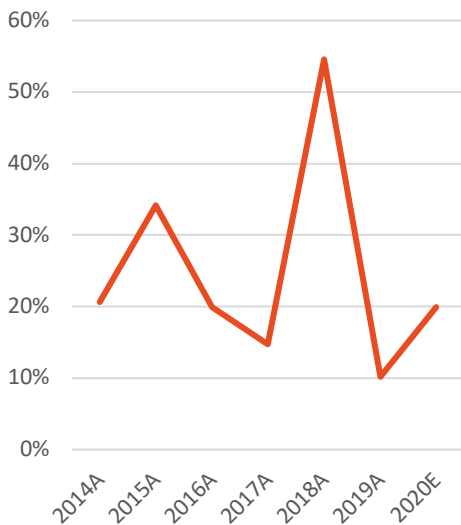
Source: Team Analysis

Capex/Revenue



Source: Team Analysis

Effective Tax Rate



Source: Team Analysis

globally, we decided to not forecast revenue on a geographical basis. For each of the business segments, we took into account the growth rate of the industry at large and forecasted an increase/decrease in market acquisition by MSFT. It is crucial that we forecasted any acquisition or lost in market share as several of MSFT's business line has increased its market share. In the cloud space, we believe any acceleration in growth from 2019's 21% will be limited over the next five years as consumers migrate from on-premise to public cloud and start to slow down thereafter.

Margins

We estimate that MSFT's future margin to increase as limited upkeep is required for software products, except for conducting updates. Additionally, this would be supported by a decrease in needed hardware for its cloud computing business as the cost of semiconductors decrease and its efficiency increase. Even though MSFT's margins dropped in 2015 due to huge investment into its public cloud product, it is evident that the company's margins has accelerated since then and we expect this to happen in the future.

Capital Expenditures:

We expect MSFT to grow its Capital Expenditure at the pace of its revenue growth rate of around 10% and slowing down as the assets materialize and less Capital Investment is needed to maintain its sales. We expect a ramp in Capex over the next 5 years as it continuously grows its fastest business line, MSFT Azure. Additionally, Capex will to grow as MSFT expands its research on Internet of Things & Virtual Reality products for its business to consumer line.

Taxes:

MSFT has operations globally in multiple tax jurisdictions and has effective tax rates that fluctuate over the past couple of years. Most recently, the Tax Cuts and Jobs Act of 2017 reduced MSFT's company tax rate to 10.2% in 2019, the lowest in the past 7 years. Due to recent. We decide to increase the effective tax rate gradually over the next 5 years, approaching a 20% effective tax rate in 2025 to maintain a more conservative approach due to the uncertainty of the 2020 US presidential election which could affect the corporation tax rates in the United States.

Terminal Growth Rate:

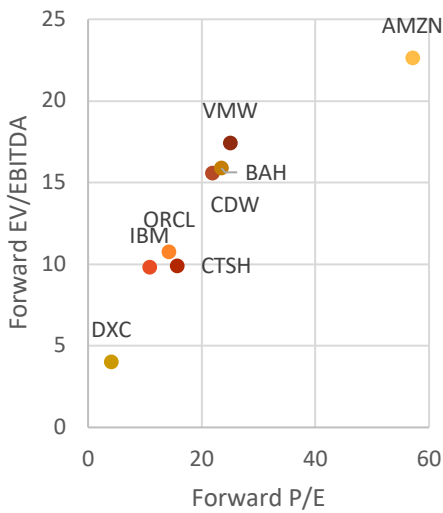
Our 3.6% terminal growth rate assumption takes into account the long term growth rate released by McKinsey & company of 2.1% until 2064. Additionally, we added a 1.5% premium to the terminal growth rate as we believe the use of technology is only going to accelerate in the future and MSFT will be in a position to capitalize its multiple product lines to capture any technological demand.

