

Microsoft Corporation

Sustained Azure, O365 growth cycles; reinstate MSFT coverage w/ Buy, \$256 PO

Reinstating Coverage: BUY | PO: 256.00 USD | Price: 214.13 USD

Low double digit growth sustainable led by Azure, O365

We are reinstating coverage on Microsoft with a Buy rating and \$256 PO. We believe that the company can sustain low double digit growth in the coming 3-5 years, led by continued adoption of Azure cloud infrastructure platform, cloud based Office 365 productivity suite and more profitable Games and Game Pass revenue in the Xbox franchise. While a revenue mix shift towards the lower margin Azure and O365 segments may offset COGS scale benefits near term, we think operating expense scale is likely to drive stable 70 to 110 basis point margin expansion in the coming years.

CIO Survey suggests Azure gaining momentum

Microsoft is well positioned in each of these businesses to generate continued growth and scale. In Azure, we believe that Microsoft is on a path to catch up to AWS market share in the coming 5 to 6 years. We spoke with a dozen key Microsoft reseller and SI partners and conducted a survey of >400 IT professionals across SMB/large enterprises. Results suggest business are planning to migrate equal incremental workloads to Azure and AWS, citing Microsoft as equally trustworthy for mission critical workloads in the cloud. We believe that ultimately, Azure, AWS and Google Cloud Platform will command similar share of the \$105 billion cloud infrastructure market. We are modeled for Microsoft's IaaS/PaaS Azure business to generate a 5 yr CAGR of 33%, with market share reaching 33%, from 23% in CY20, approaching AWS share of 35% at that point.

PO of \$256 represents 29x our C22 FCF estimate

With consistent low double digit revenue growth and 70 to 120 basis point margin expansion, we are forecasting solid 15% FCF CAGR through FY22. Ramping Azure will be a key driver of margin expansion over time. Our PO of \$256 is based on an EV/FCF multiple of 29x our C22e FCF of \$63.5bn, a discount to the large cap SaaS group (38x) given lower FCF growth rate (19% vs. group at 24%).

Estimates (Jun)

(US\$)	2019A	2020A	2021E	2022E	2023E
EPS	4.75	5.76	6.70	7.48	8.60
GAAP EPS	5.06	5.76	6.70	7.48	8.60
EPS Change (YoY)	21.8%	21.3%	16.3%	11.6%	15.0%
Consensus EPS (Bloomberg)			NA	NA	NA
DPS	1.78	1.97	2.17	2.28	2.47

Valuation (Jun)

	2019A	2020A	2021E	2022E	2023E
P/E	45.1x	37.2x	32.0x	28.6x	24.9x
GAAP P/E	42.3x	37.2x	32.0x	28.6x	24.9x
Dividend Yield	0.8%	0.9%	1.0%	1.1%	1.2%
EV / EBITDA*	31.5x	26.2x	24.0x	20.9x	18.3x
Free Cash Flow Yield*	2.3%	2.7%	2.9%	3.4%	4.0%

* For full definitions of *IQmethod*SM measures, see page 41.

16 December 2020

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Stock Data

Price	214.13 USD
Price Objective	256.00 USD
Date Established	16-Dec-2020
Investment Opinion	A-1-7
52-Week Range	132.52 USD - 232.86 USD
Mkt Val (mn) / Shares Out (mn)	1,664,861 USD / 7,775.0
Average Daily Value (mn)	6027.81 USD
BofA Ticker / Exchange	MSFT / NAS
Bloomberg / Reuters	MSFT US / MSFT.OQ
ROE (2021E)	40.9%
Net Dbt to Eqty (Jun-2020A)	48.5%

O365: Office 365

AWS: Amazon Web Services

SMB: Small/Medium businesses

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Refer to important disclosures on page 42 to 44. Analyst Certification on page 40. Price Objective Basis/Risk on page 40.

Timestamp: 16 December 2020 06:00AM EST

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iQprofileSM Microsoft Corporation

iQmethodSM – Bus Performance*

(US\$ Millions)	2019A	2020A	2021E	2022E	2023E
Return on Capital Employed	18.4%	19.4%	21.8%	22.9%	23.5%
Return on Equity	39.8%	40.1%	40.9%	38.9%	36.4%
Operating Margin	34.1%	37.0%	38.1%	39.0%	39.7%
Free Cash Flow	38,260	45,234	49,010	55,996	66,672

iQmethodSM – Quality of Earnings*

(US\$ Millions)	2019A	2020A	2021E	2022E	2023E
Cash Realization Ratio	1.4x	1.4x	1.3x	1.4x	1.4x
Asset Replacement Ratio	1.2x	1.2x	1.6x	1.4x	1.3x
Tax Rate	10.2%	16.5%	15.4%	17.0%	17.0%
Net Debt-to-Equity Ratio	59.4%	48.5%	30.5%	8.8%	-11.2%
Interest Cover	NA	NA	NA	NA	NA

Income Statement Data (Jun)

(US\$ Millions)	2019A	2020A	2021E	2022E	2023E
Sales	125,843	143,015	157,431	174,016	194,373
% Change	14.0%	13.6%	10.1%	10.5%	11.7%
Gross Profit	82,933	96,937	106,607	118,337	132,050
% Change	15.2%	16.9%	10.0%	11.0%	11.6%
EBITDA	54,641	65,755	71,808	82,441	94,211
% Change	20.6%	20.3%	9.2%	14.8%	14.3%
Net Interest & Other Income	729	77	248	0	0
Net Income (Adjusted)	36,830	44,281	50,988	56,352	64,108
% Change	21.7%	20.2%	15.1%	10.5%	13.8%

Free Cash Flow Data (Jun)

(US\$ Millions)	2019A	2020A	2021E	2022E	2023E
Net Income from Cont Operations (GAAP)	39,240	44,281	50,988	56,352	64,108
Depreciation & Amortization	11,682	12,796	11,772	14,547	16,972
Change in Working Capital	(596)	(3,695)	(4,368)	(5,336)	(3,646)
Deferred Taxation Charge	NA	NA	NA	NA	NA
Other Adjustments, Net	1,859	7,293	9,798	11,278	11,929
Capital Expenditure	(13,925)	(15,441)	(19,180)	(20,844)	(22,691)
Free Cash Flow	38,260	45,234	49,010	55,996	66,672
% Change	18.6%	18.2%	8.3%	14.3%	19.1%

Balance Sheet Data (Jun)

(US\$ Millions)	2019A	2020A	2021E	2022E	2023E
Cash & Equivalents	11,356	13,576	17,515	35,743	64,048
Trade Receivables	29,524	32,011	35,263	40,794	47,391
Other Current Assets	134,672	136,328	132,899	131,905	129,221
Property, Plant & Equipment	36,477	44,151	54,442	62,921	71,186
Other Non-Current Assets	74,527	75,245	66,495	65,731	64,849
Total Assets	286,556	301,311	306,615	337,093	376,694
Short-Term Debt	5,516	3,749	6,497	6,497	6,497
Other Current Liabilities	63,904	68,561	71,932	79,507	88,996
Long-Term Debt	66,662	67,249	51,030	43,231	35,830
Other Non-Current Liabilities	48,144	43,448	46,176	49,087	52,033
Total Liabilities	184,226	183,007	175,635	178,322	183,356
Total Equity	102,330	118,304	130,979	158,770	193,339
Total Equity & Liabilities	286,556	301,311	306,615	337,093	376,694

* For full definitions of iQmethodSM measures, see page 41.

Company Sector

Server & Enterprise Software

Company Description

Microsoft develops, manufactures, licenses, and supports a wide range of software products. MSFT has transformed its business model from a component driven model (PC, server) to one driven by the need for cloud capacity. Its Azure platform is growing triple digit and is placed second in public cloud. Products incl. O/S, server applns, O365, Xbox, Surface PC etc. The company has three businesses - Productivity and Business Processes (PBB), Intelligent Cloud (IC) and More Personal Computing (MPC).

Investment Rationale

We believe that Microsoft is well positioned to generate sustained low double digit growth in the coming 3-5 years, led by continued adoption of Azure cloud infrastructure platform, cloud based Office 365 productivity suite and more profitable Games and Game Pass revenue in Xbox. While a revenue mix shift toward lower margin Azure and O365 segments is likely to offset scale benefits NT, operating expense scale is likely to drive stable 70 to 110 basis point margin expansion in the coming years.

Stock Data

Average Daily Volume 28,150,226

Quarterly Earnings Estimates

	2020	2021
Q1	1.38A	1.82A
Q2	1.51A	1.59E
Q3	1.40A	1.57E
Q4	1.46A	1.72E

Investment Thesis

We are reinstating coverage on Microsoft with a Buy rating and \$256 PO. We believe that the company can sustain low double digit growth in the coming 3-5 years, led by continued adoption of Azure cloud infrastructure platform, cloud based Office 365 productivity suite and more profitable games and Game Pass revenue in the Xbox franchise. While a revenue mix shift toward lower margin Azure and O365 segments is likely to offset scale benefits near term, operating expense scale is likely to drive stable 70 to 110 basis point margin expansion in the coming years.

Microsoft is well positioned in each of these businesses to generate continued growth and scale. In Azure, we believe that Microsoft is on a path to catch up to Amazon Web Services market share in the coming 5 years. We spoke with a dozen key Microsoft reseller and system integrator partners and conducted a survey of 417 IT professional across small, medium and large enterprises. The result suggests business are planning to migrate equal incremental workloads to Azure and AWS, citing Microsoft as equally trustworthy for mission critical workloads in the cloud. We believe that ultimately, Azure, AWS and Google Cloud Platform will command similar share of the \$105 billion cloud infrastructure market, given data center scale advantages that these three companies can achieve. We are modeled for Microsoft's IaaS/PaaS Azure business to generate a 5 yr CAGR of 33%, with market share reaching 33% from 23% in 2020, approaching AWS share of 35% at that point.

We are modeled for steady high single digit growth in the Office 365 business, led by continue adoption of Office 365 for cloud based service and premium mix shift. Microsoft partner feedback suggests strong continued pipeline builds for enterprises running E3 and E5 premium versions of Office 365 for premium teams features such as added security, compliance and outbound calling. Finally, with Microsoft planning to include more exclusive game titles to the Game Pass subscription service and a promising new Series X/S console cycle, we are modeled for Xbox growth to accelerate to 35%+ in Q2 and Q3.

With consistent low double digit revenue growth and 70 to 120 basis point margin expansion, we are forecasting solid 14% FCF CAGR through FY22. Ramping datacenter scale in the Azure IaaS/PaaS business will be a key driver of margin expansion over time. We believe that high 50s is possible (approaching AWS levels) near term (from estimated 48% today). Longer term, we think this business could generate SaaS type margins in the high 70s/low 80s.

Our PO of \$256 is based on an EV/FCF multiple of 29x our C22 free cash flow estimate of \$63.5 billion, a discount to the large cap SaaS software group trading at 38x for a lower growth rate (19% y/y in C22 vs. group at 24%) though at a much larger scale. Our PO represents a PEG ratio of 2.3x, in line with historical levels.

Risks to our price objective

Negative margin pressure in NT as Azure mix increases

Microsoft could see some near term gross margin pressure as the Azure business grows as a percentage of overall revenue. While Microsoft's on premise offerings offer a high margin profile, growth in these lines of business is decelerating. The company believes its SaaS offerings (EMS, Office 365, LinkedIn, and Microsoft Dynamics) are close to reaching steady state gross margins, however the IaaS and PaaS business still has room for margin leverage. Ultimately Microsoft believes it could achieve gross margins that surpass AWS margins (55-60%).

Application spending is highly cyclical

Enterprise application spending has proven to be highly cyclical, given the more discretionary nature of applications projects. During an economic slowdown, when firms are faced with shrinking IT budgets, projects involving application upgrades, migrations or new installations are often deferred. This could present a higher degree of risk for a bookings deceleration for Microsoft and other application vendors, in the event of an economic slowdown.

Valuation

Comps

Microsoft has massive scale across its major franchises of Office 365, Azure cloud platform and Xbox, with estimated FY21 revenue of \$37 billion, \$29.5 billion and \$14.3 billion, respectively. With low double digit total company growth in the last several years and in our model over the coming years, ramping datacenter scale in the Azure business and scale on operating expenses, we are modeling for stable 70 – 120 basis points annual margin expansion from 36.9% in FY20.

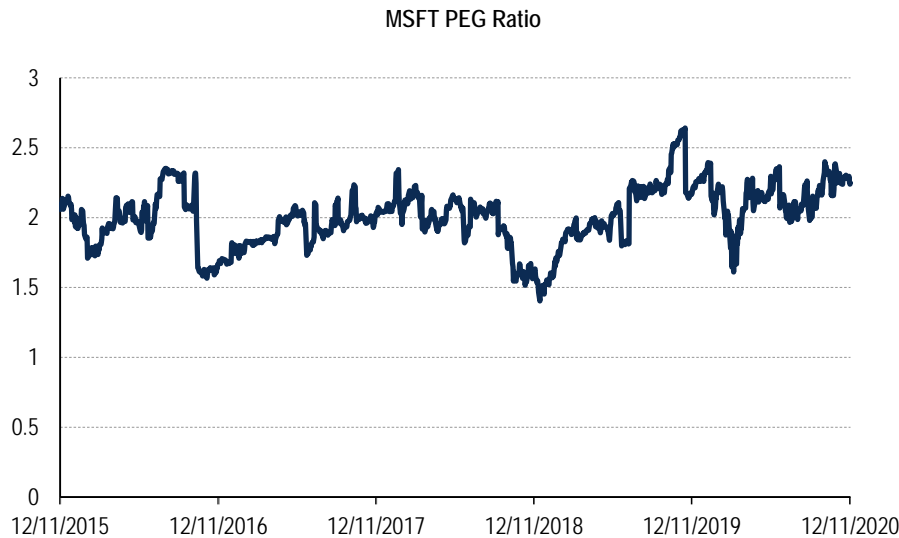
Microsoft is one of few software companies paying a dividend (\$2.24/share annual today, representing a 1% yield) and also maintains a consistent share repurchase program. Repurchases of \$40 million were authorized in September, 2019, with \$26.4 billion remaining. The repurchased program has more than offset stock based compensation dilution, with an annual diluted share count reduction of 0.2% to 0.9% in each of the last three fiscal years. The dividend and repurchase programs provide some valuation support, in our view.

Given that Microsoft revenue base is moving toward subscription with recurring annual billings, we value Microsoft shares on an EV/FCF basis. This does not account for the share repurchase program, though we are modeled for modest 1% reduction in share count in the coming years, (consistent with recent reduction). Our PO of \$256 is based on an EV/FCF multiple of 29x our C22 free cash flow estimate of \$63.5 billion, a discount to the large cap SaaS software group trading at 38x for a lower growth rate (19% y/y in C22 vs. group at 24%) though at a much larger scale. Our FCF multiple represents a PEG ratio of 2.3x, in line with historical levels (see chart below)

Exhibit 1: Comps (Large Cap SaaS Group)

Large Cap (Mkt Cap > \$15bn)	Ticker	12/15/2020		Market Cap	Enterprise Value	Revenue					EV/Free Cash Flow				FCF Growth				EV/ Revenue				Revenue Growth			
		Price				CY19A	CY19A	CY20E	CY21E	CY22E	CY19A	CY20E	CY21E	CY22E	CY19A	CY20E	CY21E	CY22E	CY19A	CY20E	CY21E	CY22E	CY19A	CY20E	CY21E	CY22E
Microsoft	MSFT	213.05		1,629,800	1,556,600	134,249	38.4x	30.7x	29.3x	23.1x	27%	25%	14%	19%	11.6x	10.5x	9.8x	8.3x	13%	11%	10%	11%	13%	11%	10%	11%
Adobe	ADBE	483.33		234,404	233,256	11,171	57.1x	46.2x	39.1x	34.3x	9%	23%	18%	14%	20.9x	18.2x	15.4x	13.5x	24%	15%	18%	14%	24%	15%	18%	14%
Salesforce.com	CRM	218.75		199,719	193,859	17,098	52.6x	45.5x	34.6x	27.4x	32%	16%	32%	26%	11.3x	9.2x	7.6x	6.4x	29%	23%	21%	19%	29%	23%	21%	19%
Oracle	ORCL	62.10		185,491	213,978	39,592	17.5x	19.2x	18.1x	18.9x	-11%	-9%	-3%	2%	5.4x	5.4x	5.4x	5.2x	0%	0%	3%	3%	0%	0%	3%	3%
SAP	SAP	122.80		146,623	159,063	30,933	53.0x	25.8x	24.0x	23.6x	-11%	105%	8%	2%	5.1x	4.8x	4.9x	4.7x	6%	7%	-1%	3%	6%	7%	-1%	3%
Shopify	SHOP	1,069.15		130,133	124,274	1,578	NM	NM	NM	NM	NM	1495%	-34%	-21%	78.7x	44.6x	35.4x	28.2x	47%	77%	26%	26%	47%	77%	26%	26%
Zoom	ZM	397.13		119,192	117,710	623	NM	NM	NM	73.2x	397%	927%	0%	37%	189.0x	45.6x	34.2x	28.2x	88%	314%	33%	21%	88%	314%	33%	21%
ServiceNow	NOW	528.20		105,086	102,663	3,460	NM	77.4x	55.4x	42.6x	67%	35%	40%	30%	29.7x	23.2x	18.5x	15.0x	33%	28%	26%	24%	33%	28%	26%	24%
Intuit	INTU	362.66		95,578	91,878	7,127	42.3x	42.8x	35.7x	30.3x	7%	-1%	20%	18%	12.9x	12.4x	10.4x	9.0x	13%	4%	19%	15%	13%	4%	19%	15%
Autodesk	ADSK	287.50		63,904	63,843	3,274	46.9x	47.5x	38.4x	27.9x	339%	-1%	24%	38%	19.5x	16.9x	14.8x	12.5x	27%	16%	14%	18%	27%	16%	14%	18%
Altesian	TEAM	235.46		60,169	57,984	1,416	NM	NM	96.3x	79.4x	42%	-3%	27%	21%	41.0x	30.7x	26.2x	21.2x	37%	33%	17%	23%	37%	33%	17%	23%
VMware	VMW	143.81		60,832	60,843	10,811	15.0x	17.6x	15.5x	13.5x	19%	-15%	14%	15%	5.6x	5.2x	4.8x	4.4x	12%	8%	8%	10%	12%	8%	8%	10%
Twilio Inc	TWLO	344.72		57,155	54,085	1,134	NM	NM	NM	NM	NM	NM	NM	NM	47.7x	32.4x	24.5x	18.7x	75%	47%	32%	31%	75%	47%	32%	31%
Workday	WDAY	221.09		56,644	54,225	3,627	87.6x	76.5x	53.8x	38.6x	53%	14%	42%	39%	14.9x	12.6x	10.8x	9.1x	29%	19%	17%	18%	29%	19%	17%	18%
DocuSign	DOCU	231.21		47,265	46,525	974	NM	NM	NM	NM	4%	387%	35%	58%	47.8x	32.7x	24.8x	19.3x	39%	46%	32%	29%	39%	46%	32%	29%
Veeva	VEEV	268.91		43,698	42,107	1,104	97.0x	84.1x	63.6x	50.1x	44%	15%	32%	27%	38.1x	29.1x	24.6x	20.6x	28%	31%	18%	19%	28%	31%	18%	19%
RingCentral	RNG	352.89		32,827	33,529	903	NM	NM	NM	NM	-39%	NM	NM	30%	37.1x	28.7x	23.4x	19.0x	34%	29%	23%	23%	34%	29%	23%	23%
Splunk	SPLK	160.04		30,078	30,252	2,359	NM	NM	NM	45.0x	NM	NM	NM	NM	12.8x	14.0x	11.7x	9.1x	31%	-8%	20%	28%	31%	-8%	20%	28%
Coupa	COUP	319.17		19,058	17,807	390	NM	NM	NM	NM	88%	-13%	114%	59%	45.7x	34.0x	27.4x	22.2x	50%	34%	24%	23%	50%	34%	24%	23%
ZoomInfo	ZI	41.17		16,631	17,069	336	NM	NM	82.4x	59.9x	NM	292%	71%	38%	50.8x	36.4x	28.6x	22.9x	NM	39%	27%	25%	NM	39%	27%	25%
Citrix Systems	CTXS	127.24		16,015	16,015	3,003	19.9x	15.8x	15.0x	13.4x	-15%	26%	5%	12%	5.3x	5.0x	4.8x	4.5x	1%	7%	4%	6%	1%	7%	4%	6%
Average							47.9x	44.1x	42.9x	37.6x	61%	184%	26%	24%	34.8x	21.5x	17.5x	14.4x	31%	37%	19%	19%	31%	37%	19%	19%

Source: BofA Global Research, company reports , Bloomberg

Exhibit 2: MSFT Historical PEG Ratios, currently MSFT is trading at PEG ratio of 2.3x

Source: BofA Global Research, Bloomberg

Discounted cash flow

Alternatively, our PO represents a 10-year DCF. We recognize that the longer-term time horizon presents a higher degree of uncertainty to assumptions, though we believe that Microsoft is positioned for share gains in a large market opportunity over the longer term.

Our model also assumes that operating margin reaches 42% over the next five years from 37% in FY20, and improves 110 basis points on average per year until reaching a terminal margin of 47%, driven by opex scale (from G&A, sales/marketing, and R&D) and gross margin scale. Our model also assumes weighted average cost of capital (WACC) of 9% and a terminal cash flow multiple of 20x.

(\$mn, except per share)	FY2018A	FY2019A	FY2020A	FY2021E	FY2022E	FY2023E	FY2024E	FY2025E	FY2026E	FY2027E	FY2028E	FY2029E	FY2030E	TV	CAGR
Revenues	\$110,360	\$125,843	\$143,410	\$157,436	\$174,016	\$194,373	\$216,429	\$240,237	\$265,462	\$289,353	\$312,501	\$334,376	\$351,095	\$365,139	9%
Growth		14.0%	14.0%	9.8%	10.5%	11.7%	11.3%	11.0%	10.5%	9.0%	8.0%	7.0%	5.0%	4.0%	
Operating Income - GAAP	\$35,058	\$42,959	\$52,959	\$60,036	\$67,894	\$77,239	\$88,297	\$100,412	\$113,610	\$126,729	\$139,992	\$153,135	\$164,303	\$170,875	12%
Operating Income Margin	31.8%	34.1%	36.9%	38.1%	39.0%	39.7%	40.8%	41.8%	42.8%	43.8%	44.8%	45.8%	46.8%	46.8%	
Cash Interest Expense	\$1,416	\$729	\$77	\$248	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Cash Taxes	\$19,903	\$4,448	\$8,755	\$9,297	\$11,542	\$13,131	\$15,011	\$18,074	\$21,586	\$25,346	\$29,398	\$32,158	\$34,504	\$35,884	
Tax rate	59.2%	10.5%	16.6%	15.5%	17.0%	17.0%	17.0%	18.0%	19.0%	20.0%	21.0%	21.0%	21.0%	21.0%	
Depreciation and Amortization	\$10,261	\$11,682	\$12,796	\$11,772	\$14,547	\$16,972	\$10,821	\$12,012	\$13,273	\$14,468	\$15,625	\$16,719	\$17,555	\$18,257	
D&A as % of revenue	9.3%	9.3%	8.9%	7.5%	8.4%	8.7%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
CapEx	(\$11,632)	(\$13,925)	(\$15,441)	(\$19,180)	(\$20,844)	(\$22,691)	(\$10,821)	(\$12,012)	(\$13,273)	(\$14,468)	(\$15,625)	(\$16,719)	(\$17,555)	(\$18,257)	
Capex as % of revenue	-10.5%	-11.1%	-10.8%	-12.2%	-12.0%	-11.7%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%	
Change in Working Capital	\$14,545	(\$596)	(\$3,695)	(\$4,368)	(\$710)	(\$1,074)	\$4,329	\$7,207	\$10,618	\$14,468	\$15,625	\$16,719	\$17,555	\$18,257	
Working Capital as % of revenue	13.2%	-0.5%	-2.6%	-2.8%	-0.4%	-0.6%	2.0%	3.0%	4.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
Other Adjustments	\$5,339	\$3,317	\$7,447	\$10,294	\$11,278	\$11,929	\$11,118	\$9,939	\$8,328	\$6,184	\$6,679	\$6,688	\$7,022	\$7,303	
Other Adjustments as % of revenue	4.8%	2.6%	5.2%	6.5%	6.5%	6.1%	5.1%	4.1%	3.1%	2.1%	2.1%	2.0%	2.0%	2.0%	
Free Cash Flow	\$32,252	\$38,260	\$45,234	\$49,010	\$60,623	\$69,244	\$88,734	\$99,484	\$110,971	\$122,035	\$132,898	\$144,383	\$154,376	\$160,551	13%
Growth		19%	18%	8%	24%	14%	28%	12%	12%	10%	9%	9%	7%	4%	
Margin	29%	30%	32%	31%	35%	36%	41%	41%	42%	42%	43%	43%	44%	44%	
Discounted FCF	\$32,252	\$38,260	\$45,234	\$45,048	\$51,218	\$53,773	\$63,338	\$65,272	\$66,923	\$67,646	\$67,713	\$67,619	\$66,455		
Cumulative cash flow	\$730,752														
Terminal Value	\$1,270,525														
Total DCF value	\$2,001,278														
Debt	\$63,552														
Cash	\$17,205														
Market Value of Equity	\$1,954,931														
Shares Outstanding	7,637														
Share Price	\$256														
Current Price	\$214														

WACC

9%

Cash Flow

20x

Multiple

Expect Azure to surpass AWS as leading cloud platform

We expect Microsoft Azure to surpass Amazon Web Services as the leading cloud platform by C26. We estimate the total market size for IaaS and PaaS is \$109.8 billion in 2020, with expectations to grow at a five year CAGR of 24%, ultimately reaching \$318bn in 2025. We estimate Azure revenue of \$25.2 billion in C20, growing 47%, representing 23% share of the \$109.8 billion market. BofA Internet analyst Justin Post forecasts AWS revenue of \$44.9 billion in C20, growing 28%. We estimate a 5 yr CAGR for Azure of 33%, reaching 33% market share in CY25, outpacing BofA estimate for AWS growth of 20%. As Azure continues to gain share with a growth outpacing that of AWS, we expect the two platforms to ultimately command similar market share by CY26. We also estimate that the Google Cloud Platform is likely to approach similar market share with AWS and Azure in the near term as well, as the market consolidates around these three hyperscalers. Microsoft has a massive sales channel of an estimated 65,000 enterprise sales, with massive datacenter reach in 61 datacenter regions today.

Exhibit 4: Market Forecast for IaaS + PaaS

IaaS + PaaS (from BofA model)	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	19-23	20-25
AWS	\$17,458	\$25,656	\$35,026	\$44,912	\$56,571	\$69,254	\$82,412	\$96,423	\$110,886	24%	20%
Microsoft Azure	\$5,748	\$10,475	\$17,163	\$25,217	\$34,460	\$46,528	\$61,751	\$79,597	\$103,476	38%	33%
Google	\$2,141	\$3,389	\$5,979	\$9,554	\$13,707	\$18,391	\$23,572	\$29,270	\$35,760	41%	30%
Salesforce	\$1,442	\$1,913	\$2,491	\$3,048	\$3,531	\$4,195	\$4,855	\$5,486	\$6,145	18%	15%
Oracle	\$1,367	\$1,706	\$2,245	\$2,650	\$3,194	\$3,865	\$4,484	\$5,111	\$5,776	19%	17%
IBM	\$1,148	\$1,556	\$2,048	\$2,625	\$3,293	\$4,064	\$4,965	\$6,042	\$7,326	25%	23%
Other	\$9,615	\$12,468	\$16,786	\$21,752	\$27,089	\$32,644	\$38,357	\$44,311	\$49,054	23%	18%
Total	\$38,918	\$57,163	\$81,737	\$109,758	\$141,845	\$178,940	\$220,396	\$266,240	\$318,422	28%	24%
y/y %	55%	47%	43%	34%	29%	26%	23%	21%	20%		
IaaS (implied)	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	19-23	20-25
AWS	\$15,162	\$21,978	\$29,533	\$37,203	\$46,292	\$56,062	\$66,009	\$76,519	\$87,133	22%	19%
Microsoft Azure	\$2,382	\$4,588	\$8,357	\$12,839	\$17,926	\$25,270	\$35,269	\$47,402	\$64,979	43%	38%
Google	\$1,150	\$2,025	\$3,861	\$6,478	\$9,485	\$12,849	\$16,575	\$20,647	\$25,304	44%	31%
Salesforce	\$374	\$420	\$627	\$852	\$989	\$1,326	\$1,620	\$1,868	\$2,136	27%	20%
Oracle	\$693	\$630	\$875	\$1,016	\$1,315	\$1,704	\$2,063	\$2,425	\$2,821	24%	23%
IBM (per IDC)	\$492	\$688	\$943	\$1,274	\$1,695	\$2,220	\$2,876	\$3,696	\$4,714	32%	30%
Other	\$577	\$997	\$1,679	\$2,610	\$3,792	\$5,223	\$6,904	\$8,862	\$9,811	42%	30%
Total (implied)	\$20,831	\$31,327	\$45,875	\$62,272	\$81,493	\$104,655	\$131,316	\$161,419	\$196,898	30%	26%
y/y %	61%	50%	46%	36%	31%	28%	25%	23%	22%		
PaaS (historical based on IDC/Gartner)	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	19-23	20-25
AWS	\$2,296	\$3,678	\$5,493	\$7,709	\$10,279	\$13,192	\$16,403	\$19,904	\$23,753	31%	25%
Microsoft Azure	\$3,366	\$5,887	\$8,806	\$12,378	\$16,534	\$21,258	\$26,482	\$32,195	\$38,497	32%	25%
Google	\$991	\$1,364	\$2,118	\$3,076	\$4,222	\$5,542	\$6,997	\$8,623	\$10,456	35%	28%
Salesforce	\$1,067	\$1,493	\$1,863	\$2,195	\$2,542	\$2,868	\$3,236	\$3,618	\$4,009	15%	13%
Oracle	\$674	\$1,076	\$1,369	\$1,634	\$1,879	\$2,161	\$2,420	\$2,686	\$2,955	15%	13%
IBM	\$656	\$867	\$1,104	\$1,351	\$1,598	\$1,843	\$2,089	\$2,346	\$2,612	17%	14%
Other	\$9,038	\$11,471	\$15,108	\$19,142	\$23,296	\$27,421	\$31,453	\$35,449	\$39,243	20%	15%
Total (historical based on IDC/Gartner)	\$18,088	\$25,837	\$35,862	\$47,486	\$60,352	\$74,286	\$89,080	\$104,821	\$121,524	26%	21%
y/y %	49%	43%	39%	32%	27%	23%	20%	18%	16%		

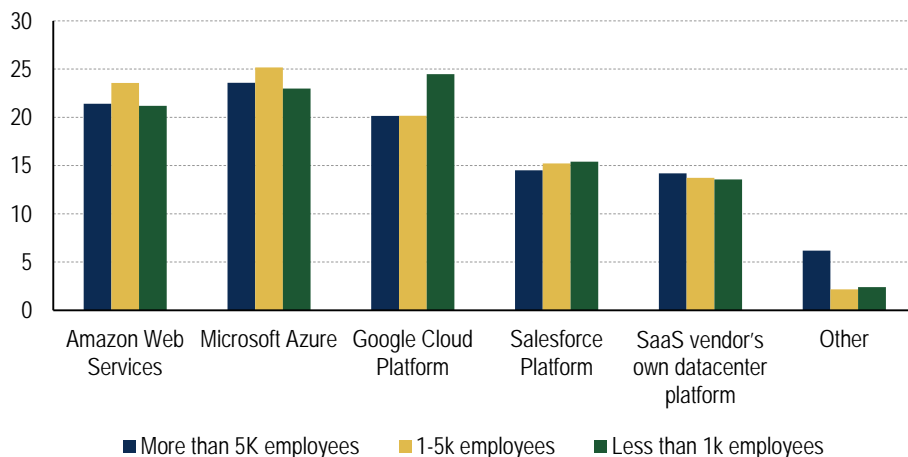
Source: BofA Global research estimates, Gartner, IDC

IaaS + PaaS Survey results show AWS and Azure as market leaders

We conducted a survey of IT decision makers in small, mid and large organizations in order to gauge IaaS/PaaS Cloud platform spending intentions and perception across the key platform vendors. In this survey, we received responses from 417 respondents across small businesses (<1,000 employees), mid sized businesses (1,000 to 5,000 employees), and enterprises (over 5,000 employees). 85% of respondents are in IT management roles, out of which 36% of respondents are in C-level positions in their respective companies. Our results show that AWS and Azure are leading the IaaS/PaaS market and are perceived to have feature parity. In summary, Azure is increasingly viewed as a top 2 choice with AWS across SaaS, IaaS and PaaS in terms of plans to move workloads to the cloud and spending intentions.

Exhibit 5: Azure and AWS are clear winners for SaaS application workloads in the cloud

What percentage of your existing SaaS application workloads are running on each cloud platform?

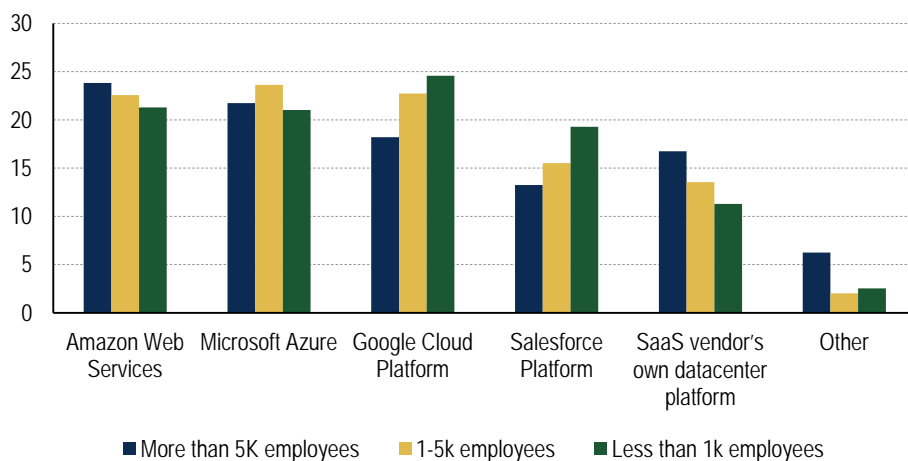


Source: BofA Global Research survey

Our survey results indicate that medium sized businesses and large enterprises are running SaaS vendors that run on Azure, followed by AWS and GCP. However, among small businesses, GCP ranked first, followed by Azure and then AWS. Salesforce is a clear fourth choice for the SaaS application workloads platform.

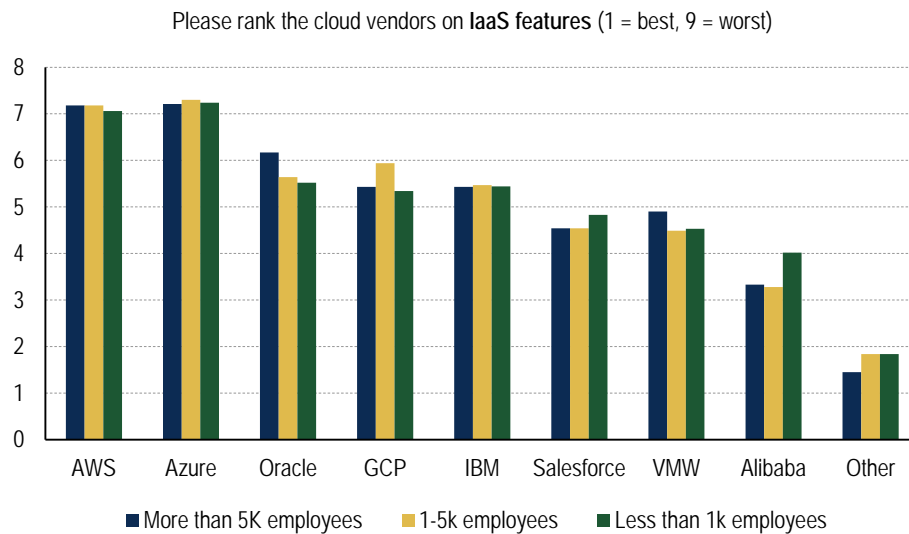
Exhibit 6: AWS and Azure are favored platforms for running future SaaS workloads

What percentage of your new SaaS application workloads that you are **planning to roll out** this year, are running on each cloud platform?



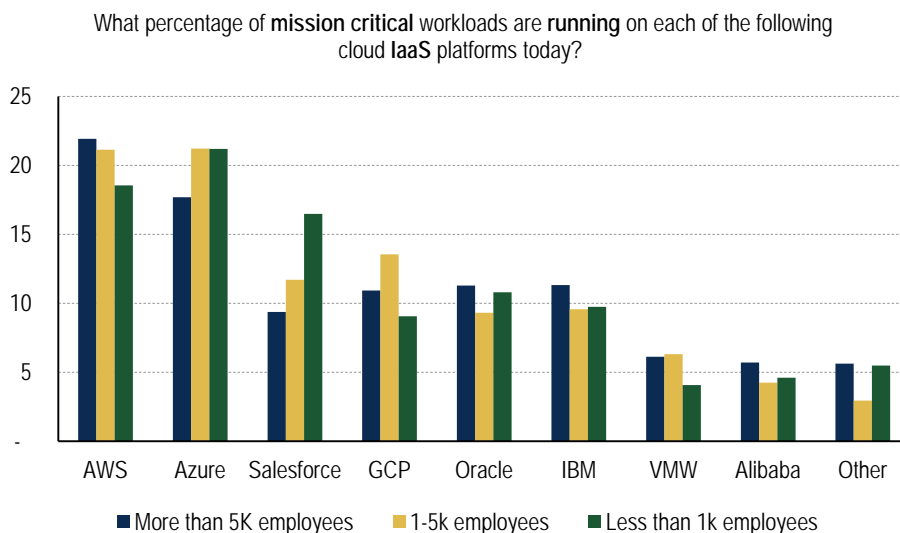
Source: BofA Global Research survey

We note that the distribution of future SaaS application running on IaaS platforms mostly aligns with the current deployments. AWS appears to be the top choice for large enterprises for future workloads, while workloads for medium sized businesses are evenly distributed amongst AWS, Azure, and GCP. We note that small businesses seem to be planning to roll out a higher percentage of SaaS application workloads on GCP compared to other vendors.

Exhibit 7: Azure ranks marginally higher than AWS based on IaaS features

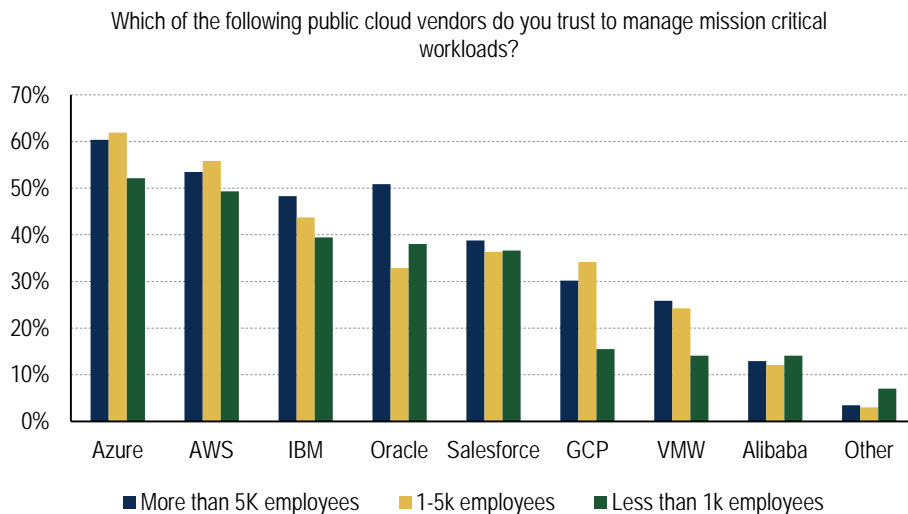
Source: BofA Global Research survey

We asked our respondents to rank cloud vendors based on their IaaS features and attributed scores as a weighted average of ranking and percentage of respondents per option. A higher score represented a better ranking. Azure and AWS were tied for first, indicating the two platforms are at feature parity (consistent with Gartner Peer Insights), with Azure slightly outranking AWS. IBM, GCP and Oracle trailed Azure and AWS.

Exhibit 8: Enterprise customers favor AWS while SMBs preferred Azure for mission critical workloads

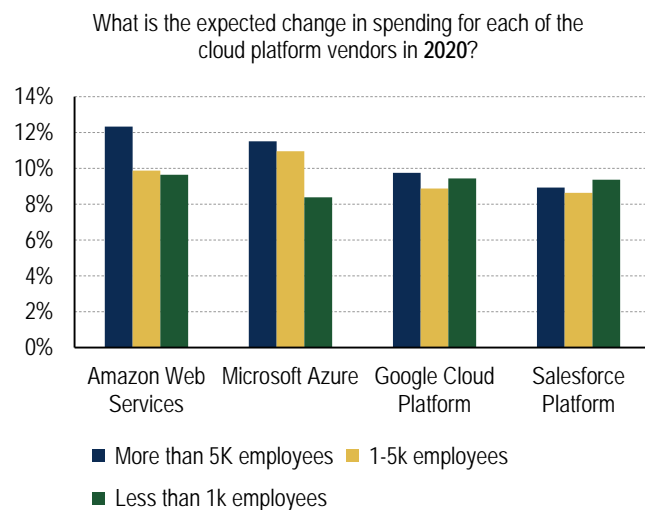
Source: BofA Global Research survey

Based on our survey results, AWS and Azure were the top choices for mission critical workloads. Large enterprises preferred AWS to Azure while small businesses prefer Azure to AWS and medium enterprises ran comparable workloads on both AWS and Azure.