WACC:

We arrived at a WACC of 8.21% for MSFT. A detailed breakdown of our WACC is presented below:

ASSUMPTION	RATE	METHODOLOGY
Risk-Free Rate	2.53%	US 30-year Treasury Bond
Equity Risk Premium	5.47%	Excess Return of S&P500 over risk-free rate
Beta (x)	1.1	Value Line
Cost of Equity	8.55%	Calculated via CAPM
Cost of Debt	3.28%	Estimated future borrowing rate of MSFT based on AAA Standard & Poor's Rating
Tax Rate	10.00%	Effective Tax Rate
WACC	8.21%	

COMPARABLE ANALYSIS



Source: Bloomberg

Relative Valuation:

We identified 8 peers which have product lines operating in the cloud & productivity and software industry. Due to the different sales mix that MSFT has, we included businesses of different scales to capture new business lines that MSFT plan to enter. We use P/E due to its common use in industries to determine a price and EV/EBITDA due to the high capital intensity nature of the industry

Financial Analysis

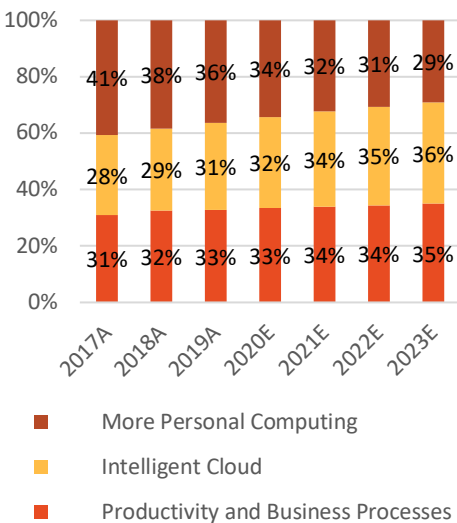
Shift in operational mix results in widening margins:

MSFT's gross margin has been expanding from 64.0% in 2016A to 65.9% in 2019A due to a shift in product mix to its Productivity and Business Process & Intelligence Cloud business which has 15.0% and 22.0% gross margin respectively relative to Personal Computing's gross margin of 9%. We expect this favorable trend to continue which will result in a widening gross margin to 67.3% in 2022E.

Decreasing leverage and strong cash flow generation:

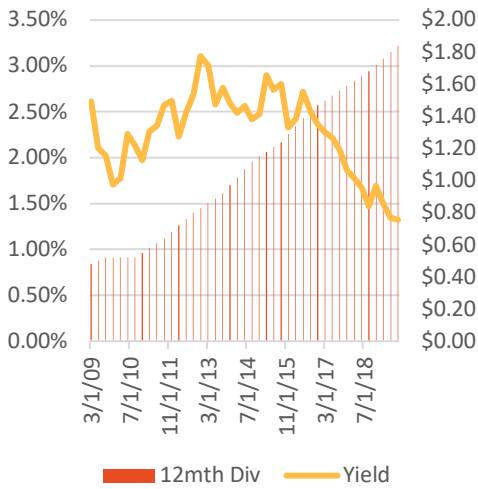
In 2017, MSFT issued \$600bn worth of bonds to beat any expected raises in interest rates for the year. This has led to an increase in Debt-to-Equity (D/E) ratio of 108% in 2017A to fund its dividend and conduct stock buybacks. However, MSFT also has strong cash flow generation ability with an average of 39.1% CFO to revenue over the past 5 years. This has resulted in MSFT's ability to improve its D/E ratio of 84.5% in 2018A. Even though its D/E is high relative to the industry's 18.6%, we project that MSFT's D/E ratio to continue to decrease in the future due to its strong cash holdings.

REVENUE CONTRIBUTION



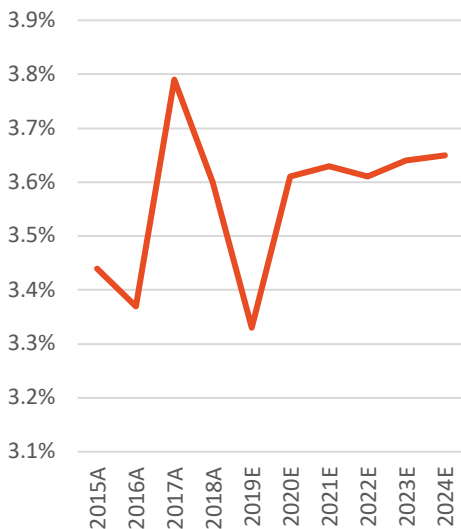
Source: Company Data, Team Analysis

12 MONTH DIVIDEND & DIVIDEND YIELD



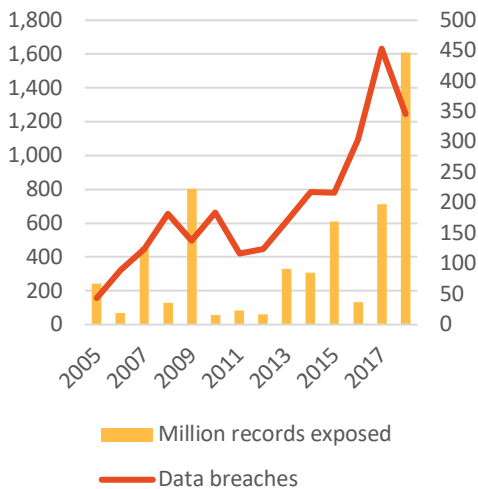
Source: Company Data

GROWTH OF GLOBAL GDP



Source: IMF

DATA BREACHES AND EXPOSED RECORDS IN THE US



Source: Identity Theft Resource Center

Strong Credit Rating:

In 2017, Moody's raised MSFT's credit rating to its highest level of Aaa due to its improving liquidity, long track record of financial performance, strong and growing revenue and diversified customer base. This is one level higher than the AA+ credit rating of the United States. Additionally, MSFT has the highest credit rating in the investment grade technology sector

Sustainable Dividends & Share Buyback

Currently, MSFT pays a dividend yield of 1.4% with a payout ratio of 34.7%, which is relatively low. Additionally, MSFT has been using its strong debt credit rating and cash position to increase its dividend and buyback shares. In 2018A, MSFT bought back \$19.54Bn shares, authorized \$40Bn in additional stock buybacks and increased its dividends by 11% for Q4 2019 in September 2019. MSFT has demonstrated a strong ability to provide returns towards its shareholders and its strong balance sheet conforms this trend in the future.

Investment Risk

Market Risk | Slowdown in global demand Currently, the global economy is experiencing a global slowdown and economists forecasts a 30% probability of a recession in 2020. We believe the heavy reliance on business investment and household income in the technology industry might possess a risk to the growth of the sector as a whole. However, MSFT's product has become a necessity for the operations of businesses. Even though revenue growth might decline, we do not expect drastic losses in revenue should a recession happen.

Market Risk | Foreign Exchange Risk

51% of MSFT's revenue is collected outside of the United States, resulting in high exposure to foreign exchange rates outside the control of MSFT. Headwinds in exchange rate could force MSFT to pass on costs to customers or reduce its margin. However, MSFT hedges its revenue streams in non-US currencies including the euro, Japanese Yen, British Pound, Canadian dollar and Australian dollar.

Market Risk | Political Risk

The 2020 election has proven to be consequential for multiple technology giants. Presidential candidates have been running on the basis of breaking up technological companies such as Amazon, Google and MSFT. However, MSFT's strong corporate governance structure under the leadership of Satya Nadella has ensured that the company stays out of any controversial debates by presidential candidates over the past couple of months.

Operational Risk | Data Security Risk

As MSFT expands its cloud offering, multiple companies have been hit by security breaches. Even though MSFT provides customer with the tools to best protect their data online, any misconfiguration by customers on the public

cloud might negatively affect's MSFT's reputation in the cloud computing industry. Additionally, security risks are also evident in other MSFT products such as LinkedIn & Xbox where customer data might be mis-accessed.

Operational Risk | Misuse of personal data

As the company shares advertisement through LinkedIn, Microsoft Advertising, MSN and Xbox Live, advertisers might misuse customer's data to target specific users. Additionally, misinformation by advertisers that is not detected by MSFT and shared on its platform could result in reputation damage. The company might face increased regulatory scrutiny and liability should it occur and affect the overall company margins.

Operational Risk | Natural Disasters & Geopolitical events

As MSFT provides cloud based services, any natural disasters and geopolitical event outside of MSFT's control could disrupt its data center operations worldwide. Changes in global climate could result in increased seismic activity and flooding that could destroy data centers and cause outages resulting in lost customer trust on MSFT's cloud system.