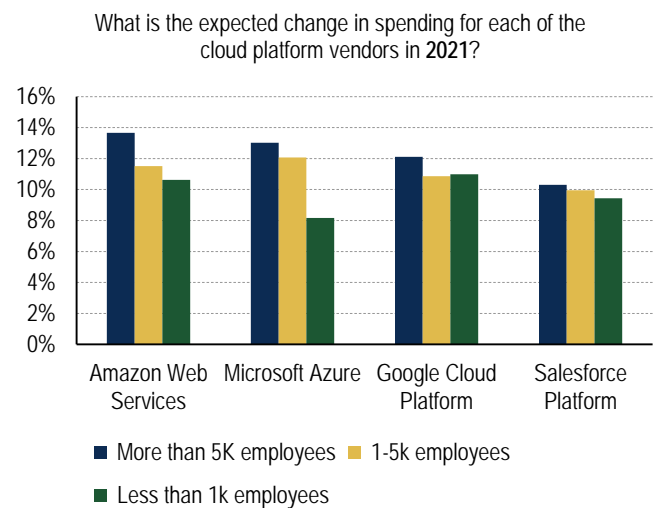
Exhibit 9: Azure is viewed as most trusted public cloud for mission critical workloads, AWS close 2nd

Source: BofA Global Research survey

Across large enterprises and SMBs, Azure emerged as the most trusted public cloud platform to manage mission critical workloads. AWS came in as a close second. GCP ranked significantly lower than AWS, Azure, Oracle, IBM and Salesforce, especially in the small businesses segment. Oracle and IBM were also perceived positively in the large enterprise segment.

Exhibit 10: Respondents expect 2020 spending for cloud platforms to increase 8-12% y/y

Source: BofA Global Research survey

Exhibit 11: Cloud platform spending in 2021 expected to grow at similar levels compared to 2020

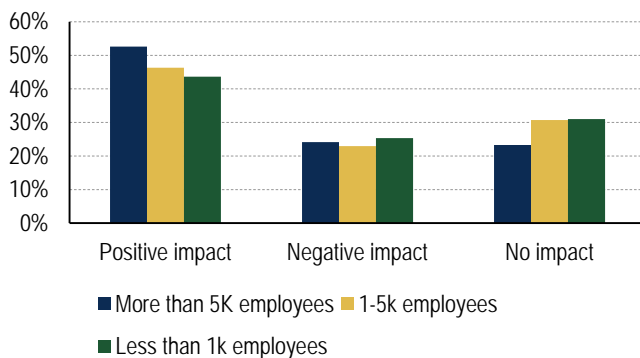
Source: BofA Global Research survey

Survey respondents were asked about spending intentions for cloud platforms in 2020 and 2021. We took a weighted average of responses to summarize findings. In 2020, organizations expected an average spending increase of 8-12%. Across the small, mid and large enterprise segment, spending intentions for Azure and AWS were roughly similar.

For 2021, we found that spending intentions are expected to stay in a similar, if not higher, range, with average growth in the 8-14% range. Respondents (Regardless of business size) expect spending to increase by an incremental 1-2% for all cloud platform vendors, though expectations for Azure and Salesforce spend by small businesses is expected to remain at 8% and 9% for both 2020 and 2021.

Exhibit 12: The pandemic expected to have a positive impact on cloud spend

What impact is the pandemic having on your plans to migrate workloads to the public cloud in 2020?



Source: BofA Global Research survey

According to our survey, large enterprises saw the most positive impact, while small businesses saw the greatest amount of negative impact. 53% of large enterprise respondents believe that the pandemic had a positive impact on their plans to migrate workloads to the public cloud in 2020. 24% thought the pandemic had a negative impact and 23% thought it had no impact. Meanwhile, 25% of small businesses saw a negative impact, the highest compared to medium/large enterprises.

Survey respondents believe that the pandemic will have a greater positive impact on cloud migration in 2021. 58% of large enterprises believe the pandemic is having a positive impact on cloud migration in 2021, which compares to 53% in 2020. Small and medium businesses follow a similar trend with results indicating higher positive impact in 2021 vs. 2020 respectively. In both small and medium businesses, the negative impact percentage fell by ~8%. Overall, the results indicate that the pandemic had a positive impact to workflow migration to the public cloud in 2020, and will have a greater positive impact in 2021.

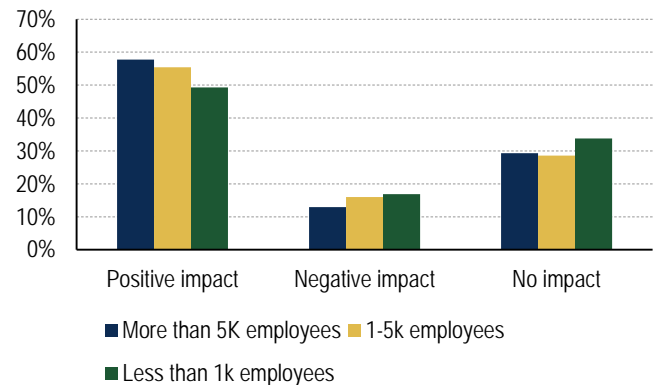
Partner feedback suggests healthy Azure growth

We also spoke with a dozen key Microsoft reseller and integrator partners. Feedback from the discussions suggests healthy growth in the Azure business, with growth expected to sustain at heightened rates for the next several years. Growth is driven by increasing perception that Azure is the best option for Enterprises for a number of reasons. Microsoft's presence in the enterprise is already well established and has high goodwill with IT departments and CIOs, given a strong price to value perception of the Microsoft stack in general. As a result, adoption of Azure is a natural extension of the existing relationship with Microsoft given its trusted nature, seamless integration with other Microsoft applications, and better economics when bundled together with existing contracts. Some partners have noted especially high win rates against AWS if the organization has an existing relationship with Azure. Also, partner feedback suggests competitive friction between Amazon's retail business and AWS which is driving many enterprises (especially in retail and CPG) to migrate workloads off of AWS and onto Azure.

Partners note that AWS often competes with Azure on pricing, given Microsoft is typically not flexible on discounting. Partners also see AWS still outperforming Azure if the organization chooses to run a hybrid environment. However, in general, partners expect healthy Azure growth driven by continual migration of workloads onto Azure, as well as the development of new applications by Microsoft and by third parties on Azure which will drive Azure consumption. Looking at Gartner peer reviews, we see that the

Exhibit 13: 2021 expectation on cloud spend further improves from 2020

What impact is the pandemic having on your plans to migrate workloads to the public cloud in 2021?



Source: BofA Global Research survey

leading cloud vendors (AWS, Google Cloud Platform, and Azure) have comparable features and ratings, with a very narrow capability gap. We note that AWS has the most ratings overall though this can be attributed to its position as an early market leader in public cloud.

Exhibit 14: Gartner Peer Reviews suggest very comparable features between the three major cloud providers

	AWS	GCP	Azure
Overall Peer Rating	4.6 (442 Reviews)	4.6 (190 Reviews)	4.5 (291 Reviews)
Ratings Distribution			
5 star	59%	61%	55%
4 star	39%	36%	42%
3 star	2%	4%	3%
2 star	0%	0%	0%
1 star	0%	0%	0%
Willingness to recommend			
Product Capabilities			
Overall Capability Score	4.7 (442 Reviews)	4.6 (190 Reviews)	4.6 (291 Reviews)
Compute	4.6 (239 Reviews)	4.7 (81 Reviews)	4.5 (144 Reviews)
User Management	4.5 (433 Reviews)	4.5 (180 Reviews)	4.6 (279 Reviews)
Network	4.6 (238 Reviews)	4.6 (83 Reviews)	4.5 (141 Reviews)
Security and Compliance	4.7 (433 Reviews)	4.7 (182 Reviews)	4.6 (281 Reviews)
Scaling	4.6 (238 Reviews)	4.6 (84 Reviews)	4.5 (142 Reviews)
Developer Services	4.5 (430 Reviews)	4.5 (180 Reviews)	4.5 (280 Reviews)
DevOps Enablement	4.5 (233 Reviews)	4.4 (80 Reviews)	4.5 (137 Reviews)
Management Tools	4.5 (238 Reviews)	4.7 (84 Reviews)	4.5 (144 Reviews)
Enterprise Integration	4.5 (429 Reviews)	4.4 (181 Reviews)	4.5 (279 Reviews)
Customer Experience			
Evaluation & Contracting	4.4 (442 Reviews)	4.5 (190 Reviews)	4.5 (291 Reviews)
Pricing Flexibility	4.3 (344 Reviews)	4.5 (149 Reviews)	4.3 (229 Reviews)
Integration & Deployment	4.6 (442 Reviews)	4.6 (190 Reviews)	4.5 (291 Reviews)
Ease of Deployment	4.5 (363 Reviews)	4.7 (162 Reviews)	4.5 (250 Reviews)
Service & Support	4.6 (442 Reviews)	4.6 (190 Reviews)	4.5 (291 Reviews)
Timeliness of Vendor Response	4.5 (364 Reviews)	4.6 (164 Reviews)	4.5 (252 Reviews)
Quality of Technical Support	4.5 (363 Reviews)	4.6 (165 Reviews)	4.5 (252 Reviews)

Source: Gartner

Exhibit 15: Key takeaways from Gartner peer commentary

Key Takeaways from Gartner		
AWS	GCP	AZURE
<ul style="list-style-type: none"> - Early leader in public cloud - Offers best-of-breed AI/ML, database and serverless deployments - SageMaker provides AWS major capabilities in the ML stack with expansive uses cases - Pay-as-you-go basis but everything is chargeable - Often reduces overall cost of project - Quick to learn and easy to implement - Could improve ETL based workloads in the cloud - competitors offer stronger features - Strong user community and service expertise - Great customer service and response time 	<ul style="list-style-type: none"> - Clear 3rd after AWS and Azure, but seeing uplift from COVID-19 and Google Meet coupled with new strategy to manage multi-cloud workloads - Combining Gsuite and GCP sales efforts - Console provides pro-active recommendations to save costs in the long run - Great free tier available - Per minute usage billing structure - Flexibility in configuring roles though this can increase complexity - Fewer 3rd cloud apps vs AWS but more native data services - Wide range of integration opportunities with different platforms 	<ul style="list-style-type: none"> - Benefits from SaaS footprint with revenue derived from O365, Dynamics, etc. - Trusted with formidable history in enterprise - Leader in hybrid deployments due to valuable partnerships with server vendors to build integrated stacks for hybrid and private cloud - Helpful tools like Azure Migration tool and Azure Site Recovery - Robust natively built security product to protect enterprise cloud infrastructure - Good and intuitive interface but cost management can be complicated
Look out for:	Look out for:	Look out for:
<ul style="list-style-type: none"> - Momentum of AWS serverless instances - Navigation in multi-cloud deployments - Proliferation of database, access points and data lake moves with Redshift - Healthcare vertical battle with GCP and Azure, retailers are leaning towards Azure and GCP. 	<ul style="list-style-type: none"> - Growth in partnerships with Salesforce, Informatica, VMware and SAP - Building out a team with enterprise software veterans - Ongoing effort to forge more relationships with hybrid cloud players - Major acquisitions to gain share 	<ul style="list-style-type: none"> - Enterprises move towards multi-cloud and look for one preferred cloud vendor; Microsoft has a strong chance as it is a known commodity that can be plugged into CRM, SAP, ORCL, ADBE and pairs well with O365. - Upsell from Teams, O365, Dynamics and Azure.

Source: Gartner, BofA Global Research

Base Case Azure Model

In order to put our findings into perspective, we conducted a detailed base/upside case for Azure revenue growth and EPS contribution.

In our base case model for Azure, we forecast FY21E revenue of \$29.5 billion (+39% y/y) which represents market share of 23.7% for the estimated IaaS + PaaS market of \$124.3 billion in FY21. If we assume share gains of 1.2% to 2% in each of the next 3 years, consistent with recent levels, we arrive at a FY24E revenue for Azure of \$70.4 billion, growing at a four year CAGR of 35% which represents 29% of the total market opportunity of \$241.2 billion. We estimate the IaaS + PaaS segment of Azure could reach gross margin of 59% in FY24E (approaching estimated AWS levels), with the overall gross margin for Azure reaching 64%. We also assume the Azure operating margin profile is in line with the rest of the business (operating expense represents 27% of total revenue). With these assumptions, we believe Azure could contribute \$2.90 to non-GAAP EPS in FY24E.

Exhibit 16: Base Case Azure Revenue Model

\$ Millions	YEAR FY16A	YEAR FY17A	YEAR FY18A	YEAR FY19A	Sep. 1Q20A	Dec. 2Q20A	Mar. 3Q20A	June 4Q20A	YEAR FY20A	Sep. 1Q21A	Dec. 2Q21E	Mar. 3Q21E	June 4Q21E	YEAR FY21E	YEAR FY22E	YEAR FY23E	YEAR FY24E
Azure Revenue Build																	
Total Azure Revenue (PBI + IaaS + PaaS)	\$2,083	\$4,138	\$7,951	\$13,624	\$4,487	\$4,897	\$5,680	\$6,183	\$21,248	\$6,641	\$6,713	\$7,786	\$8,359	\$29,499	\$40,022	\$53,657	\$70,381
y/y KPI		98.6%	92.1%	71.4%	59.0%	62.0%	59.0%	47.0%	56.0%	48.0%	37.1%	37.1%	35.2%	38.8%	35.7%	34.1%	31.2%
Power BI revenue			500	625	156	180	208	238	781	195	225	260	297	977	1,221	1,526	1,907
y/y				25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
IaaS + PaaS revenue	\$1,655	\$2,881	\$5,346	\$9,772	\$3,401	\$3,701	\$4,360	\$4,696	\$16,159	\$5,230	\$5,219	\$6,148	\$6,527	\$23,125	\$31,820	\$43,484	\$58,140
y/y			86%	83%	67%	74%	69%	55%	65%	54%	41.0%	41%	39%	43%	38%	37%	34%
IaaS + PaaS % of Intelligent cloud		11%	17%	25%	31%	31%	35%	35%	33%	40%	38%	42%	41%	41%	47%	53%	59%
EMS																	
# of customers	33,000	65,000	86,500	106,500	111,500	116,500	121,500	126,500	126,500	131,500	136,500	141,500	146,500	146,500	166,500	186,500	206,500
y/y		97%	33%	23%	22%	21%	20%	19%	19%	18%	17%	16%	16%	16%	14%	12%	11%
Net new adds	16,000	32,000	21,500	20,000	5,000	5,000	5,000	5,000	20,000	5,000	5,000	5,000	5,000	20,000	20,000	20,000	20,000
# of users per EMS customer	559	793	858	1,002	1,077	1,090	1,103	1,162	1,108	1,156	1,126	1,136	1,194	1,153	1,186	1,188	1,162
y/y					12%	12%	12%	7%		7%	3%	3%	3%				
Installed base (# of users in mn)	\$21	53	82	115.6	120.0	127.0	134.0	147.0	147.0	152.0	153.7	160.8	174.9	174.9	201.2	221.3	234.6
y/y			55%	41%	36%	35%	34%	27%	27%	27%	21%	20.0%	19.0%	19%	15%	10%	6%
x ASP	\$5.06	\$5.94	\$6.42	\$6.98	\$7.75	\$8.00	\$8.30	\$8.50	\$7.33	\$8.00	\$8.26	\$8.57	\$8.77	\$7.71	\$8.68	\$9.77	\$11.01
y/y		18%	8%	9%	3%	0%	0%	0%	5%	3%	3%	3%	3%	5%	12%	13%	13%
EMS rev	\$428	\$1,258	\$2,105	\$3,227	\$930	\$1,016	\$1,112	\$1,250	\$4,308	\$1,216	\$1,269	\$1,378	\$1,535	\$5,398	\$6,981	\$8,647	\$10,334
y/y		194%	67%	53%	41%	35%	34%	27%	33%	31%	25%	24%	23%	25%	29%	24%	20%
EMS % of Azure		30%	26%	24%	21%	21%	20%	20%	20%	18%	19%	18%	18%	18%	17%	16%	15%
EMS % of Intelligent cloud		5%	7%	8%	9%	9%	9%	9%	9%	9%	9%	9%	10%	9%	10%	11%	10%

Source: BofA Global Research estimates, company filings

Exhibit 17: Base Case Azure EPS model

\$ Millions	YEAR FY19A	Sep. 1Q20A	Dec. 2Q20A	Mar. 3Q20A	June 4Q20A	YEAR FY20A	Sep. 1Q21A	Dec. 2Q21E	Mar. 3Q21E	June 4Q21E	YEAR FY21E	YEAR FY22E	YEAR FY23E	YEAR FY24E
TAM	68,943	21,371	23,322	22,847	26,898	94,438	28,697	31,317	29,526	34,762	124,302	158,659	197,731	241,176
y/y	46%	47%	47%	34%	34%	37%	34%	34%	29%	29%	32%	28%	25%	22%
Power BI	625	156	180	208	238	781	195	225	260	297	977	1,221	1,526	1,907
y/y		25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
EMS	3,227	930	1,016	1,112	1,250	4,308	1,216	1,269	1,378	1,535	5,398	6,981	8,647	10,334
y/y		41%	35%	34%	27%	33%	31%	25%	24%	23%	25%	29%	24%	20%
IaaS + PaaS	9,772	3,401	3,701	4,360	4,696	16,159	5,230	5,219	6,148	6,527	23,125	31,820	43,484	58,140
y/y		67%	74%	69%	55%	65%	54%	41%	41%	39%	43%	38%	37%	34%
Total Azure Revenue	13,624	4,487	4,897	5,680	6,183	21,248	6,641	6,713	7,786	8,359	29,499	40,022	53,657	70,381
y/y		59%	62%	59%	47%	56%	48%	37%	37%	35%	39%	36%	34%	31%
as % of Market	19.8%	21.0%	21.0%	21.0%	21.0%	22.5%	23.1%	21.4%	26.4%	24.0%	23.7%	25.2%	27.1%	29.2%
Gross Profit														
Power BI	534	135	155	179	204	672	168	194	225	257	843	1,064	1,345	1,701
EMS	2,755	802	874	956	1,075	3,707	1,046	1,095	1,192	1,328	4,660	6,084	7,622	9,211
IaaS + PaaS	2,431	1,172	1,371	1,819	1,813	6,175	2,505	2,542	3,044	3,284	11,374	16,668	24,166	34,169
Total Gross Profit	5,719	2,109	2,400	2,954	3,091	10,554	3,719	3,830	4,460	4,868	16,877	23,816	33,134	45,081
Gross Margin Analysis														
Power BI Margin	85%	86%	86%	86%	86%	86%	86%	86%	87%	87%	86%	87%	88%	89%
EMS	85%	86%	86%	86%	86%	86%	86%	86%	87%	87%	86%	87%	88%	89%
IaaS + PaaS	25%	34%	37%	42%	39%	38%	48%	49%	50%	50%	49%	52%	56%	59%
Total Gross Margin	42%	47%	49%	52%	50%	50%	56%	57%	57%	58%	57%	60%	62%	64%
Operating Expense	4,342	1,353	1,414	1,796	1,997	6,560	1,837	1,929	2,392	2,595	8,753	11,631	15,172	19,259
as % of revenue	32%	30%	29%	32%	32%	31%	28%	29%	31%	31%	30%	29%	28%	27%
Operating Income (Loss)	1,378	757	985	1,158	1,094	3,994	1,882	1,901	2,068	2,273	8,124	12,185	17,962	25,822
Operating Margin	10%	17%	20%	20%	18%	19%	28%	28%	27%	27%	28%	30%	33%	37%
Tax (Pro forma)	218	120	170	189	181	660	260	304	331	364	1,259	2,071	3,053	4,390
Tax Rate	16%	16%	17%	16%	17%	17%	14%	16%	16%	16%	15%	17%	17%	17%
Net Income	1,160	637	815	970	913	3,334	1,622	1,597	1,737	1,909	6,865	10,113	14,908	21,432
SHO	7,752	7,710	7,691	7,675	7,650	7,682	7,637	7,618	7,599	7,580	7,608	7,533	7,458	7,383
EPS	\$0.15	\$0.08	\$0.11	\$0.13	\$0.12	\$0.43	\$0.21	\$0.21	\$0.23	\$0.25	\$0.90	\$1.34	\$2.00	\$2.90

Source: BofA Global Research estimates, company filings

Upside Case Azure Model

In our upside case model for Azure, we assume share gains of 1.6% to 2.6% in each of the next 3 years. We arrive at a FY24E revenue of \$76.9 billion (+42% y/y) which represents market share of 28.4% for the estimated IaaS + PaaS market of \$106.3 billion. By FY24E, we estimate Azure revenue could be \$76.9 billion, growing at a four year CAGR of 38%. This represents 31% of the total market opportunity of \$247.7 billion. We estimate the gross margin profile is consistent with our base case assumptions (IaaS + PaaS gross margin of 59% in FY24E, overall gross margin for Azure of 64%). We also assume the Azure operating margin profile is in line with the rest of the business (operating expense represents 27% of total revenue). With these assumptions, we believe Azure could contribute \$3.17 to non-GAAP EPS in FY24E in our upside case.