Environmental, Social and Corporate Governance

Environmental:

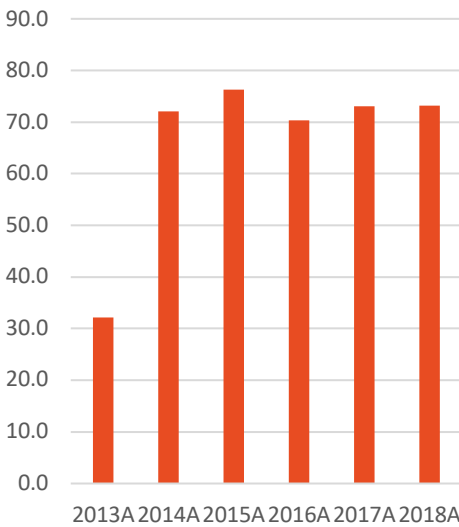
In 2009, MSFT pledged to reduce operational carbon operational emissions by 75% by 2030. MSFT is investing heavily in ensuring that its data centers and is currently powering 60% of its data centers on renewable energy with a target of 70% of data centers in the next 4 years. Additionally, it is currently building 17 new buildings in its Redmon, WA campus, each of which will run on carbon-free electricity.

In regards to its products, it also pushes on packaging and hardware sustainability. Currently, it has exceeded it 2020 target for packaging recyclability of 80% by 7.6 percentage points. Additionally, it has become the first company to certify carbon neutral gaming consoles through its Xbox line of products.

Social:

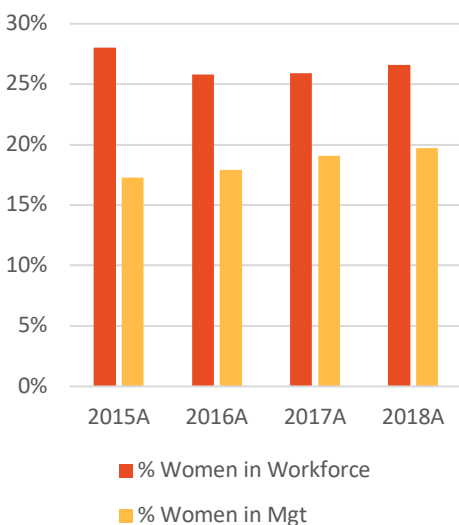
MSFT has been releasing annual sustainability reports that uses the United Nations' approved disclosures for reporting on human rights and progress defined by the UN Global Compact. Additionally, The Human Rights Campaign gave MSFT 100 in 2018 & 2019 on its Corporate Equality Index and Thomson Reuters ranked MSFT 16th on its Diversity and Inclusion Index. Even though the cores look positive, MSFT has received gender discrimination and unequal pay lawsuits. In order to ensure improved representation and better retention strategies, executive compensation are tied to internal diversity and inclusion goals.

DIRECT CO2 EMISSIONS



Source: Company Data

WOMEN IN WORKFORCE



Source: Company Data

Corporate Governance:

Since Satya Nadella took over as Chief Executive Officer of MSFT in 2016, he has expanded the board size from 11 to 14 and increased the number of non-executive directors from 88.9% in 2014 to 92.9% in 2019. Additionally, the Chairman of the board and Chief Executive Officer role are separated as John W. Thompson is currently the Chairman. The large amount of non-executive directors and non-CEO duality gives our team confidence that the board of directors will put the executive team accountable should there be any issues in the operations of the company. All of the Board of Directors have experience in the Information Technology industry, but they also bring in experience from other industries such as retail and financials. We believe this is beneficial for the company as it operates multiple business lines and has continuously been looking to further enter new industries. Additionally, there has been an increase in female directors on the board from 20% in 2015 to 28.6% in 2019. We believe that an increase of female directors is crucial to ensure representation of diverse investors on the board. The percentage of female directors is in line with that of the percent of S&P 500 board members who are woman at 27%.

APPENDIX 1: FINANCIAL RATIOS

	2015A	2016A	2017A	2018A	2019A	2020E	2021	2022E	2023E	2024E	2025E	2026	2027	2028	2029	2030
Gross Margin	64.70%	64.04%	64.52%	65.25%	65.90%	66.00%	66.70%	67.30%	68.00%	68.70%	69.00%	69.20%	69.25%	69.30%	69.35%	69.35%
Operating Margin	30.09%	29.83%	30.37%	31.77%	34.14%	32.96%	34.86%	35.66%	36.66%	35.43%	35.73%	35.93%	35.98%	36.03%	36.08%	36.08%
Interest Burden	95.95%	95.38%	93.08%	93.03%	94.21%	95.27%	96.40%	96.45%	96.51%	96.33%	96.32%	96.29%	96.24%	96.23%	96.23%	96.22%
Tax Burden	43.30%	75.54%	86.90%	47.27%	91.34%	82.18%	83.02%	83.01%	82.99%	82.92%	82.88%	82.85%	82.80%	82.80%	82.79%	82.78%
Net Margin	13.03%	22.53%	26.39%	15.02%	31.18%	27.08%	28.94%	29.60%	30.42%	29.38%	29.61%	29.77%	29.79%	29.83%	29.87%	29.87%
Asset Turnover	53.96%	48.31%	42.62%	43.35%	46.15%	49.25%	49.74%	47.75%	47.37%	46.86%	46.43%	46.03%	45.53%	45.38%	45.31%	45.25%
Return on Assets	6.99%	10.12%	10.18%	6.40%	13.69%	13.29%	13.13%	13.39%	13.72%	13.21%	13.28%	13.30%	13.27%	13.29%	13.30%	13.30%
Financial Leverage	2.18	2.44	2.85	3.13	2.80	2.59	2.30	2.29	2.28	2.27	2.25	2.24	2.23	2.23	2.23	2.23
Return on Equity	15.23%	24.72%	29.06%	20.03%	38.35%	34.37%	30.21%	30.66%	31.26%	29.93%	29.94%	29.86%	29.65%	29.68%	29.72%	29.71%
Revenue Growth Rate	8.25%	-2.59%	5.94%	14.28%	14.03%	12.53%	12.15%	11.44%	10.21%	8.40%	7.02%	5.82%	4.20%	3.87%	3.54%	3.23%
Current Ratio	2.47	2.68	2.92	2.90	2.53	2.63	2.64	2.65	2.66	2.67	2.67	2.67	2.67	2.67	2.67	2.67
Quick Ratio	2.41	2.64	2.88	2.86	2.50	2.58	2.60	2.61	2.62	2.62	2.63	2.63	2.63	2.63	2.63	2.63
Debt/Equity	44.07%	69.46%	108.91%	105.79%	84.49%	69.81%	57.42%	56.97%	56.51%	56.04%	55.61%	55.17%	54.73%	54.73%	54.72%	54.72%
Net Debt/Equity	37.08%	61.63%	100.17%	91.35%	73.39%	59.73%	49.13%	48.75%	48.36%	47.96%	47.58%	47.21%	46.83%	46.83%	46.83%	46.83%