Exhibit 18: Upside Case Azure EPS model

\$ Millions	YEAR FY19A	Sep. 1Q20A	Dec. 2Q20A	Mar. 3Q20A	June 4Q20A	YEAR FY20A	Sep. 1Q21A	Dec. 2Q21E	Mar. 3Q21E	June 4Q21E	YEAR FY21E	YEAR FY22E	YEAR FY23E	YEAR FY24E
TAM	68,943	21,371	23,322	22,847	26,898	94,438	28,697	31,513	29,753	35,009	124,972	160,475	201,422	247,741
y/y	46%	37%	37%	37%	37%	37%	34%	35%	30%	30%	32%	28%	26%	23%
Power BI	625	156	180	208	238	781	195	225	260	297	977	1,221	1,526	1,907
y/y		25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
EMS	3,227	930	1,016	1,112	1,250	4,308	1,216	1,269	1,378	1,535	5,398	6,981	8,647	10,334
y/y		41%	35%	34%	27%	33%	31%	25%	24%	23%	25%	29%	24%	20%
IaaS + PaaS	9,772	3,401	3,701	4,360	4,696	16,159	5,230	5,415	6,375	6,775	23,795	33,636	47,175	64,705
y/y		67%	74%	69%	55%	65%	54%	46%	46%	44%	47%	41%	40%	37%
Total Azure Revenue	13,624	4,487	4,897	5,680	6,183	21,248	6,641	6,909	8,013	8,606	30,169	41,838	57,348	76,947
y/y		59%	62%	59%	47%	56%	48%	41.1%	41.1%	39.2%	42.0%	38.7%	37.1%	34.2%
as % of Market	19.8%	21.0%	21.0%	24.9%	23.0%	22.5%	23.1%	21.9%	26.9%	24.6%	24.1%	26.1%	28.5%	31.1%
Gross Profit														
Power BI	534	135	155	179	204	672	168	194	225	257	843	1,064	1,345	1,701
EMS	2,755	802	874	956	1,075	3,707	1,046	1,095	1,192	1,328	4,660	6,084	7,622	9,211
IaaS + PaaS	2,431	1,172	1,371	1,819	1,813	6,175	2,505	2,637	3,156	3,408	11,707	17,623	26,223	38,207
Total Gross Profit	5,719	2,109	2,400	2,954	3,091	10,554	3,719	3,926	4,573	4,992	17,210	24,771	35,190	49,120
Gross Margin Analysis														
Power BI Margin	85%	86%	86%	86%	86%	86%	86%	86%	87%	87%	86%	87%	88%	89%
EMS	85%	86%	86%	86%	86%	86%	86%	86%	87%	87%	86%	87%	88%	89%
IaaS + PaaS	25%	34%	37%	42%	39%	38%	48%	49%	50%	50%	49%	52%	56%	59%
Total Gross Margin	42%	47%	49%	52%	50%	50%	56%	57%	57%	58%	57%	59%	61%	64%
Operating Expense	4,342	1,353	1,414	1,796	1,997	6,560	1,837	1,969	2,444	2,652	8,902	12,036	15,998	20,897
as % of revenue	32%	30%	29%	32%	32%	31%	28%	29%	31%	31%	30%	29%	28%	27%
Operating Income (Loss)	1,378	757	985	1,158	1,094	3,994	1,882	1,957	2,128	2,340	8,308	12,735	19,192	28,223
Operating Margin	10%	17%	20%	20%	18%	19%	28%	28%	27%	27%	28%	30%	33%	37%
Tax (Pro forma)	218	120	170	189	181	660	260	313	341	374	1,288	2,165	3,263	4,798
Tax Rate	16%	16%	17%	16%	17%	17%	14%	16%	16%	16%	16%	17%	17%	17%
Net Income	1,160	637	815	970	913	3,334	1,622	1,643	1,788	1,966	7,019	10,570	15,929	23,425
SHO	7,752	7,710	7,691	7,675	7,650	7,682	7,637	7,618	7,599	7,580	7,608	7,533	7,458	7,383
EPS	\$0.15	\$0.08	\$0.11	\$0.13	\$0.12	\$0.43	\$0.21	\$0.22	\$0.24	\$0.26	\$0.92	\$1.40	\$2.14	\$3.17

Source: BofA Global Research estimates, company filings

Finally, we note that Microsoft has a large installed base of annuity customers who are running the Windows Server family of infrastructure offerings on premise (Windows Server, SQL Server, Share Point, etc.). LT Annuity generated an estimated revenue of \$19.6 billion in FY20, and we believe a large portion of these workloads/customers will gradually migrate to Azure. We estimate that the LT Annuity business will hold relatively flat in the near term given the amount of workloads that are still running in a hybrid cloud setting. However, over time as organizations migrate more complicated workloads onto Azure and begin to leverage AI/ML capabilities on Azure, we can see a steadier decline in LT Annuity revenue growth.

Teams adoption driving Office 365 premium mix shift

We believe continued adoption of Teams and premium Microsoft Power app adoption is likely to drive sustained Office 365 premium mix shift to the O365 E3 and E5 SKUs. Office 365 E5 provides organizations with advanced Teams features including outbound call features and advanced phone system and audio conferencing tools. Feedback from partners suggests the adoption of Microsoft Teams has been the key contributor for organizations to accelerate their move from the legacy on premise Office deployment to Office 365. In addition, partners cite that organizations are increasingly opting for the higher priced SKU's due to the additional Teams features. Office 365 E3 has now replaced E1 as the most popular plan, though partners have noted a stronger push for E5 given security and compliance capabilities. Partner feedback suggests this continued

momentum for the migration off of the on prem model should sustain for at least the next two to three years.

Exhibit 19: Feature comparison O365 E1 vs. E3 vs. E5

	Office 365 E1	Office 365 E3	Office 365 E5
	Business services such as email, file storage and sharing, Office for web, meetings, and IM. Office apps not included	All features in Microsoft 365 apps and O365 E1 plus some security and compliance	All features of O365 E3 plus advanced security, analytics, and voice
	\$8/user/month	\$20/user/month	\$35/user/month
Office Apps (Powerpoint, Word, Excel, OneNote, Access)		●	●
Email and Calendar (Outlook, Exchange)	●	●	●
Meetings and Voice (Teams)			●
Social and Intranet (SharePoint, Yammer)	●	●	●
Files and Content (OneDrive, Stream, Sway)	●	●	●
Work Management (Power Apps, Power Automate, Power Virtual, Forms)	●	●	●
Advanced Analytics (Power BI Pro, MyAnalytics)			●
Device and App Management		●	●
Identity and Access Management	●	●	●
Threat Protection	○	○	●
Information Protection	○		●
Advanced Compliance	○		●

Source: Company Website

In our detailed model for Business Office revenue, we model for the four main revenue components: Commercial O365, Microsoft Dynamics, multi year commercial license annuity revenue, and business transactional revenue. In our Commercial O365 revenue, we assume flat user ASP at \$183/user/year with a 52% enterprise discount rate. We estimate user growth to be between 8% and 13% for the next three years decelerating from strong recent levels of 15% to 20%, ultimately reaching an ending user count of 450 million subscribers by FY24E, from 302 million in FY20. Today, the 302 million user count of Office 365 represents 55% of McKinsey's estimate of 548 million knowledge workers worldwide. We estimate the knowledge worker base is growing 3% y/y (in line with global GDP), ultimately reaching 611 million by FY24. By FY24, the penetration of the Office suite would reach 74%. With these assumptions, we estimate Commercial O365 revenue could reach \$38.1 billion by FY24E, up from \$23.8bn in FY20. With the continual shift towards premium SKUs, there is the opportunity for upside to our revenue estimates as ASP increases.

Exhibit 20: Detailed Business Office Revenue Build

Business Office 365															
\$ Millions	YEAR FY18A	YEAR FY19A	Sep. 1Q20A	Dec. 2Q20A	Mar. 3Q20A	June 4Q20A	YEAR FY20A	Sep. 1Q21A	Dec. 2Q21E	Mar. 3Q21E	June 4Q21E	YEAR FY21E	YEAR FY22E	YEAR FY23E	YEAR FY24E
Business Transactional / Non-Annuity	\$3,562	\$3,230	\$896	\$599	\$746	\$633	\$2,876	\$717	\$450	\$597	\$507	\$2,271	\$1,817	\$1,544	\$1,359
y/y	10.1%	(9.3%)	0.0%	0.0%	(10.0%)	(30.0%)	(11.0%)	(20.0%)	(25.0%)	(20.0%)	(20.0%)	(21.0%)	(20.0%)	(15.0%)	(12.0%)
% of overall license revenue	13.2%		11.0%	7.2%	8.9%	6.9%		7.9%	4.8%	6.7%	5.2%				
\$ Annuity to Commercial License (Multi-Year Licenses)	\$8,598	\$7,398	\$1,621	\$1,932	\$1,602	\$1,767	\$6,921	\$1,540	\$1,796	\$961	\$1,678	\$5,976	\$5,259	\$4,838	\$4,257
% of overall license revenue															
% to Commercial Licensing	36.8%	27.4%	22.4%	24.9%	20.9%	20.7%	22.2%	18.5%	20.3%	11.5%	18.3%	17.2%	13.9%	11.8%	9.8%
Y/Y %	-17%	-14%	-11%	-4%	-10%	-1%	-6%	-5%	-7%	-40%	-5%	-14%	-12%	-8%	-12%
\$ Annuity to Commercial Other (O365, Dynamics CRM Online)															
Commercial O365 Revenue	14,524	19,253	5,513	5,727	5,946	6,635	23,822	6,671	6,933	7,197	7,299	28,100	31,753	35,245	38,065
y/y	41.6%	32.6%	25.0%	27.0%	25.0%	19.0%	23.7%	21.0%	21.0%	21.0%	10.0%	18.0%	13.0%	11.0%	8.0%
Dynamics 365	213	313	93	104	117	130	444	128	139	166	173	606	803	1,042	1,320
y/y	65.0%	47.1%	41.0%	42.0%	47.0%	38.0%	41.9%	38.0%	34.0%	42.0%	33.0%	36.7%	32.5%	29.6%	26.8%
Total \$ Annuity to Commercial Other	14,737	19,566	5,606	5,831	6,063	6,765	24,266	6,799	7,071	7,364	7,472	28,706	32,556	36,287	39,385
% to Commercial Other	63.2%	72.6%	77.6%	75.1%	79.1%	79.3%	77.8%	81.5%	79.7%	88.5%	81.7%	82.8%	86.1%	88.2%	90.2%
Y/Y %	41.9%	32.8%	25.2%	27.2%	25.4%	19.3%	24.0%	21.3%	21.3%	21.4%	10.4%	18.3%	13.4%	11.5%	8.5%
Annuity	\$23,335	\$26,964	\$7,227	\$7,763	\$7,665	\$8,532	\$31,187	\$8,339	\$8,868	\$8,325	\$9,150	\$34,681	\$37,815	\$41,125	\$43,643
y/y	12.7%	15.5%	14.8%	17.7%	15.8%	14.5%	15.7%	15.4%	14.2%	8.6%	7.2%	11.2%	9.0%	8.8%	6.1%
% of overall license revenue	86.8%	89.3%	89.0%	92.8%	91.1%	93.1%	91.6%	92.1%	95.2%	93.3%	94.8%	93.9%	95.4%	96.4%	97.0%
KPI	88.0%		91.0%	89.0%	92.0%	94.0%		93.0%							
Business (Commercial Office, Office 365, and Other)	\$26,897	\$30,194	\$8,123	\$8,362	\$8,412	\$9,165	\$34,063	\$9,056	\$9,317	\$8,922	\$9,657	\$36,952	\$39,631	\$42,669	\$45,001
y/y	10.9%	12.3%	12.9%	16.2%	13.0%	9.6%	12.8%	11.5%	11.4%	6.1%	5.4%	8.5%	7.2%	7.7%	5.5%
Commercial Office Revenue Growth Y/Y% KPI			13.0%	16.0%	13.0%	5.0%		9.0%							
Commercial Office + Dynamics (Commercial Licensing ex. O365)	12,160	10,628	2,517	2,531	2,348	2,400	9,797	2,257	2,246	1,558	2,185	8,246	7,075	6,382	5,616
y/y	-12%	-13%	-7%	-3%	-10%	-11%	-8%	-10%	-11%	-34%	-9%	-16%	-14%	-10%	-12%
Average ASP		183	183	183	183	183	183	183	183	183	183	183	183	183	183
% Share of O365 Subs that are New			20.0%	20.0%	20.0%	20.0%		20.0%	20.0%	20.0%	20.0%				
Business O365 Subs		213,613	262,745	264,241	274,514	285,000	262,745	302,156	303,773	315,691	327,750	302,156	332,372	375,580	416,894
Beginning Business O365 Subs (K)		56,757	6,452	13,503	13,879	19,425	53,259	7,336	15,610	15,961	10,252	49,160	62,621	64,324	60,682
Converted Perpetual Licenses to O365 Subs (K)		14,189	1,613	3,376	3,470	4,856	13,315	1,834	3,302	3,990	2,563	12,290	15,655	16,081	15,170
New Business O365 Subs (K)		70,946	8,065	16,879	17,349	24,281	66,574	9,171	19,512	19,952	12,816	61,450	78,276	80,406	75,852
Add: Gross Business O365 Subs Added (K)		(21,815)	(6,569)	(6,606)	(6,863)	(7,125)	(27,162)	(7,554)	(7,594)	(7,892)	(8,194)	(31,234)	(35,068)	(39,092)	(42,501)
Less: Churn (K)		9.8%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Annual Churn Rate (%)		262,745	264,241	274,514	285,000	302,156	302,156	303,773	315,691	327,750	332,372	332,372	375,580	416,894	450,246
Ending Business O365 Subs (K)		21.4%	21.4%	20.4%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	10.0%	10%	13%	11%	8%
y/y		23%	21%	21%	20%	15%	15%	15%	15.0%	15.0%	10.0%	10%	13%	11%	8%
KPI y/y															
Business O365 Annual Average ASP (\$)		\$81.3	\$83.5	\$83.5	\$83.5	\$87.8	\$84.6	\$87.8	\$87.8	\$87.8	\$87.8	\$87.8	\$87.8	\$87.8	\$87.8
y/y		3%	3%	5%	4%	3%	4%	5%	5%	5%	0%	4%	0%	0%	0%
Discount rate		44%	54%	54%	54%	52%	46%	52%	52%	52%	52%	52%	52%	52%	52%
Business O365 Revenue (\$M)	14,524	19,253	5,513	5,727	5,946	6,635	23,822	6,671	6,933	7,197	7,299	28,100	31,753	35,245	38,065
Commercial O365 Revenue (Est.)	\$14,524	\$19,253	\$5,513	\$5,727	\$5,946	\$6,635	\$23,822	\$6,671	\$6,933	\$7,197	\$7,299	\$28,100	\$31,753	\$35,245	\$38,065
y/y	41.6%	32.6%	25.0%	27.0%	25.0%	19.0%	23.7%	21.0%	21.0%	21.0%	10.0%	18.0%			
FX															
cc y/y															
KPI y/y	41.6%	32.6%	25.0%	27.0%	25.0%	19.0%	23.7%	21.0%	21.0%	21.0%	10.0%	18.0%	13.0%	11.0%	8.0%

Source: BofA Global Research estimates, company filings

We expect steady decline in the annuity portion of the business over the next several years as organizations increasingly migrate to Office 365 cloud versions. In our assumptions for Microsoft Dynamics, we estimate steady low double digit growth driven by adoption of cloud based applications and continued product improvements. Feedback from partners suggests healthy growth in the Dynamics business, especially amongst organizations who are looking for an integrated front and back office application suite, or are considering a lower priced alternative to other leading cloud platforms such as Salesforce.

Xbox Series X, Game Pass to drive gaming growth

We believe Xbox revenue is poised to reaccelerate in FY21E driven by the upcoming Series X and Series S console cycles in addition to continued adoption of Game Pass for access to exclusive gaming content. We are modelling for 5.9 million Xbox unit shipments in FY21, up from 4.9 million FY20. The company expects 40% y/y hardware revenue growth in Q2 which has historically been the peak quarter for Xbox shipments given the holiday season. However, in light of COVID, management commentary suggests near term supply chain constraints, likely to weigh on near term console shipments versus prior cycles.

We note that the release of Xbox Series S and X coincides with the new console cycle for Sony's Playstation 5. Sony has historically had more first party intellectual property for games with loyal followings (God of War, Last of Us, Uncharted, and Spiderman) and has had more popularity internationally compared to Xbox. However, Microsoft has been making several acquisitions of key studios, including Bethesda (Fallout, Elder Scrolls, Wolfenstein) which carry quality game franchises as well as brand recognition in order to generate more exclusive first party content. Ultimately, while the exclusive content could be a draw for the fan based followings of each video game franchise, the amount of third party content far outweighs the exclusive first party games.

In the near term, we are modelling for Game Pass revenue growth to outpace the rest of the Gaming business. Growth in Game Pass is driven by consumer desire to access a large list of gaming titles through a monthly subscription model, rather than buying individual titles. We believe the average gamer purchases two games a year, at \$60/game. As a result, a Game Pass subscription at \$12/month would mean that a gamer would break even after subscribing for 10 months. Currently there are more than 100 titles available through Game Pass (see list of titles in exhibit 24 below), including all games produced by Microsoft's studios and all Zenimax studio games. Microsoft also has an agreement with EA Play in which gamers are able to access EA Play with a Game Pass subscription. While other game publishers may have subscription services available at lower prices, the game catalogue available in Game Pass is currently more expansive than any other catalogue from other publishers. Game Pass subscribers also gain access to exclusive titles, as well as same day access to newly released games. We believe the number of Game Pass subscribers could reach 30.7 million by FY24, representing 66% of the Xbox installed base, up from 15 million today (26% of installed base). We are modelling for Game Pass revenue to reach \$4.33 billion by FY24, up from \$1.37 billion in FY20.