APPENDIX 2: INCOME STATEMENT

In Millions of USD except Per Share	2018A	2019A	2020E	2021E	2022E	2023E	2024E	2025E	2026A	2027A	2028A	2029A	2030A
Revenue	110,360.0	125,843.0	141,606.8	158,809.0	176,974.2	195,037.4	211,412.8	226,245.5	239,408.0	249,468.6	259,117.9	268,291.8	276,948.9
+ Sales & Services Revenue	110,360.0	125,843.0	141,606.8	158,809.0	176,974.2	195,037.4	211,412.8	226,245.5	239,408.0	249,468.6	259,117.9	268,291.8	276,948.9
Productivity and Business Processes	35,865.0	41,160.0	47,334.0	53,960.8	60,975.7	68,292.7	75,122.0	81,131.8	85,999.7	89,439.7	92,122.9	93,965.3	94,905.0
Intelligent Cloud	32,219.0	38,985.0	45,832.9	53,502.0	61,828.2	69,865.8	76,852.4	83,000.6	88,810.7	94,139.3	99,787.7	105,774.9	112,121.4
More Personal Computing	42,276.0	45,698.0	48,439.9	51,346.3	54,170.3	56,878.8	59,438.4	62,113.1	64,597.6	65,889.6	67,207.4	68,551.5	69,922.6
- Cost of Revenue	38,353.0	42,910.0	48,146.3	52,883.4	57,870.5	62,412.0	66,172.2	70,136.1	73,737.7	76,711.6	79,549.2	82,231.4	84,884.8
Gross Profit	72,007.0	82,933.0	93,460.5	105,925.6	119,103.6	132,625.4	145,240.6	156,109.4	165,670.3	172,757.0	179,568.7	186,060.3	192,064.1
- Operating Expenses	36,949.0	39,974.0	46,792.0	50,570.5	56,001.0	61,131.8	70,339.0	75,274.0	79,653.3	83,000.5	86,211.0	89,263.2	92,143.5
+ Selling, General & Admin	22,223.0	23,098.0	27,896.5	29,379.7	32,386.3	35,106.7	42,128.9	45,084.7	47,707.6	49,712.4	51,635.3	53,463.4	55,188.5
+ Selling & Marketing	17,469.0	18,213.0	22,657.1	23,821.4	26,546.1	29,255.6	31,711.9	33,936.8	35,911.2	37,420.3	38,867.7	40,243.8	41,542.3
+ General & Administrative	4,754.0	4,885.0	5,239.5	5,558.3	5,840.1	5,851.1	10,417.0	11,147.9	11,796.4	12,292.2	12,767.6	13,219.6	13,646.2
+ Research & Development	14,726.0	16,876.0	18,895.5	21,190.8	23,614.7	26,025.0	28,210.1	30,189.3	31,945.6	33,288.1	34,575.7	35,799.8	36,955.0
Operating Income (Loss)	35,058.0	42,959.0	46,668.5	55,355.1	63,102.6	71,493.7	74,901.6	80,835.4	86,017.0	89,756.4	93,357.7	96,797.2	99,920.6
- Non-Operating (Income) Loss	983.0	-81.0	1,524.1	1,206.5	1,359.0	1,526.1	1,700.7	1,859.0	2,003.9	2,141.1	2,235.6	2,326.6	2,413.4
+ Interest Expense, Net	2,733.0	2,686.0	2,279.3	2,053.4	2,302.8	2,566.2	2,828.1	3,065.6	3,280.7	3,471.5	3,617.4	3,757.3	3,890.3
Other Gain/Loss	-1,750.0	-2,767.0	-755.2	-846.9	-943.8	-1,040.1	-1,127.4	-1,206.5	-1,276.7	-1,330.4	-1,381.8	-1,430.8	-1,476.9
Pretax Income (Loss), Adjusted	34,075.0	43,040.0	45,144.4	54,148.6	61,743.6	69,967.6	73,200.9	78,976.4	84,013.1	87,615.3	91,122.2	94,470.6	97,507.2
- Abnormal Losses (Gains)	-2,399.0	-648.0	-729.2	-817.8	-911.3	-1,004.3	-1,088.6	-1,165.0	-1,232.8	-1,284.6	-1,334.3	-1,381.5	-1,426.1
Pretax Income (Loss), GAAP	36,474.0	43,688.0	45,873.6	54,966.4	62,654.9	70,971.9	74,289.5	80,141.4	85,245.9	88,899.9	92,456.5	95,852.1	98,933.3
- Income Tax Expense (Benefit)	19,903.0	4,448.0	7,522.0	9,013.0	10,273.7	11,637.4	12,181.4	13,141.0	13,978.0	14,577.1	15,160.3	15,717.1	16,222.3
+ Current Income Tax	25,046.0	10,911.0	10,020.6	12,006.9	13,686.3	15,503.1	16,227.8	17,506.1	18,621.1	19,419.3	20,196.2	20,937.9	21,611.0
+ Deferred Income Tax	-5,143.0	-6,463.0	-2,498.6	-2,993.9	-3,412.7	-3,865.7	-4,046.4	-4,365.1	-4,643.1	-4,842.2	-5,035.9	-5,220.8	-5,388.7
Income (Loss) from Cont Ops	16,571.0	39,240.0	38,351.6	45,953.4	52,381.2	59,334.5	62,108.1	67,000.4	71,267.9	74,322.8	77,296.2	80,135.0	82,710.9
Net Income Avail to Common, GAAP	16,571.0	39,240.0	38,351.6	45,953.4	52,381.2	59,334.5	62,108.1	67,000.4	71,267.9	74,322.8	77,296.2	80,135.0	82,710.9

APPENDIX 3: BALANCE SHEET

In Millions of USD except Per Share	2018A	2019A	2020E	2021E	2022E	2023E	2024E	2025E	2026A	2027A	2028A	2029A	2030A
Total Assets													
+ Cash, Cash Equivalents & STI	133,768.0	133,819.0	149,040.1	167,145.2	186,263.9	205,275.3	222,510.3	238,121.6	251,975.0	262,563.7	272,719.5	282,375.0	291,486.6
+ Cash & Cash Equivalents	11,946.0	11,356.0	11,236.6	12,601.6	14,043.1	15,476.4	16,775.8	17,952.8	18,997.2	19,795.6	20,561.2	21,289.2	21,976.2
+ ST Investments	121,822.0	122,463.0	137,803.4	154,543.6	172,220.8	189,798.9	205,734.5	220,168.8	232,977.7	242,768.1	252,158.3	261,085.7	269,510.4
+ Accounts & Notes Receiv	26,481.0	29,524.0	32,057.8	35,952.2	40,064.5	44,153.8	47,860.9	51,218.8	54,198.6	56,476.2	58,660.7	60,737.5	62,697.4
+ Inventories	2,662.0	2,063.0	3,341.7	3,670.5	4,016.7	4,331.9	4,592.9	4,868.0	5,118.0	5,324.4	5,521.3	5,707.5	5,891.7
+ Other ST Assets	6,751.0	10,146.0	9,131.3	10,240.6	11,412.0	12,576.8	13,632.7	14,589.2	15,437.9	16,086.7	16,708.9	17,300.5	17,858.7
Total Current Assets	169,662.0	175,552.0	193,570.9	217,008.5	241,757.0	266,337.7	288,596.8	308,797.6	326,729.6	340,451.0	353,610.5	366,120.5	377,934.4
+ Property, Plant & Equip, Net	36,146.0	43,856.0	26,900.1	56,717.5	64,354.2	72,236.1	79,778.4	87,017.5	93,885.5	99,787.4	103,647.2	107,316.7	110,779.6
+ Property, Plant & Equip	65,369.0	79,186.0	49,512.9	56,717.5	64,354.2	72,236.1	79,778.4	87,017.5	93,885.5	99,787.4	103,647.2	107,316.7	110,779.6
- Accumulated Depreciation	29,223.0	35,330.0	22,612.8	25,903.2	29,390.9	32,990.6	36,435.2	39,741.4	42,878.0	45,573.4	47,336.2	49,012.1	50,593.6
Other LT Assets	53,040.0	67,148.0	68,057.5	76,325.0	85,055.4	93,736.7	101,606.9	108,735.6	115,061.6	119,896.8	124,534.4	128,943.4	133,104.1
Total Noncurrent Assets	89,186.0	111,004.0	94,957.6	133,042.5	149,409.6	165,972.8	181,385.3	195,753.1	208,947.1	219,684.2	228,181.5	236,260.1	243,883.7
Total Assets	258,848.0	286,556.0	288,528.5	350,051.0	391,166.6	432,310.5	469,982.1	504,550.7	535,676.6	560,135.2	581,792.0	602,380.6	621,818.1
Liabilities & Shareholders' Equity													
+ Payables & Accruals	16,841.0	21,877.0	20,129.1	22,047.7	24,329.7	26,495.5	28,374.1	30,213.4	31,855.8	33,154.8	34,404.7	35,589.0	36,735.7
+ Accounts Payable	8,617.0	9,382.0	10,990.7	11,799.2	12,908.9	13,909.1	14,730.8	15,612.9	16,405.9	17,055.7	17,682.8	18,275.2	18,863.1
Other Payable	8,224.0	12,495.0	9,138.4	10,248.5	11,420.8	12,586.5	13,643.2	14,600.5	15,449.9	16,099.1	16,721.8	17,313.9	17,872.5
+ ST Debt	5,573.0	7,348.0	8,268.5	9,272.9	10,333.6	11,388.3	12,344.4	13,210.5	13,979.1	14,566.5	15,129.9	15,665.6	16,171.1
+ Other ST Liabilities	36,074.0	40,195.0	45,230.1	50,724.5	56,526.6	62,296.1	67,526.5	72,264.2	76,468.3	79,681.7	82,763.8	85,694.0	88,459.1
Total Current Liabilities	58,488.0	69,420.0	73,627.6	82,045.2	91,189.9	100,179.9	108,245.0	115,688.0	122,303.2	127,403.1	132,298.4	136,948.6	141,365.9
+ LT Debt	81,935.0	79,107.0	69,618.1	78,075.2	87,005.7	95,886.2	103,936.8	111,229.0	117,700.0	122,646.1	127,390.0	131,900.2	136,156.3
+ Other LT Liabilities	35,707.0	35,699.0	33,705.5	37,800.0	42,123.7	46,423.1	50,320.9	53,851.4	56,984.3	59,378.9	61,675.7	63,859.3	65,919.9
Total Noncurrent Liabilities	117,642.0	114,806.0	103,323.6	115,875.2	129,129.4	142,309.3	154,257.6	165,080.3	174,684.3	182,025.1	189,065.7	195,759.4	202,076.2
Total Liabilities	176,130.0	184,226.0	176,951.2	197,920.4	220,319.3	242,489.2	262,502.7	280,768.4	296,987.6	309,428.2	321,364.1	332,708.1	343,442.1
Total Equity	82,718.0	102,330.0	111,577.3	152,130.7	170,847.3	189,821.3	207,479.5	223,782.3	238,689.1	250,707.0	260,427.9	269,672.5	278,376.0
Total Liabilities & Equity	258,848.0	286,556.0	288,528.5	350,051.0	391,166.6	432,310.5	469,982.1	504,550.7	535,676.6	560,135.2	581,792.0	602,380.6	621,818.1