Exhibit 21: Xbox model summary

\$ Thousands	YEAR FY18A	YEAR FY19A	Sep. 1Q20A	Dec. 2Q20A	Mar. 3Q20A	June 4Q20A	YEAR FY20A	Sep. 1Q21A	Dec. 2Q21E	Mar. 3Q21E	June 4Q21E	YEAR FY21E	Year FY22E	Year FY23E	Year FY24E
Detailed Xbox Model															
Bottoms up total revenue	10,161,151	11,030,389	2,452,495	3,522,751	2,080,109	3,294,061	11,349,415	2,986,749	4,781,355	2,999,412	3,584,465	14,351,981	16,017,374	17,659,530	18,507,085
y/y (%)	13%	9%	-7%	-15%	-4%	63%	3%	22%	36%	44%	9%	26%	12%	10%	5%
KPI						64%		22%							
Hardware revenue (console)	2,738,670	2,205,000	280,000	840,000	175,000	420,000	1,715,000	192,500	1,172,500	350,000	350,000	2,065,000	1,858,500	1,672,650	1,589,018
y/y	-2%	-19%	-47%	-25%	-38%	50%	-22%	-31%	40%	100%	-17%	20%	-10%	-10%	-5%
Mix	27%	20%	11%	24%	8%	13%	15%	6%	25%	12%	10%	14%	12%	9%	9%
Accessories revenue	234,743	189,000	24,000	72,000	15,000	36,000	147,000	16,500	100,500	30,000	30,000	177,000	159,300	143,370	136,202
y/y	-2%	-19%	-47%	-25%	-38%	50%	-22%	-31%	40%	100%	-17%	20%	-10%	-10%	-5%
Mix	2%	2%	1%	2%	1%	1%	1%	1%	2%	1%	1%	1%	1%	1%	1%
Total Hardware revenue	2,973,413	2,394,000	304,000	912,000	190,000	456,000	1,862,000	209,000	1,273,000	380,000	380,000	2,242,000	2,017,800	1,816,020	1,725,219
y/y	-2%	-19%	-47%	-25%	-38%	50%	-22%	-31%	40%	100%	-17%	20%	-10%	-10%	-5%
Mix	29%	22%	12%	26%	9%	14%	16%	7%	27%	13%	11%	16%	13%	10%	9%
Software revenue	4,448,379	3,345,435	764,792	1,160,884	391,653	895,422	3,212,750	727,827	1,357,062	392,026	893,965	3,370,880	3,189,789	2,985,991	2,924,764
y/y	2%	-25%	-11%	-25%	-20%	103%	-4%	-5%	17%	0%	0%	5%	-5%	-6%	-2%
Mix	44%	30%	31%	33%	19%	27%	28%	24%	28%	13%	25%	23%	20%	17%	16%
Xbox live subscriptions + transactions revenue	2,542,700	4,573,796	1,130,254	1,126,050	1,174,456	1,474,639	4,905,399	1,509,922	1,565,766	1,597,841	1,636,057	6,309,585	7,596,990	9,022,951	9,530,599
y/y	61%	80%	0%	-6%	-2%	40%	7%	34%	39%	36%	11%	29%	20%	19%	6%
Mix	25%	41%	46%	32%	56%	45%	43%	51%	33%	53%	46%	44%	47%	51%	51%
Game Pass	196,658	717,158	253,449	323,817	324,000	468,000	1,369,266	540,000	585,528	629,545	674,443	2,429,516	3,212,795	3,834,569	4,326,503
y/y	265%	265%	79%	92%	83%	104%	91%	113%	81%	94%	44%	77%	32%	19%	13%
Mix	2%	7%	10%	9%	16%	14%	12%	18%	12%	21%	19%	17%	20%	22%	23%
Total Software revenue	7,187,737	8,636,389	2,148,495	2,610,751	1,890,109	2,838,061	9,487,415	2,777,749	3,508,355	2,619,412	3,204,465	12,109,981	13,999,574	15,843,510	16,781,866
y/y	21%	20%	0%	-11%	1%	65%	10%	29%	34%	39%	13%	28%	16%	13%	6%
KPI	20%		0%	-11%	2%	65%		30%	3,496,062	2,642,183	2,589,258	11,633,192	11,875,026	11,779,237	12,048,383

Source: BofA Global Research estimates, company filings

Exhibit 22: Xbox Hardware model – we estimate 5.9 million shipments this year (compared to 4.9 million in FY20) given new upcoming console cycle

Hardware	YEAR FY18A	YEAR FY19A	Sep. 1Q20A	Dec. 2Q20A	Mar. 3Q20A	June 4Q20A	YEAR FY20A	Sep. 1Q21A	Dec. 2Q21E	Mar. 3Q21E	June 4Q21E	YEAR FY21E	Year FY22E	Year FY23E	Year FY24E
Xbox Hardware Revenue															
Total Shipments Xbox	7,825	6,300	800	2,400	500	1,200	4,900	550	3,350	1,000	1,000	5,900	5,310	4,779	4,540
x blended ASP	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350
Xbox Hardware Revenue	2,738,670	2,205,000	280,000	840,000	175,000	420,000	1,715,000	192,500	1,172,500	350,000	350,000	2,065,000	1,858,500	1,672,650	1,589,018
y/y	-2%	-19%	-47%	-25%	-38%	50%	-22%	-31%	40%	100%	-17%	20%	-10%	-10%	-5%
Accessories revenue	234,743	189,000	24,000	72,000	15,000	36,000	147,000	16,500	100,500	30,000	30,000	177,000	159,300	143,370	136,202
ASP	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
attach rate	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Total Xbox Hardware revenue	2,973,413	2,394,000	304,000	912,000	190,000	456,000	1,862,000	209,000	1,273,000	380,000	380,000	2,242,000	2,017,800	1,816,020	1,725,219
y/y	-2%	-19%	-47%	-25%	-38%	50%	-22%	-31%	40%	100%	-17%	20%	-10%	-10%	-5%
as % of total Xbox revenue	29%	22%	12%	26%	9%	14%	16%	7%	27%	13%	11%	16%	13%	10%	9%
Installed base - beginning	62,555	62,777	60,737	59,565	60,652	59,341	60,737	58,987	58,040	59,918	59,398	58,987	58,891	58,238	57,139
Less: Obsolescence	7,603	8,340	1,972	1,313	1,811	1,554	6,650	1,496	1,472	1,520	1,507	5,996	5,963	5,878	5,761
Obsolescence rate	12.2%	13.3%	3.2%	2.2%	3.0%	2.6%	10.9%	2.5%	2.5%	2.5%	2.5%	10.2%	10.1%	10.1%	10.1%
Add: New Shipments	7,825	6,300	800	2,400	500	1,200	4,900	550	3,350	1,000	1,000	5,900	5,310	4,779	4,540
Installed Base - Xbox (w/ Obsol Rate)	62,777	60,737	59,565	60,652	59,341	58,987	58,987	58,040	59,918	59,398	58,891	58,891	58,238	57,139	55,917

Source: BofA Global Research estimates, company filings

Exhibit 23: Xbox software revenue – video games, Xbox Live, and Game Pass

Software																
	YEAR FY18A	YEAR FY19A	Sep. 1Q20A	Dec. 2Q20A	Mar. 3Q20A	June 4Q20A	YEAR FY20A	Sep. 1Q21A	Dec. 2Q21E	Mar. 3Q21E	June 4Q21E	YEAR FY21E	Year FY22E	Year FY23E	Year FY24E	
Revenue Breakout (Software - Game)																
Gaming software revenue																
Retail Price Xbox (MSFT Games)	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	
Retail Margins Xbox (MSFT Games)	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	
Revenue per Xbox MSFT game	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	\$48	
Total Xbox installed base	62,777	60,737	59,565	60,652	59,341	58,987	58,987	58,040	59,918	59,398	58,891	58,891	58,238	57,139	55,917	
x Attach rate per installed console	1.07	0.83	0.19	0.29	0.10	0.23	0.83	0.19	0.34	0.10	0.23	0.87	0.83	0.79	0.79	
Software Shipments	67,400	50,688	11,588	17,589	5,934	13,567	48,678	11,028	20,562	5,940	13,545	51,074	48,330	45,242	44,315	
Game revenue (MSFT)	3,235,185	2,433,044	556,212	844,279	284,838	651,216	2,336,546	529,329	986,954	285,110	650,157	2,451,549	2,319,846	2,171,630	2,127,101	
Retail Price Xbox (3rd Party)	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	
3rd Party Game Xbox (Royalty)	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	\$18	
Total Xbox installed base	62,777	60,737	59,565	60,652	59,341	58,987	58,987	58,040	59,918	59,398	58,891	58,891	58,238	57,139	55,917	
x Attach rate per installed console	1.07	0.83	0.19	0.29	0.10	0.23	0.83	0.19	0.34	0.10	0.23	0.87	0.83	0.79	0.79	
Software Shipments	67,400	50,688	11,588	17,589	5,934	13,567	48,678	11,028	20,562	5,940	13,545	51,074	48,330	45,242	44,315	
Game revenue (3rd party)	1,213,194	912,391	208,580	316,605	106,814	244,206	876,205	198,498	370,108	106,916	243,809	919,331	869,942	814,361	797,663	
MSFT Games (Xbox)	3,235,185	2,433,044	556,212	844,279	284,838	651,216	2,336,546	529,329	986,954	285,110	650,157	2,451,549	2,319,846	2,171,630	2,127,101	
Mix of total software revenue	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%	
3rd Party Games (Xbox)	1,213,194	912,391	208,580	316,605	106,814	244,206	876,205	198,498	370,108	106,916	243,809	919,331	869,942	814,361	797,663	
Mix of total software revenue	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	
Total Xbox Games Revenue	4,448,379	3,345,435	764,792	1,160,884	391,653	895,422	3,212,750	727,827	1,357,062	392,026	893,965	3,370,880	3,189,789	2,985,991	2,924,764	
Revenue Breakout (Software - Xbox Live)																
ASP per Xbox Live subscription			\$45	\$45	\$45	\$45		\$45	\$45	\$45	\$45					
Average Transaction Revenue per subscriber			\$14	\$14	\$14	\$17		\$17	\$17	\$17	\$17					
Ending Xbox Live Installed Base	56,392	63,670	58,669	56,218	53,251	55,752	55,752	56,796	57,249	55,674	54,444	54,444	52,555	51,230	46,236	
y/y	7.0%	12.9%	5%	-10%	-14%	-12%	-12.4%	-3%	2%	5%	-2%	-2.3%	-3.5%	-2.5%	-9.7%	
% Xbox Live Members of Total Install Base	90%	90%	98%	93%	90%	95%	95%	98%	96%	94%	92%	92%	90%	90%	83%	
% of Xbox live installed base on Gold plan	9.2%	10.0%	11.7%	13.4%	17.9%	21.0%	21.0%	21.3%	23.0%	26.0%	29.0%	29.0%	49.0%	65.0%	75.0%	
Gold Plan users	5,188	6,367	6,864	7,533	9,532	11,708	11,708	12,098	13,167	14,475	15,789	15,789	25,752	33,299	34,677	
ASP			\$45	\$45	\$45	\$45		\$45	\$45	\$45	\$45					
Xbox Live Subscription revenue	797,995	1,228,664	308,891	338,996	428,939	526,856	1,603,681	544,390	592,529	651,385	710,501	2,498,804	3,975,728	5,500,324	6,226,141	
y/y	56.7%	54.0%	8%	5%	29%	84%	30.5%	76%	75%	52%	35%	55.8%	59.1%	38.3%	13.2%	
Average Transaction Revenue per subscriber	9.00	12.00	14.00	14.00	14.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	
Xbox Live Subscribers	56,392	63,670	58,669	56,218	53,251	55,752	55,752	56,796	57,249	55,674	54,444	54,444	52,555	51,230	46,236	
Xbox Live Transaction revenue	1,744,705	3,345,132	821,363	787,054	745,517	947,783	3,301,718	965,532	973,236	946,457	925,556	3,810,781	3,621,262	3,522,627	3,304,457	
y/y	63.4%	91.7%	-2%	-10%	-14%	24%	-1.3%	18%	24%	27%	-2%	15.4%	-5.0%	-2.7%	-6.2%	
Total Xbox Live Revenue	2,542,700	4,573,796	1,130,254	1,126,050	1,174,456	1,474,639	4,905,399	1,509,922	1,565,766	1,597,841	1,636,057	6,309,585	7,596,990	9,022,951	9,530,599	
y/y	61%	80%	0%	-6%	-2%	40%	7%	34%	39%	36%	11%	29%	20%	19%		
Revenue Breakout (Software - Game Pass)																
Xbox live installed base	56,392	63,670	58,669	56,218	53,251	55,752	55,752	56,796	57,249	55,674	54,444	54,444	52,555	51,230	46,236	
% of Xbox install base signing up for Game Pass	5.0%	10.0%	12.0%	16.0%	16.9%	23.3%	23.3%	26.4%	28.4%	31.4%	34.4%	34.4%	46.4%	54.4%	66.4%	
Game pass subscribers	2,820	6,367	7,040	8,995	9,000	13,000	13,000	15,000	16,265	17,487	18,735	18,735	24,391	27,874	30,705	
ASP	\$36.00	\$36.00	\$36.00	\$36.00	\$36.00	\$36.00	\$36.00	\$36.00	\$36.00	\$36.00	\$36.00	\$36.00	\$36.00	\$36.00	\$36.00	
Gamepass revenue	196,658	717,158	253,449	323,817	324,000	468,000	1,369,266	540,000	585,528	629,545	674,443	2,429,516	3,212,795	3,834,569	4,326,503	
y/y	5255%	265%	79%	92%	83%	104%	91%	113%	81%	94%	44%	77%	32%	19%	13%	

Source: BofA Global Research estimates, company filings

Exhibit 24: Expected Xbox Game Pass exclusive/early access titles

Name	Developer	Exclusive	Expected Release Date
12 Minutes	Luis Antonio	Yes	2020
Avowed	Obsidian Entertainment	Yes	2022
CrossFireX	Remedy Entertainment	Yes	2020
Echo Generation	Cococumber	Yes	2021
Everwild	Rare	Yes	2021
Exo One	Exbleative	Yes	2020
Exomecha	TwistedRed	Yes	2021
Fable	Playground Games	Yes	2022
Football Manager 2021	Sports Interactive	Yes	2020
Forza Horizon 4	Playground Games	Yes	Launched
Forza Motorsport 8	Turn 10 Studios	Yes	2021
Gears 5	The Coalition	Yes	Launched
Gears Tactics	Splash Damage	Yes	Launched
Grounded	Obsidian Entertainment	Yes	Launched
Halo Infinite	343 Industries	Yes	2021
Halo: The Master Chief Collection	343 Industries	Yes	17-Nov-20
Hello Neighbor 2	TinyBuild Games	Yes	2021
Martha Is Dead	Wired Productions	Yes	2021
Ori and the Will of the Wisps	Moon Studios	Yes	Launched
Orphan of the Machine	Dynamic Voltage Games	Yes	2020
Project Mara	Ninja Theory	Yes	TBA
Rogue Company	First Watch Games	Yes	Launched
RPG Time: The Legend of V	DeskWorks	Yes	Launched
Samurai Showdown	SNK	Yes	2020
Scorn	Ebb Software	Yes	2020
Sea of Thieves	Rare	Yes	Launched
Senua's Saga: Hellblade II	Ninja Theory	Yes	2021
State of Decay 3	Undead Labs	Yes	2022
The Ascent	Neon Giant	Yes	2021
The Falconeer	Tomas Sala	Yes	Launched
As Dusk Falls	Interior/Night	Xbox early access	2021
Enlisted	Darkflow Software	Xbox early access	Launched
Phantasy Star Online 2: New	Sega	Xbox early access	2021
S.T.A.L.K.E.R 2	GSC Game World	Xbox early access	2021
Tetris Effect: Connected	Monstars and Resonair	Xbox early access	Launched
The Gunk	Image & Form	Xbox early access	2021
The Medium	Bloober Team	Xbox early access	Jan-21
Unexplored 2: The Wayfarer	Ludmotion	Xbox early access	Q1 2021
Warhammer 40,000: Darktide	Vermintide	Xbox early access	2021
ARK Survival Evolved	Studio Wildcard	TBC	Launched
Bright Memory: Infinite	Playism	TBC	Launched
Call of the Sea	Raw Fury	TBC	2021
Concept Destruction	Ratalaika Games	TBC	Launched
Nickelodeon Kart Racers 2: Grand Prix		TBC	2020
Second Extinction	Systemic Reaction	TBC	2021

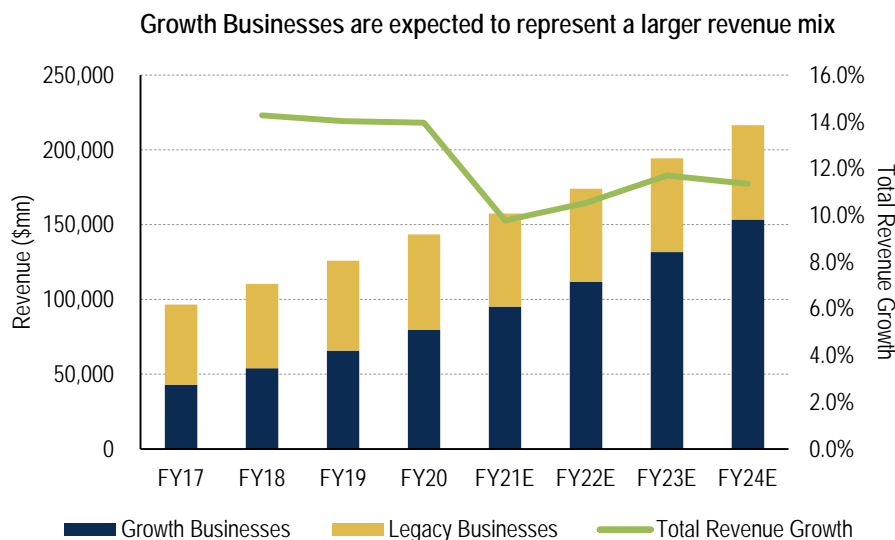
Source: BofA Global Research, IGN, Tech Radar

Sustained double digit revenue growth in Office, Azure, and Xbox to offset flattish growth legacy businesses

We expect sustained double digit revenue growth from Business Office, Azure, and Xbox which is expected to more than offset lagging legacy businesses such as Windows OEM and server annuity. We are modelling for 4 year revenue CAGR (FY20 to FY24) of 13%

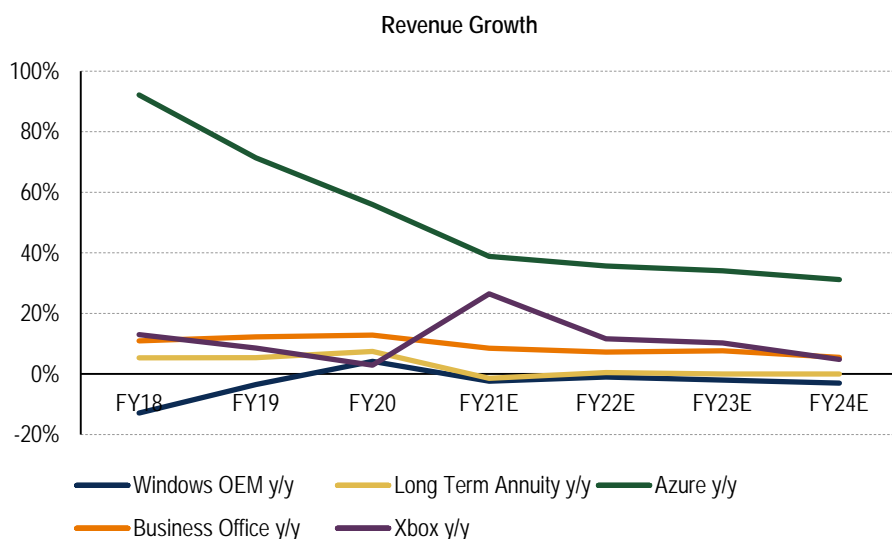
for Xbox, 35% for Azure, and 7% in Business office, while revenue for Windows OEM licensing is expected to decline at a 4 year CAGR of -2%, and Long Term Annuity is expected to decline at -0.2%. By FY24, we expect OEM to represent 9.5% of total revenue, down from 15.7% in FY20, while Long Term Annuity is expected to represent 9.0% of total revenue, down from 13.7% in FY20. We believe that double digit total company growth is sustainable as growth in new strategic lines of businesses offsets declining growth in the legacy businesses.

Exhibit 25: We expect the growth businesses (Business Office, LinkedIn, Consumer Office, Azure, GitHub, and Xbox) to represent a larger mix of revenue, offsetting decline in legacy businesses (LT Annuity, Enterprise Services, Windows OEM, Surface, and Search)



Source: BofA Global Research, Company filings

Exhibit 26: We are modelling for growth in Xbox, Azure, and Business Office to outpace the growth in the legacy businesses (expecting flat/negative growth in the near term)



Source: BofA Global Research, Company filings

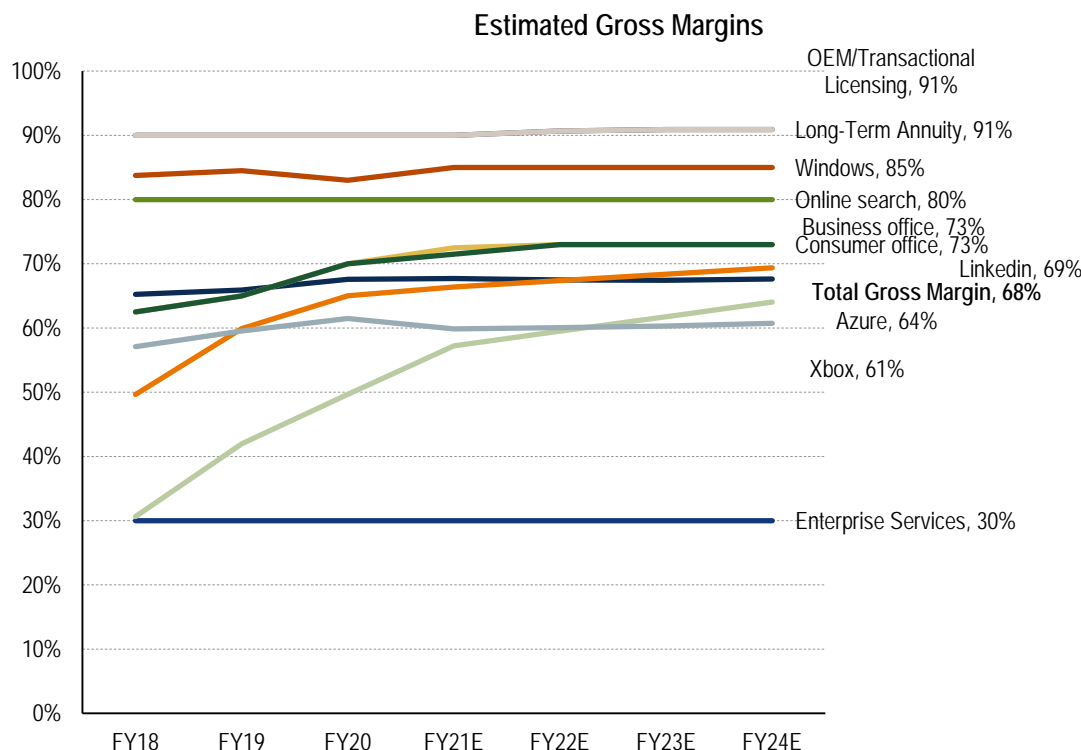
Margin expansion expected LT from Azure, Xbox

We see the opportunity for steady operating margin expansion, driven by 1) datacenter scale in the Azure IaaS/PaaS business, 2) growing games/Game Pass mix in Xbox, and 3) continued leverage on operating expense. Gross margins for Azure IaaS/PaaS could

exceed the 55% to 60% range over the long term (up from an estimated 38% in FY20). With Azure IaaS/PaaS revenue mix expect to reach 27% by FY24, margin improvement of this magnitude is expected to provide an 8% benefit to total company gross margin by FY24.

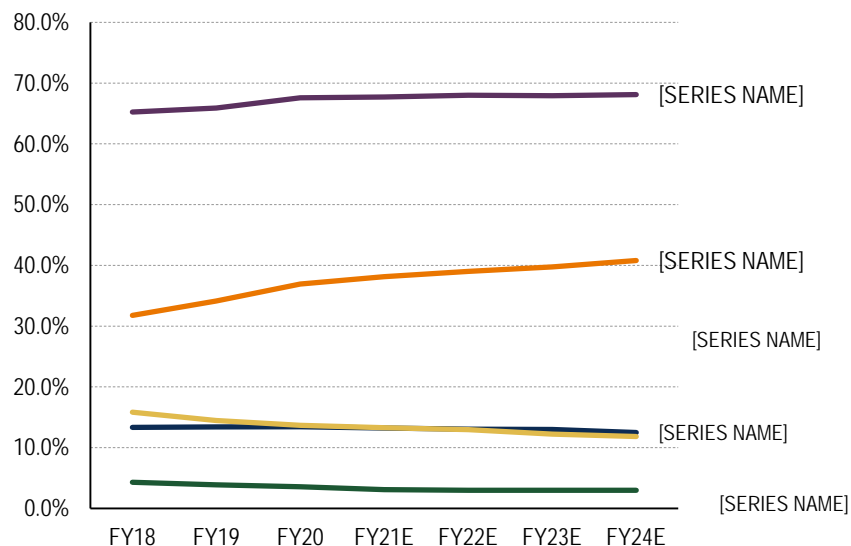
We also expect Xbox gross margins to benefit from the increasing move towards Game Pass and software revenue which carry a higher gross margin profile. We estimate Video Games and Game Pass revenue mix to reach 16% and 23% respectively by FY25. These two businesses carry gross margin of 80% and 60%, which compares to total company gross margin of 68%.

Exhibit 27: We see opportunity for gross margin expansion as Azure reaches scale and represents a larger mix of total revenue



Source: BofA Global Research estimates, company filings

With respect to operating margin, the company has stated expectations for revenue growth to outpace operating expense growth. Therefore, as the company continues to grow, we expect some additional points of leverage from the operating expense lines. We are modelling for some operating leverage from all three line items, particularly in sales/marketing, estimated to represent 11.8% of total revenue in FY24, down from 13.7% in FY20.

Exhibit 28: We are modelling leverage from the three operating expenses

Source: BofA Global Research estimates, company filings

Investment Risks

Tough C20 Office comps could weigh on PBP growth

Adoption of Microsoft Teams throughout the pandemic has been strong and has been a driver of O365 growth throughout the past year. While partner feedback suggests the migration from licenses to O365 is likely to continue for the next 12 to 18 months, we acknowledge there is a risk of deceleration in Commercial O365 revenue growth given the difficult comp in FY20. We are modelling for FY21 Commercial O365 revenue growth of 18%, and 13% in FY22, a deceleration from strong 24% growth in FY20. Commercial O365 revenue represents a growing mix of total Productivity and Business Processes revenue as the legacy businesses decline (we are modelling for Commercial O365 revenue to represent 58% of FY22 PBP revenue, from 51% in FY20). As a result, the tougher comp in Office revenue presented by the adoption of Teams in FY20/FY21 presents a risk of deceleration in the overall Productivity and Business Revenue business.

Negative margin pressure near term as Azure mix increases

Microsoft could see some near term gross margin pressure as the Azure business grows as a percentage of overall revenue. While Microsoft's on premise offerings offer a high margin profile, growth in these lines of business is decelerating. We believe that the IaaS and PaaS businesses within Azure still has room for margin leverage. Microsoft believes that the margins in this business could ultimately surpass AWS margins (estimated to be 55-60%). We also do not see much additional gross margin leverage in the company's SaaS offerings (EMS, Office 365, LinkedIn, and Microsoft Dynamics) which the company has previously stated are close to reaching steady state gross margins.

Valuation at high end of historical range presents downside risk

The stock currently trades at 29x PE based on our CY22 Non-GAAP EPS which is at the higher end of the range of the stock's historical forward PE multiples (12x-36x). Alternatively, the stock is trading at a PEG ratio of 2.3x, which is also at the higher end of the historical range of 1.4 to 2.6. At 29x C22 PE and at a PEG ratio of 2.3, we believe there is downside risk to the current valuation. A potential pullback in share price could occur in the event of changes to market sentiment stemming from global macro uncertainty, or potentially disappointing quarterly growth and or margin.

Exhibit 29: Microsoft currently trades at a forward PE multiple of 29x

Source: BofA Global Research, Bloomberg

Office, Windows and SMB segments macro sensitive

Microsoft's Office and legacy Windows businesses are headcount driven and sensitive to the macro economic cycle/hiring. In the event of a prolonged global recession and possible headcount reductions, these businesses could experience declining revenue, which could weigh on total company growth. This risk is mitigated by a lagging effect in subscription businesses such as Azure and Office 365. However, even these business could experience slowing growth as headcount reductions could weigh on user subscriptions. Also, we estimate that the SMB represents 33% Microsoft's intelligent cloud business, which is more susceptible to user subscription declines resulting from headcount reductions or SMB mortality.

Competition from point solutions and platform vendors

Microsoft faces a number of competitors across each segment of business. In Intelligent Cloud, Microsoft Azure competes most notably with Amazon Web Services as well as Google's GCP. Microsoft Power BI also competes with other analytics vendors such as Salesforce/Tableau, Qlik, and Google/Looker as well as integration offerings from Oracle, TIBCO, Informatica, and Talend amongst others. In the Personal Computing segment, Microsoft competes directly with Sony Playstation and Nintendo for Gaming, Apple and other tablet manufacturers for Surface, and Google for online search.

We view Microsoft's advantages as formidable and believe the long history of innovation is capable of continuing to drive future share gains. However, it is important that the company continues to deliver an ongoing roadmap of new products and features in order to sustain their market position. The absence of ongoing feature enhancements and new module development could present the risk of slowing share gains or even share losses, which could curb growth.

Partner Feedback

We conducted a recent round of discussions with over a dozen key Microsoft system integrator partners and resellers to gauge the competitive environment, pipelines for new wins and upselling activity, and momentum in Azure and Office 365 businesses. Partners generally expect to end the year ahead of expectations and noted healthy pipelines in 2021. Partners are expecting this heightened adoption to continue for the next six to twelve months driven by ongoing migrations to the cloud and digital transformation efforts brought on by COVID.

Partners cited healthy growth in the Azure business, with Azure increasingly viewed as the enterprise standard. Partners noted that Azure win rates are typically above the 70% range against AWS when organizations already have an existing relationship with Microsoft's applications. In addition, Azure has been growing its presence within the large enterprise, especially in verticals such as retail, healthcare, and CPG given the trusted nature of the Microsoft brand as well as the lack of business conflict with Amazon's retail organization. Partners expect the Azure growth to sustain for years to come as organizations continue to move existing workloads onto Azure, and develop new workloads or implement new applications onto Azure, thereby driving up Azure consumption.

In the Office 365 business, partners cited heightened adoption of the cloud based module this past year driven by remote work and Teams adoption. Partners are increasingly seeing a shift within organizations towards adoption of the higher priced SKU's, particularly E3. There is also excitement about the additional Power apps being built that surround the Office suite, including Power BI, Sharepoint, and Bot capabilities which are expected to drive sustained growth for next few years. Partners are also seeing steady demand of Microsoft Dynamics adoption in the customer base and have noticed win rates improve against Salesforce in the past year. Microsoft Dynamics is viewed as a compelling application for organizations who are already running some Microsoft products and are looking for an all in one platform that has both front and back office capabilities. In addition, Dynamics is priced favorably compared to Salesforce.

We include commentary from these calls below:

"Our Microsoft Dynamics business has been strong in the past quarter. We saw some projects get stuck in the pipeline during the spring and summer months but they are now coming back. We are also seeing a lot of new organizations approaching us due to the need for switching to remote work and the importance of having a cloud solution. We also see some replacements of legacy programs off of Oracle and SAP. Organizations typically choose Dynamics because Dynamics has easy customization options and everything is on one integrated system. All the data comes from one central repository (the CS Centralized Data Management system) and can route to any Microsoft application. In addition, Dynamics covers both the front office CRM and the back office ERP, which is appealing for some organizations that don't want to have two vendors for both. We are definitely seeing the business opportunity growing for Dynamics. A lot of larger organizations have taken note of Pepsi's migration off of SAP and onto Dynamics 365 and see this as a demonstration of Dynamics' value." – **SI Partner, Asia**

"We focus on three segments of the Microsoft business: Azure, Dynamics, and Office 365. Our Azure business has grown very nicely in the past few years though growth has slowed down slightly because we are working with a finite number of clients. However, organizations typically gradually move workloads onto Azure, and we have a lot more work to do here. Once an organization has invested in Azure, the likelihood of moving elsewhere is very low. If organizations already have some Microsoft product implemented, the win rates for Azure against AWS or GCP is in the 70% to 80% range. In our view, the biggest risk for Azure growth is that the sales teams from AWS are very aggressive and are not afraid to undercut Azure on pricing. Microsoft is still hesitant to

lower prices. With regards to Dynamics, in the last six months, we have noticed a tremendous uptick of Dynamics adoption especially for back office processes such as Finance and Supply Chain. The need to move on premise workloads onto the cloud due to COVID is driving a fair amount of the adoption of Dynamics 365. The Microsoft story resonates with organizations and people like having all their processes on one vendor. In a lot of cases, organizations already have some type of Microsoft footprint so it is not hard to grow the footprint from there. On the CRM side, we believe that Dynamics has reached feature parity with Salesforce in the last year or so, however, Dynamics loses to Salesforce mostly because Salesforce has more mindshare with the IT decision maker. In Office 365, there is a migration en masse from the on prem version of Office onto the cloud version, however it is not a difficult task to do this so from a consulting perspective, we are not as invested in these projects. However, the Teams integration with the Power BI dashboard is very powerful, and we are seeing some shift towards the higher priced E3 and E5 versions of O365 due to the more robust Teams features. Teams and Power BI are definitely driving incremental revenue here.” – **SI Partner,**

North America

“In general, our Microsoft consulting business is trending in line with our expectations this past quarter, though we are still expecting to be down in the single digits y/y due to the COVID disruption. This past quarter, things have definitely picked up and utilization rates are trending back to normal. We are expecting things to reaccelerate going into 2021, and that 2021 will be a growth year for us. On the Azure front, we are definitely seeing growth outpace the rest of the business. We believe that Azure has reached feature parity compared to AWS though they may lose if AWS places pricing pressure on Azure. However, we believe that Azure is stronger because of all the Microsoft and third part business applications that sit on top that take advantage of the platform. If organizations are already running Microsoft applications, then moving workloads onto Azure is an easy sell. In addition, we are seeing more Azure growth and adoption on the enterprise side; SMB organizations typically do not want to be tied to a specific platform, and AWS’s container technology allows SMBs to easily revert back to on prem systems, if that is what they want. We are also seeing cases where organizations use a multi cloud strategy. This is typically for if the organization wants to separate their back office and front office processes, and would use AWS for one, and Azure for another. On the enterprise applications side, we are seeing a lot of growth coming from Dynamics CRM adoption. The platform story with Power BI from Microsoft is definitely compelling and we are noticing that win ratios are increasing. Dynamics ERP is not growing as fast as CRM given these are usually more expensive projects with longer time to value, but we are seeing a lot of migration projects off of legacy solutions and onto Dynamics.” – **SI Partner, North America**

“We are seeing a lot of momentum in our Azure consulting practice, driven by several trends. First, SaaS ISVs are increasingly moving onto Azure away from AWS for competitive concerns. Microsoft is viewed as more agnostic to the applications business. Second, Azure is viewed as more interoperable with competing data management vendors such as Oracle and IBM. Finally, Microsoft is seeing real progress in the Federal and State government verticals, given a number of key certifications, and as a result of goodwill associated with Bill Gates and his philanthropic work. AWS’s technology stack is stronger than Azure, but Microsoft has more customer goodwill with customers and ISVs.” – **Global SI**

“Microsoft is making a big push on Azure and Office 365 products – everything is about the consumption of Azure resources. Microsoft is doing this by leveraging Teams which allows them to compete against Zoom in addition to allowing organizations to consume more data and store documents given that Teams is also a place to work. The data consumption and storage will drive Azure consumption. There is currently a lot of momentum in Teams implementations. In general, Azure’s capabilities are now being viewed as being on par with AWS. Both AWS and Azure are growing but Azure seems to be growing at a higher rate compared to AWS. In addition, the use of Windows SQL is critical for businesses, and that plays well with Azure as a selling point.” – **SI Partner,**

North America

“Our Microsoft business has been tracking ahead of expectations despite COVID. This is being driven by the end of life for the server product which is causing lots of cloud migration projects. Cloud offerings are almost selling themselves right now. Microsoft Teams is a huge driver of growth – we are focusing mostly on Teams in order to drive more premium versions of Office 365 and Microsoft 365 and we expect growth to continue for several years.” – **Reseller, North America**

“Our Microsoft business tracked in line with expectations last quarter. Our main driver for growth is in the Azure business and we think that it is gaining on AWS. Azure sometimes loses against AWS because the platform is still rather complicated and there is a lot of integration work to do, however, Azure is now a trusted platform. We are seeing organizations, including government agencies, put in vital workloads into Azure. There is hardly any down time for Azure and it is considered to be very reliable. However, if organizations want to have a hybrid cloud use case, AWS is still viewed as the better platform to support the hybrid deployment. In general, we are very positive on Azure and believe there will only be an accelerated adoption from here. We are also seeing steady growth for Office 365, driven by Teams adoption and we don’t expect the momentum to stop there either.” – **SI Partner, North America**

“Our Azure business has been growing in line with our expectations, with growth mainly coming from migration projects off of on prem data centers and onto the cloud. If the organization is already using Windows desktop and the SQL server, then it is a natural fit to move into Azure. Azure’s dev op functionality has also improved drastically over the last few years and allows developers to design and deploy continuously. Azure is also doing very well in the government space. However, we are still seeing AWS as the market leader. AWS offers much better control and is easier to deploy. AWS is also the better choice for mixed environments.” – **SI Partner, Asia**

“We expect to grow our Microsoft 30% y/y by the end of this year which is slightly below our expectations. At the height of COVID we saw a 75% reduction in our deal activity and pipelines though that has since come back dramatically. We are seeing a lot of adoption of E5, with growth being driven by the incremental Security and Compliance features offered in E5 compared to E3. We are also seeing good adoption of Dynamics 365 for finance and operations, as well as the CRM application. Our Azure business is seeing a significant amount of growth driven by modernization work. Organizations are putting more workloads into the cloud and we are expecting this trend to continue. Microsoft has a large amount of IP and applications that can be run in Azure, and they are partnering with a lot more third party applications which are increasingly being built on top of Azure. Typically we see developer driven organizations and startups look towards AWS while enterprises typically choose Azure. We believe Microsoft’s security, monitoring, and devops tools are stronger than Google or AWS’s tools. In general, we are expecting FY21 to be a growth year and we are hiring more reps in preparation for our pipeline builds.” – **SI Partner, North America**

“Our Microsoft business has been growing in line with expectations, with growth being driven by cloud migration projects. We are typically seeing organizations moving from proprietary on premise solutions onto Microsoft Azure and Microsoft applications (Office, Dynamics, etc.). We view AWS as more suitable for lower to mid sized businesses who are concerned about budgets, given AWS is cheaper than Microsoft. However, Azure has been aggressively building out different connectors and driving growth in their partner and ISV channel which we think is key to Azure’s success in the future. Overall, our pipelines are looking good and we are noticing businesses are shortening their timelines for digital transformation efforts.” – **SI Partner, North America**

“Our Microsoft business has been growing 40% y/y and we are expecting to end the year in line with our 40% expectations. We have seen a lot of growth in our Office 365 practice, with a huge shift towards E3 and E5 versions. Most organizations that we work with choose E3 given that the functionalities are good enough and don’t feel the need to

pay more for the additional features in E5. Our Azure business has also been growing well. The bundling of Azure with other Microsoft products (i.e. Dynamics and the Power platform) is why Azure continuously wins over AWS. Although AWS is competitive on pricing the integration with O365/M365 and other Microsoft products is very important to businesses. Azure is a logical extension if organizations are already using a Microsoft product. In general, our pipelines are looking healthy and we are definitely noticing that the appetite for business spending has increased this part quarter.” – **SI Partner, North America**

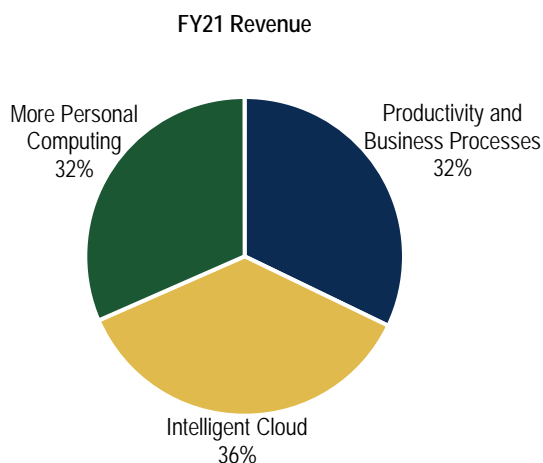
“Our Microsoft business has been growing in line with our expectations this past year though in a different way than expected. We were expecting to do much more work on Power Apps but most of our projects this year revolved around implementing Microsoft Teams. We are now seeing a trend of companies coming back and expanding on their M365 licenses and adding security and compliance features. We are expecting the cloud transition onto M365 to sustain for many years. Skype for Businesses will be fully sunset by June 2021 so there is an increased push onto Microsoft Teams. In addition, we are seeing a lot of growth coming from additional Microsoft Apps such as Sharepoint and Power BI which all require integration work. In general, our pipelines for next year are looking very healthy and we are hiring aggressively to keep up with the number of projects that we are expecting for the next year.” – **SI Partner, North America**

Company description

Microsoft (NYSE: MSFT) is one of the world’s largest technology companies, with technology solutions for individual consumers and enterprises alike including software, services, and devices. The company was founded in 1975 by Bill Gates and Paul Allen and completed its IPO in 1986. The company is headquartered in Redmond, Washington and has over 163,000 employees, with 96,000 employees in the US. 34% of the company’s headcount are in operations manufacturing, distribution, product support, consulting), 33% are in research and development, 25% are in sales and marketing, and the remaining are in general and administrative functions.

Microsoft has three business segments: Productivity and Business Processes, Intelligence Cloud, and More Personal Computing.