APPENDIX 4: INTRINSIC VALUATION

In Millions of USD except Per Share	2018A	2019A	2020E	2021E	2022E	2023E	2024E	2025E	2026A	2027A	2028A	2029A	2030A
Net Income	16571.0	39240.0	38351.6	45953.4	52381.2	59334.5	62108.1	67000.4	71267.9	74322.8	77296.2	80135.0	82710.9
Depreciation	10261.0	11682.0	7979.4	12300.5	13707.4	15106.5	16374.8	17523.7	18543.2	19322.4	20069.8	20780.4	21450.9
Deffered Income Taxes	5143.0	6463.0	2498.6	2993.9	3412.7	3865.7	4046.4	4365.1	4643.1	4842.2	5035.9	5220.8	5388.7
Change in Non Cash Working Capital	-60.0	-4452.0	13930.7	13655.0	14162.4	14157.3	12894.6	11580.8	10272.3	7823.2	7498.5	7131.8	6709.7
Cash flow from Operations	31915.0	52933.0	62760.4	74902.8	83663.7	92463.9	95423.9	100470.0	104726.6	106310.6	109900.4	113268.0	116260.2
Capital Expenditures	-11632.0	-13925.0	-15350.0	-17180.0	-23891.5	-25354.9	-27483.7	-28280.7	-28729.0	-24946.9	-22763.9	-23569.8	-24330.4
Free Cash Flow to Firm	20283.0	39008.0	47410.4	57722.8	59772.2	67109.1	67940.2	72189.3	75997.6	81363.7	87136.5	89698.2	91929.8
Discount Rate			8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%
Time Amount			0.6	1.6	2.6	3.6	4.6	5.6	6.6	7.6	8.6	9.6	10.6
PV of FCFF			45080.8	50720.9	48535.7	50357.6	47112.2	46259.5	45003.8	44524.9	44065.0	41917.9	39700.3

Price Target	
Total PV FCFF	1394942.20
PV of Terminal Value	891663.64
Add Cash	11356.00
Less Debt	86455.00
Firm Value	1319843.20
Number of Shares	7643.00
Current Price	144.55
Target Stock Price	172.69
Margin of Safety	19.46%

APPENDIX 5: RELATIVE VALUATION

Ticker	Company Name	P/E	EV/EBITDA
IBM	International Business Machines Corp	10.80	9.81
AMZN	Amazon.com Inc	57.08	22.64
CDW	CDW Corp	21.89	15.57
ORCL	Oracle Corp	14.26	10.74
DXC	DXC Technology Co	4.09	4.01
CTSH	Cognizant Technology Solutions Corp	15.63	9.88
VMW	VMware Inc	25.00	17.43
BAH	Booz Allen Hamilton Holding Corp	23.49	15.89
Average		21.25	12.87
Median		18.76	13.16
Price Target (\$)		106.63	98.21

Multiples	Weight	Price Target
P/E	50%	106.63
EV/EBITDA	50%	98.21
		102.42