Exhibit 30: Revenue mix of three main lines of business



Source: BofA Global Research estimates

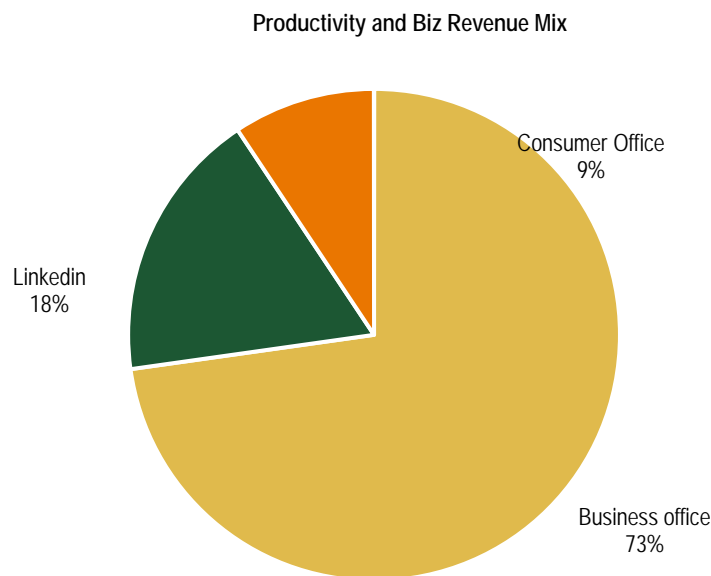
We describe the three businesses/lines of business below:

Productivity and Business Processes (32% of our estimated FY21 revenue)

This product group covers products and services that aid in the productivity, communication, and information services of both organizations and individuals.

- Office Commercial (74% of our estimated FY21 PBP revenue): includes Office 365 subscriptions and on premise Office licenses. Office, Exchange, SharePoint, Microsoft Teams, Office 365 Security and Compliance, and Skype for Business all fall under this category.
- Office Consumer (9% of estimated FY21 PBP revenue): includes the consumer versions of the Office products. Growth in Office Consumer is driven by the number of consumers that buy Office with new devices, as well as the shift from on premise Office licenses onto Microsoft 365 Consumer subscriptions. Skype, Outlook.com, and OneDrive also belong in this category.
- LinkedIn (18% of estimated FY21 PBP revenue): an online service that connects companies and professionals. LinkedIn offers paid solutions in addition to the free services including Talent Solutions (for organizations to recruit new hires), Learning Solutions (training existing employees), Marketing Solutions (grow relationships between organizations), and Sales Solutions (digital selling tools to acquire new opportunities). LinkedIn also offers Premium Subscriptions which allow members to access additional services such as premium search. As of June, 2020, LinkedIn has over 700 million members on the platform.
- Dynamics (8% of estimated FY21 PBP revenue, 10% of Office Commercial): cloud based or on premise enterprise application suite, including financial management, CRM, and supply chain management for organizations. Growth in Dynamics is driven by the continual shift to the cloud based Dynamics 365.

Exhibit 31: FY21e Productivity and Business Processes Revenue Mix



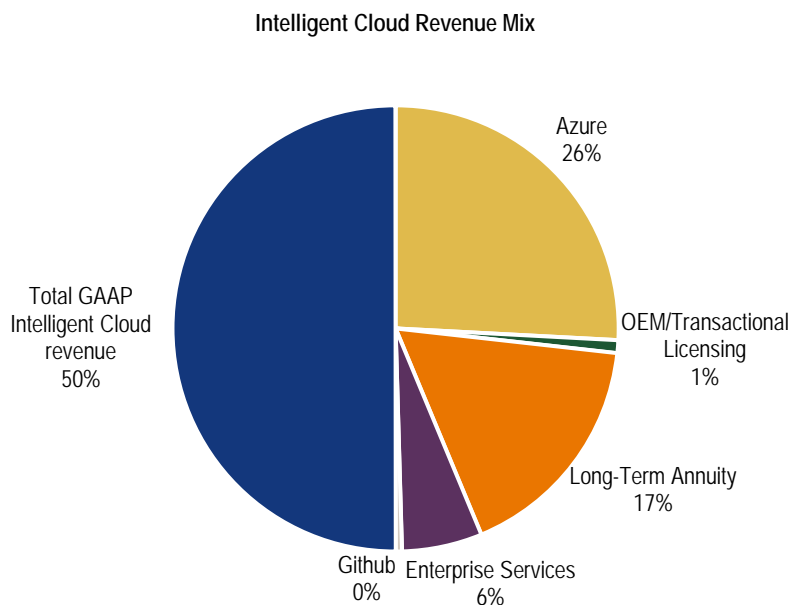
Source: BofA Global Research estimates

Intelligent Cloud (36% of our estimated FY21 revenue)

This product group covers public, private, and hybrid server products and cloud services for organizations and developers.

- Azure (52% of estimated FY21 IC revenue): a comprehensive set of cloud services to allow customers to leverage Azure's datacenters rather than managing on premises hardware and software. Azure revenue includes Infrastructure as a service (IaaS) and platform as a service (PaaS) consumption based services, a per user-based Enterprise Mobility and Security offering, and Power BI. Core components of Azure include compute, storage, networking, database and analytics.
- OEM/Transaction Licensing (2% of estimated FY21 IC revenue): server licenses sold to OEM's and retailers that provide access rights to SQL Server and Windows Server
- Github (1% of estimated FY21 IC revenue): a collaboration platform for developers that also hosts a library of codes
- Enterprise Services (including Premier Support Services and Microsoft Consulting Services, 12% of estimated FY21 IC revenue): assists organizations with the developing, deploying, and training of Microsoft products

Exhibit 32: FY21e Intelligent Cloud Revenue Mix



Source: BofA Global Research estimates

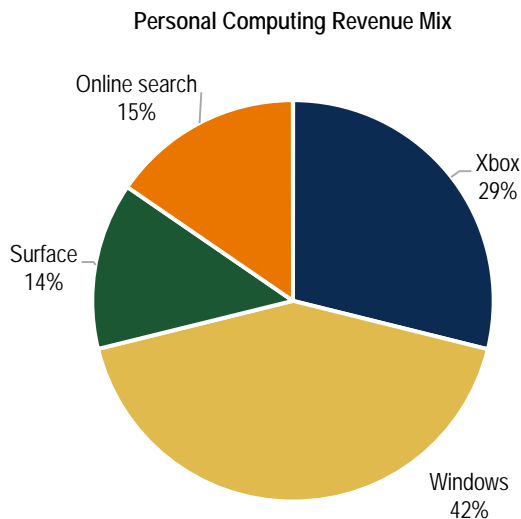
More Personal Computing (32% of our estimated FY21 revenue)

This product group includes products and services that are more consumer oriented and consist of Windows, Devices, Gaming, and Search.

- Windows (42% of estimated FY21 MPC revenue): The Windows operating system is typically purchased by OEMs and pre-installed on the devices sold. Windows also includes cloud services such as Microsoft Defender as well as more advanced security offerings
- Devices (14% of estimated FY21 MPC revenue): Microsoft manufactures and sells their own devices, including Microsoft Surface and PC accessories.
- Gaming (29% of estimated FY21 MPC revenue): Microsoft's gaming business consists of Xbox consoles, video games, third party video game royalties, Xbox Live subscriptions (allows gamers on Xbox consoles and Windows devices to connect and play online), and Game Pass (a subscription service that allows gamers to access a curated library of over 100 video games).

- Search (15% of estimated FY21 MPC revenue): includes Bing and Microsoft Advertising. Microsoft also partners with other companies, including Verizon, to provide and monetize search queries.

Exhibit 33: FY21e Personal Computing Revenue Mix



Source: BofA Global Research estimates

Microsoft distributes its products and services through the following channels:

- **OEMs:** Through direct OEMs, Microsoft manages a direct distribution agreement for one or more of their products with OEM companies. OEM partners include Acer, ASUS, Dell, Fujitsu, HP, Lenovo, Samsung, Sharp and Toshiba. OEMs pre install the Windows operating system on their devices, in addition to other products such as Office or Office 365 subscriptions
- **Direct:** Microsoft has a direct sales program to target corporate customers. Organizations can license Microsoft products and services directly with Microsoft through Enterprise Agreements and Enterprise Services contracts. Oftentimes, this sale includes support from system integrators, independent software vendors, and partners that can advise organizations on the product and implementation. In addition, Microsoft sells commercial and consumer products directly to customers through digital marketplaces and online stores. In June 2020, Microsoft closed all physical Microsoft store locations.
- **Distributors and Resellers:** Microsoft also indirectly license their products and services through LSP partners (“licensing solution partners”), distributors, VARs (“value added resellers), and retailers. LSP partners engage with large organizations. Distributors sell to VARs partners. VARs engage with SMB organizations. Individual consumers typically obtain Microsoft products through retail outlets or resellers.

Microsoft licenses software to organizations using volume licensing agreements that bundle multiple licenses of products or services together, rather than requiring organizations to purchase separate licenses through retail channels. Some volume licensing agreements also offer Software Assurance (SA), which provides customers to the rights to new software and upgrades for perpetual licenses released over the contract period as well as support, training, and tools to ensure success. Microsoft offers several types of Volume Pricing Programs:

- **Enterprise Agreement:** typically designed for organization-wide deployments for medium or large organizations, these contracts allow organizations to license cloud services or on premise software over a three year period and includes Software Assurance. Enterprise Agreements make it easy for larger organizations to manage their volume licensing program by bundling cloud services and software licenses into one agreement.
- **Microsoft Product and Services Agreement:** these agreements are typically designed for medium and large organizations that do not require an organization-wide commitment and want to license services and on-premise software as needed under a non-expiring agreement. SA is optionally included in these agreements.
- **Open/Open Value Agreements:** these agreements are designed for small and medium organizations with agreements lasting one to three years. In Open agreements, organizations purchase perpetual licenses and SA is optionally included. In Open Value agreements, SA is included and organizations can purchase either perpetual licenses or subscribe to licenses.
- **Select Plus Agreements:** designed for government and academic organizations to purchase on-prem licenses, with option to also purchase perpetual licenses and SA.
- **Microsoft Online Subscription Agreements:** designed for small and medium organizations to acquire monthly or annual subscriptions for cloud based services directly via the web.

Microsoft also has several partner programs for partners to provision products to their own customers. The Microsoft Cloud Solution Provider program allows partners to package their own products and services to directly provision and support their customer subscriptions. The Microsoft Services Provider License Agreement allows hosting service providers and ISVs to license Microsoft products and provide these services and applications to their own end customers. These partners typically license software over a three year period and are billed monthly based on consumption.

Management team

Satya Nadella – CEO

Satya Nadella was appointed CEO of Microsoft in February 2014. Prior to his appointment, Mr. Nadella held leadership roles in several divisions of Microsoft, including EVP of Cloud and Enterprise from 2013 to 2014, President of Server and Tools from 2011 to 2013, and SVP of Online Services from 2009 to 2011. Mr. Nadella holds a B.Eng. in electrical engineering from the Manipal Institute of Technology, an M.S. in computer science from the University of Wisconsin-Milwaukee, and an MBA from the University of Chicago, Booth School of Business.

Amy Hood – CFO/EVP

Amy Hood has served as the EVP and CFO of Microsoft since 2013. Ms. Hood joined Microsoft in 2002 and held various leadership positions in her time in the organization, including CFO of the Microsoft Business Division and GM of Strategy in the Microsoft Business Division. Ms. Hood holds a bachelor's degree in economics from Duke University and an MBA from Harvard University.

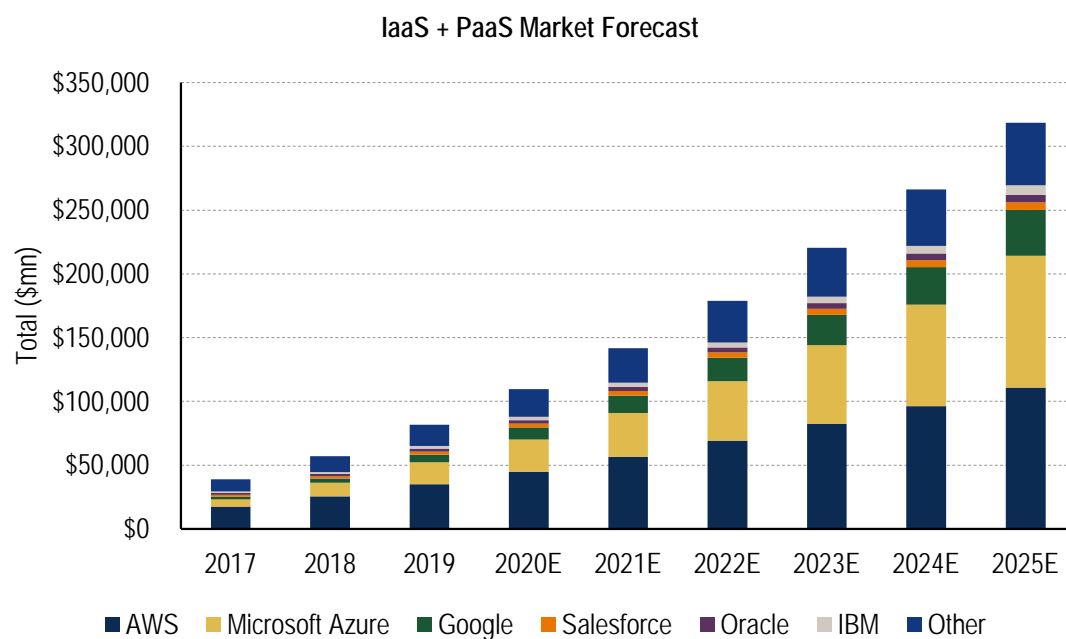
Industry overview

Microsoft's various lines of business address an enormous market opportunity. In this section we outline the three product lines that are key to Microsoft's continued growth in the long term, including IaaS/PaaS for Azure, desktop productivity for Commercial Office and gaming for the Xbox platform.

Azure

We estimate the market opportunity for Microsoft Azure as of CY20 is \$109.8 billion, growing 34% y/y. We expect the IaaS + PaaS market size to grow to \$318.4 billion by 2025, growing at a five year CAGR of 24%. We expect Microsoft Azure to surpass Amazon Web Services as the leading cloud platform in the next 5 to 7 years as more enterprises move workloads onto Azure. We estimate Azure has 23% of the market share for IaaS + PaaS in 2020 and is growing at a 5 year CAGR of 33% y/y. This compares to AWS with the most market share in 2020 (estimated to be 40.9%), though growing at a lower 5 year CAGR of 20%.

Exhibit 34: IaaS + PaaS market share



Source: BofA Global Research estimates, Gartner, IDC

Exhibit 35: IaaS + PaaS market opportunity

IaaS + PaaS (from BofA model)	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	19-23	20-25
AWS	\$17,458	\$25,656	\$35,026	\$44,912	\$56,571	\$69,254	\$82,412	\$96,423	\$110,886	24%	20%
Microsoft Azure	\$5,748	\$10,475	\$17,163	\$25,217	\$34,460	\$46,528	\$61,751	\$79,597	\$103,476	38%	33%
Google	\$2,141	\$3,389	\$5,979	\$9,554	\$13,707	\$18,391	\$23,572	\$29,270	\$35,760	41%	30%
Salesforce	\$1,442	\$1,913	\$2,491	\$3,048	\$3,531	\$4,195	\$4,855	\$5,486	\$6,145	18%	15%
Oracle	\$1,367	\$1,706	\$2,245	\$2,650	\$3,194	\$3,865	\$4,484	\$5,111	\$5,776	19%	17%
IBM	\$1,148	\$1,556	\$2,048	\$2,625	\$3,293	\$4,064	\$4,965	\$6,042	\$7,326	25%	23%
Other	\$9,615	\$12,468	\$16,786	\$21,752	\$27,089	\$32,644	\$38,357	\$44,311	\$49,054	23%	18%
Total	\$38,918	\$57,163	\$81,737	\$109,758	\$141,845	\$178,940	\$220,396	\$266,240	\$318,422	28%	24%
y/y %	55%	47%	43%	34%	29%	26%	23%	21%	20%		
IaaS (implied)	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	19-23	20-25
AWS	\$15,162	\$21,978	\$29,533	\$37,203	\$46,292	\$56,062	\$66,009	\$76,519	\$87,133	22%	19%
Microsoft Azure	\$2,382	\$4,588	\$8,357	\$12,839	\$17,926	\$25,270	\$35,269	\$47,402	\$64,979	43%	38%
Google	\$1,150	\$2,025	\$3,861	\$6,478	\$9,485	\$12,849	\$16,575	\$20,647	\$25,304	44%	31%
Salesforce	\$374	\$420	\$627	\$852	\$989	\$1,326	\$1,620	\$1,868	\$2,136	27%	20%
Oracle	\$693	\$630	\$875	\$1,016	\$1,315	\$1,704	\$2,063	\$2,425	\$2,821	24%	23%
IBM (per IDC)	\$492	\$688	\$943	\$1,274	\$1,695	\$2,220	\$2,876	\$3,696	\$4,714	32%	30%
Other	\$577	\$997	\$1,679	\$2,610	\$3,792	\$5,223	\$6,904	\$8,862	\$9,811	42%	30%
Total (implied)	\$20,831	\$31,327	\$45,875	\$62,272	\$81,493	\$104,655	\$131,316	\$161,419	\$196,898	30%	26%
y/y %	61%	50%	46%	36%	31%	28%	25%	23%	22%		
PaaS (historical based on IDC/Gartner)	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	19-23	20-25
AWS	\$2,296	\$3,678	\$5,493	\$7,709	\$10,279	\$13,192	\$16,403	\$19,904	\$23,753	31%	25%
Microsoft Azure	\$3,366	\$5,887	\$8,806	\$12,378	\$16,534	\$21,258	\$26,482	\$32,195	\$38,497	32%	25%
Google	\$991	\$1,364	\$2,118	\$3,076	\$4,222	\$5,542	\$6,997	\$8,623	\$10,456	35%	28%
Salesforce	\$1,067	\$1,493	\$1,863	\$2,195	\$2,542	\$2,868	\$3,236	\$3,618	\$4,009	15%	13%
Oracle	\$674	\$1,076	\$1,369	\$1,634	\$1,879	\$2,161	\$2,420	\$2,686	\$2,955	15%	13%
IBM	\$656	\$867	\$1,104	\$1,351	\$1,598	\$1,843	\$2,089	\$2,346	\$2,612	17%	14%
Other	\$9,038	\$11,471	\$15,108	\$19,142	\$23,296	\$27,421	\$31,453	\$35,449	\$39,243	20%	15%
Total (historical based on IDC/Gartner)	\$18,088	\$25,837	\$35,862	\$47,486	\$60,352	\$74,286	\$89,080	\$104,821	\$121,524	26%	21%
y/y %	49%	43%	39%	32%	27%	23%	20%	18%	16%		
PaaS \$ to IaaS \$.87x	.82x	.78x	.76x	.74x	.71x	.68x	.65x	.62x		
Market share											
IaaS + PaaS	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E		
AWS	44.9%	44.9%	42.9%	40.9%	39.9%	38.7%	37.4%	36.2%	34.8%		
Microsoft Azure	14.8%	18.3%	21.0%	23.0%	24.3%	26.0%	28.0%	29.9%	32.5%		
Google	5.5%	5.9%	7.3%	8.7%	9.7%	10.3%	10.7%	11.0%	11.2%		
Salesforce	3.7%	3.3%	3.0%	2.8%	2.5%	2.3%	2.2%	2.1%	1.9%		
Oracle	3.5%	3.0%	2.7%	2.4%	2.3%	2.2%	2.0%	1.9%	1.8%		
IBM	2.9%	2.7%	2.5%	2.4%	2.3%	2.3%	2.3%	2.3%	2.3%		
Other	24.7%	21.8%	20.5%	19.8%	19.1%	18.2%	17.4%	16.6%	15.4%		

Source: BofA Global Research estimates, Gartner, IDC

Gaming

Gaming revenue as of FY20 is estimated to be \$11.35 billion, growing 3% y/y.

Microsoft's console revenue accounted for 15% of total revenue, though growth in console sales is heavily dependent on release cycles and could see accelerated growth in the next year given the release of the new Xbox Series S and X. We believe that the core gaming market (consoles, video games, subscription revenue, and transactional revenue) could represent a \$170 billion opportunity.

We look to Microsoft's estimate that there are 250 million console players worldwide. We assume an average console price of \$300 (in line with prices of Xbox, Nintendo Switch, and PlayStation) and arrive at console TAM of \$75 billion.

We then assume 80% of users will be on a premium plan, with an average subscription price of \$180 a year. We arrive at a subscription TAM of \$13.6 billion. In addition to this, we assume players on the premium plans spend an average of \$68 per year on transactional spend for in game features, leading to a \$45 billion market opportunity for in game transactional revenue.

Finally, we assume console owners purchase 3 games per year, with each game costing \$60 on average. We arrive at a market opportunity for video games of \$45 billion.

Exhibit 36: Gaming TAM

Total Console Players (mn)	250
x Average console price	\$300
Console TAM (mn)	75,000
% of users on premium plans	80%
Users on premium plans (mn)	200
x Subscription ASP	180
Subscription TAM (mn)	36,000
Users on premium plans (mn)	60,000
x Average annual transaction revenue	68
Transaction TAM (mn)	13,600
# of video games purchased annually	3
x Average price per game	60
Video game TAM (mn)	45,000
TAM	169,600

Source: BofA Global Research estimates

Commercial Office

Commercial office 365 revenue as of FY20 is estimated to be \$24.3 billion, growing 24% y/y. Commercial office 365 growth is driven by continual migration onto the cloud based product, from the on premise licenses, as well as adoption of higher ASP product SKUs (i.e. from E1 to E3) given added functionalities (i.e. video calling within Teams which is only available beyond E3, and ability to make outside calls which is only available in E5).

Using McKinsey estimates for 548 million knowledge workers worldwide and our estimated user mix, we arrive at an average ASP of \$187 (\$15.58/user/month), and an addressable market of \$102.5 billion.

Exhibit 37: Commercial Office TAM

	% of users	# of users WW	ASP	TAM
Small business				
Microsoft 365 business	7%	36,168,000	240	
Office 365 business premium	14%	74,144,400	150	
Office 365 business essentials	13%	70,527,600	60	
Total Small Business	33%	180,840,000	132.9	24,034
Enterprise				
Office pro plus	5%	26,852,000	144	
Office 365 E1	5%	26,852,000	96	
Office 365 E3	37%	201,116,000	240	
Office 365 E5	6%	32,880,000	420	
Total Enterprise	53%	287,700,000	238.2	68,522
Other segments				
Office F1 (front line)	9%	47,676,000	48	
Government	6%	31,784,000	240	
Total Other Segments	15%	79,460,000	124.8	9,917
TAM	100%	548,000,000	187.0	102,472

Source: BofA Global Research estimates

Financial model

We model FY21 revenue of \$157.4 billion (+10% y/y), with Productivity and Business Process revenue of \$50.6 billion (+9% y/y, representing 32% of total revenue), Intelligent Cloud revenue of \$57.1 billion (+17% y/y, 36% of total revenue), and Personal Computing revenue of \$49.7 billion (+3% y/y, 32% of total revenue).

We model FY21 EPS of \$6.70. Our EPS estimate assumes total gross margin of 67.7%, up slightly from 67.6% in FY20 for higher Azure and Xbox margins. We are modelling for operating expenses to represent 29.6% of total FY21 revenue, down from 30.7% in FY20 for better scale across R&D, sales/marketing, and G&A.

We forecast FY21 free cash flow of \$49.0 billion, up from \$45.2 billion in FY20. Our free cash flow estimate assumes operating cash flow of \$68.2 billion, up from \$60.7 billion in FY20 driven by higher net income though offset by slightly lower working capital. We estimate capital expenditures of \$19.2 billion, representing 12.2% of total revenue, an increase from FY20's 10.8% for infrastructure investments.

For FY22, we model total revenue of \$174.0 billion, representing 11% y/y growth. We model Productivity and Business Process revenue of \$54.9 billion (+8.4% y/y, 32% of total revenue), Intelligence Cloud revenue of \$67.9 billion (+19% y/y, representing 39% of total revenue), and Personal Computing revenue of \$51.2 billion (+3% y/y, 29% of total revenue).

We model FY22 EPS of \$7.48. Our EPS estimate assumes total gross margin of 68.0%, up slightly from 67.7% in FY21. Operating expenses represent 29.0% of total revenue, down from 29.6% in FY21 for better scale on sales/marketing and G&A.

We forecast FY22 free cash flow of \$56.0 billion, up from our FY21 estimate of \$49.0 billion. Our free cash flow estimate assumes operating cash flow of \$76.8 billion, up from our estimate of \$68.2 billion in FY21. We estimate capital expenditures of \$20.8 billion, representing 12.0% of total revenue, down slightly from our estimate for FY21's 12.2%.

Exhibit 38: Microsoft Income Statement

\$ Billions (except per share data)	YEAR FY18A	YEAR FY19A	Sep. 1Q20A	Dec. 2Q20A	Mar. 3Q20A	June 4Q20A	YEAR FY20A	Sep. 1Q21A	Dec. 2Q21E	Mar. 3Q21E	June 4Q21E	YEAR FY21E	YEAR FY22E	YEAR FY23E
Revenue														
Productivity and Business Processes	\$35.9	\$41.2	\$11.1	\$11.8	\$11.7	\$11.8	\$46.4	\$12.3	\$12.8	\$12.6	\$12.9	\$50.6	\$54.9	\$59.4
Intelligent Cloud	\$32.2	\$39.0	\$10.8	\$11.9	\$12.3	\$13.4	\$48.8	\$13.0	\$13.7	\$14.6	\$15.8	\$57.1	\$67.9	\$81.8
More Personal Computing	\$42.3	\$45.7	\$11.1	\$13.2	\$11.0	\$12.9	\$48.3	\$11.8	\$13.4	\$11.3	\$13.2	\$49.7	\$51.2	\$53.1
Corporate and Other	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total Revenue	\$110.4	\$125.8	\$33.1	\$36.9	\$35.0	\$38.0	\$143.4	\$37.2	\$39.9	\$38.5	\$41.9	\$157.4	\$174.0	\$194.4
Cost of Revenue														
Product	\$0.0	\$0.0	\$3.3	\$5.0	\$3.4	\$4.4	\$0.0	\$3.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Service and Other	\$0.0	\$0.0	\$7.1	\$7.4	\$7.6	\$8.0	\$0.0	\$7.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total Cost of Revenue (GAAP)	\$38.4	\$42.9	\$10.4	\$12.4	\$11.0	\$12.3	\$46.1	\$11.0	\$14.0	\$12.5	\$13.4	\$50.8	\$55.7	\$62.3
Gross Profit (GAAP)	\$72.0	\$82.9	\$22.6	\$24.5	\$24.0	\$25.7	\$96.9	\$26.2	\$25.9	\$26.0	\$28.5	\$106.6	\$118.3	\$132.1
Operating Expenses*														
Research & Development*	\$14.7	\$16.9	\$4.6	\$4.6	\$4.9	\$5.2	\$19.3	\$4.9	\$5.0	\$5.3	\$5.7	\$20.8	\$22.7	\$25.2
Sales & Marketing*	\$17.5	\$18.2	\$4.3	\$4.9	\$4.9	\$5.4	\$19.6	\$4.2	\$5.3	\$5.4	\$6.0	\$20.9	\$22.6	\$23.8
General & Administration*	\$4.8	\$4.9	\$1.1	\$1.1	\$1.3	\$1.7	\$5.1	\$1.1	\$1.2	\$1.2	\$1.4	\$4.9	\$5.2	\$5.8
Goodwill Impairment / Restructuring	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Operating Expenses*	\$36.9	\$40.0	\$10.0	\$10.7	\$11.1	\$12.3	\$44.0	\$10.3	\$11.5	\$11.8	\$13.0	\$46.6	\$50.4	\$54.8
Operating Income (GAAP)	\$35.1	\$43.0	\$12.7	\$13.9	\$13.0	\$13.4	\$53.0	\$15.9	\$14.4	\$14.2	\$15.5	\$60.0	\$67.9	\$77.2
Investment Income / (Expense)	\$1.4	\$0.7	\$0.0	\$0.2	(\$0.1)	\$0.0	\$0.1	\$0.2	\$0.0	\$0.0	\$0.0	\$0.2	\$0.0	\$0.0
Pretax Income (GAAP)	\$36.5	\$43.7	\$12.7	\$14.1	\$12.8	\$13.4	\$53.0	\$16.1	\$14.4	\$14.2	\$15.5	\$60.3	\$67.9	\$77.2
Income Tax Expense (GAAP)	\$19.9	\$4.4	\$2.0	\$2.4	\$2.1	\$2.2	\$8.8	\$2.2	\$2.3	\$2.3	\$2.5	\$9.3	\$11.5	\$13.1
Net Income (GAAP)	\$16.6	\$39.2	\$10.7	\$11.6	\$10.8	\$11.2	\$44.3	\$13.9	\$12.1	\$11.9	\$13.0	\$51.0	\$56.4	\$64.1
EPS (GAAP)	\$2.13	\$5.06	\$1.38	\$1.51	\$1.40	\$1.46	\$5.76	\$1.82	\$1.59	\$1.57	\$1.72	\$6.70	\$7.48	\$8.60
Total Revenue (Pro forma)	\$110.4	\$125.8	\$33.1	\$36.9	\$35.0	\$38.0	\$143.0	\$37.2	\$39.9	\$38.5	\$41.9	\$157.4	\$174.0	\$194.4
Total Cost of Revenue (GAAP)	\$38.4	\$42.9	\$10.4	\$12.4	\$11.0	\$12.3	\$46.1	\$11.0	\$14.0	\$12.5	\$13.4	\$50.8	\$55.7	\$62.3
Adjustments (LinkedIn Amortization)	\$0.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total Cost of Revenue (Pro forma, incl LNKD amort)	\$38.4	\$42.9	\$10.4	\$12.4	\$11.0	\$12.3	\$46.1	\$11.0	\$14.0	\$12.5	\$13.4	\$50.8	\$55.7	\$62.3
Total Gross Profit (GAAP)	\$72.0	\$82.9	\$22.6	\$24.5	\$24.0	\$25.7	\$96.9	\$26.2	\$25.9	\$26.0	\$28.5	\$106.6	\$118.3	\$132.1
Less: Total Cost of Revenue (Pro forma, incl LNKD amort)	(\$38.4)	(\$42.9)	(\$10.4)	(\$12.4)	(\$11.0)	(\$12.3)	(\$46.1)	(\$11.0)	(\$14.0)	(\$12.5)	(\$13.4)	(\$50.8)	(\$55.7)	(\$62.3)
Adjustments	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total Gross Profit (Pro forma)	\$72.0	\$82.9	\$22.6	\$24.5	\$24.0	\$25.7	\$96.9	\$26.2	\$25.9	\$26.0	\$28.5	\$106.6	\$118.3	\$132.1
Operating Expenses* (GAAP)	\$36.9	\$40.0	\$10.0	\$10.7	\$11.1	\$12.3	\$44.0	\$10.3	\$11.5	\$11.8	\$13.0	\$46.6	\$50.4	\$54.8
Less: Extraordinary Charges	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Less: Impairments	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Adjustments (LinkedIn amortization))	\$0.6	\$0.6	\$0.2	\$0.2	\$0.2	\$0.2	\$0.6	\$0.2	\$0.2	\$0.2	\$0.2	\$0.6	\$0.6	\$0.6
Operating Expenses (Pro forma incl LNKD amort)	\$36.9	\$40.0	\$10.0	\$10.7	\$11.1	\$12.3	\$44.0	\$10.3	\$11.5	\$11.8	\$13.0	\$46.6	\$50.4	\$54.8
Less: Operating Expenses (Pro forma incl LNKD amort)	(\$36.9)	(\$40.0)	(\$10.0)	(\$10.7)	(\$11.1)	(\$12.3)	(\$44.0)	(\$10.3)	(\$11.5)	(\$11.8)	(\$13.0)	(\$46.6)	(\$50.4)	(\$54.8)
Operating Income (Pro forma)	\$35.1	\$43.0	\$12.7	\$13.9	\$13.0	\$13.4	\$53.0	\$15.9	\$14.4	\$14.2	\$15.5	\$60.0	\$67.9	\$77.2
0	\$1.4	\$0.7	\$0.0	\$0.2	(\$0.1)	\$0.0	\$0.1	\$0.2	\$0.0	\$0.0	\$0.0	\$0.2	\$0.0	\$0.0
Pretax Income (Incl. stock comp)	\$36.5	\$43.7	\$12.7	\$14.1	\$12.8	\$13.4	\$53.0	\$16.1	\$14.4	\$14.2	\$15.5	\$60.3	\$67.9	\$77.2
Income Tax Expense (Pro forma)	\$6.2	\$6.9	\$2.0	\$2.4	\$2.1	\$2.2	\$8.8	\$2.2	\$2.3	\$2.3	\$2.5	\$9.3	\$11.5	\$13.1
Net Income (Pro forma, incl. stock comp)	\$30.3	\$36.8	\$10.7	\$11.6	\$10.8	\$11.2	\$44.3	\$13.9	\$12.1	\$11.9	\$13.0	\$51.0	\$56.4	\$64.1
EPS (Pro forma, Incl. stock comp)	\$3.90	\$4.75	\$1.38	\$1.51	\$1.40	\$1.46	\$5.76	\$1.82	\$1.59	\$1.57	\$1.72	\$6.70	\$7.48	\$8.60
Shares (fully diluted)	7.8	7.8	7.7	7.7	7.7	7.7	7.7	7.6	7.6	7.6	7.6	7.6	7.5	7.5

Source: BofA Global Research estimates, company filings

Exhibit 39: Microsoft Income Statement Analysis

	YEAR FY18A	YEAR FY19A	Sep. 1Q20A	Dec. 2Q20A	Mar. 3Q20A	June 4Q20A	YEAR FY20A	Sep. 1Q21A	Dec. 2Q21E	Mar. 3Q21E	June 4Q21E	YEAR FY21E	YEAR FY22E	YEAR FY23E
Margin & Growth Analysis														
Gross Margin (GAAP reported)	65.2%	65.9%	68.5%	66.5%	68.7%	67.6%	67.6%	70.4%	64.9%	67.6%	68.1%	67.7%	68.0%	67.9%
Gross Margin (GAAP)	65.2%	65.9%	68.5%	66.5%	68.7%	67.6%	67.6%	70.4%	64.9%	67.6%	68.1%	67.7%	68.0%	67.9%
Research & Development*	13.3%	13.4%	13.8%	12.5%	14.0%	13.7%	13.4%	13.3%	12.5%	13.7%	13.5%	13.2%	13.0%	13.0%
Sales & Marketing*	15.8%	14.5%	13.1%	13.4%	14.0%	14.2%	13.7%	11.4%	13.3%	14.0%	14.2%	13.3%	13.0%	12.2%
General & Administration*	4.3%	3.9%	3.2%	3.0%	3.6%	4.4%	3.6%	3.0%	3.0%	3.0%	3.3%	3.1%	3.0%	3.0%
Operating Margin (GAAP)	0.0%	34.1%	38.4%	37.6%	37.0%	35.3%	36.9%	42.7%	36.2%	36.9%	37.1%	38.1%	39.0%	39.7%
Operating Margin (Pro forma)	31.8%	34.1%	38.4%	37.6%	37.0%	35.3%	37.0%	42.7%	36.2%	36.9%	37.1%	38.1%	39.0%	39.7%
Pro forma Opex as % of Revenue	33.5%	31.8%	30.1%	28.9%	31.6%	32.3%	30.8%	27.7%	28.7%	30.7%	31.0%	29.6%	29.0%	28.2%
Tax Rate (Pro forma)	17.0%	15.7%	15.8%	17.3%	16.3%	16.5%	16.5%	13.8%	16.0%	16.0%	16.0%	15.4%	17.0%	17.0%
Tax Rate (GAAP)	54.6%	10.2%	15.8%	17.3%	16.3%	16.5%	16.5%	13.8%	16.0%	16.0%	16.0%	15.4%	17.0%	17.0%
Net Margin (Pro forma)	27.4%	29.3%	32.3%	31.6%	30.7%	29.5%	31.0%	37.4%	30.4%	31.0%	31.1%	32.4%	32.4%	33.0%
Net Margin (GAAP)	15.0%	31.2%	32.3%	31.6%	30.7%	29.5%	30.9%	37.4%	30.4%	31.0%	31.1%	32.4%	32.4%	33.0%
Growth Rates														
Quarter-over-Quarter														
Total Revenue (GAAP)	14.3%	14.0%	(2.0%)	11.7%	(5.1%)	8.6%	14.0%	(2.3%)	7.4%	(3.5%)	8.9%	9.8%	10.5%	11.7%
Productivity and Business Processes	20.1%	14.8%	0.3%	6.8%	(0.7%)	0.1%	12.7%	4.8%	4.1%	(2.1%)	3.0%	9.1%	8.4%	8.3%
Intelligent Cloud	17.6%	21.0%	(4.8%)	9.4%	3.5%	8.9%	25.1%	(2.9%)	5.3%	6.9%	8.2%	17.1%	19.0%	20.4%
More Personal Computing	7.6%	8.1%	(1.3%)	18.7%	(16.8%)	17.4%	5.6%	(8.2%)	13.1%	(15.5%)	16.2%	3.1%	3.0%	3.8%
Total Pro Forma Revenue	14.3%	14.0%	(2.0%)	11.7%	(5.1%)	8.6%	13.6%	(2.3%)	7.4%	(3.5%)	8.9%	10.1%	10.5%	11.7%
Research & Development	13.0%	14.6%	1.2%	0.8%	6.2%	6.7%	14.2%	(5.5%)	1.0%	6.0%	7.3%	8.1%	8.9%	11.3%
Sales & Marketing	13.0%	4.3%	(12.6%)	13.7%	(0.4%)	10.3%	7.6%	(21.9%)	25.1%	2.0%	10.6%	6.6%	8.1%	5.3%
General & Administrative	6.1%	2.8%	(25.5%)	5.7%	13.6%	30.1%	4.6%	(32.4%)	6.9%	(3.5%)	19.7%	(5.0%)	6.9%	11.7%
Year-over-Year														
Revenue														
Productivity and Business Processes	20.1%	14.8%	13.4%	17.1%	14.7%	6.4%	12.7%	11.2%	8.4%	6.9%	10.1%	9.1%	8.4%	8.3%
Intelligent Cloud	17.6%	21.0%	26.6%	26.6%	27.3%	17.4%	25.1%	19.7%	15.2%	19.0%	18.2%	17.1%	19.0%	20.4%
More Personal Computing	7.6%	8.1%	3.6%	1.7%	3.0%	14.5%	5.6%	6.4%	1.4%	3.0%	1.9%	3.1%	3.0%	3.8%
Total Revenue	14.3%	14.0%	13.7%	13.7%	14.6%	12.8%	13.6%	12.4%	8.1%	9.9%	10.2%	10.1%	10.5%	11.7%
COGS	11.9%	11.9%	5.1%	(0.5%)	7.9%	18.5%	7.4%	5.7%	13.3%	13.5%	8.3%	10.3%	9.6%	11.9%
COGS Pro Forma	11.9%	11.9%	5.1%	(0.5%)	7.9%	18.5%	7.4%	5.7%	13.3%	13.5%	8.3%	10.3%	9.6%	11.9%
Gross Profit pro Forma	15.6%	15.2%	18.1%	22.4%	17.9%	10.3%	16.9%	15.5%	5.5%	8.3%	11.0%	10.0%	11.0%	11.6%
R&D	13.0%	14.6%	14.8%	13.1%	13.2%	15.5%	14.2%	7.9%	8.1%	7.9%	8.5%	8.1%	8.9%	11.3%
S&M	13.0%	4.3%	5.8%	7.5%	7.6%	9.2%	7.6%	(2.4%)	7.3%	9.9%	10.2%	6.6%	8.1%	5.3%
G&A	6.1%	2.8%	(7.7%)	(1.0%)	8.0%	16.2%	4.6%	5.5%	6.8%	(9.3%)	(16.5%)	(5.0%)	6.9%	11.7%
Operating Expense (GAAP)	11.0%	8.2%	8.0%	8.9%	10.0%	12.7%	10.0%	3.1%	7.6%	6.8%	5.9%	5.9%	8.3%	8.7%
Operating Income (Pro forma)	19.5%	22.5%	27.4%	35.4%	25.5%	8.1%	23.3%	25.1%	3.9%	9.5%	15.8%	13.4%	13.1%	13.8%
Net Income (Pro forma, incl. stock comp)	26.7%	21.7%	21.0%	35.8%	22.1%	5.5%	20.2%	30.1%	4.0%	11.0%	16.4%	15.1%	10.5%	13.8%
EPS (Pro forma)	27.7%	22.0%	21.9%	37.2%	23.2%	6.6%	21.3%	31.4%	5.0%	12.1%	17.5%	16.3%	11.6%	14.9%
Net Income (GAAP)	(35.0%)	136.8%	21.0%	38.3%	22.1%	(15.1%)	12.8%	30.1%	4.0%	11.0%	16.4%	15.1%	10.5%	13.8%
EPS (GAAP)	(34.5%)	137.3%	21.9%	39.7%	23.2%	(14.2%)	13.9%	31.4%	5.0%	12.1%	17.5%	16.3%	11.6%	14.9%

Source: BoFA Global Research estimates. company filings

Exhibit 40: Microsoft Balance Sheet

\$ Billions (except per share data)	YEAR FY18A	YEAR FY19A	Sep. 1Q20A	Dec. 2Q20A	Mar. 3Q20A	June 4Q20A	YEAR FY20A	Sep. 1Q21A	Dec. 2Q21E	Mar. 3Q21E	June 4Q21E	YEAR FY21E	YEAR FY22E	YEAR FY23E
Current Assets														
Cash & Equivalents	\$11.9	\$11.4	\$13.1	\$8.9	\$11.7	\$13.6	\$13.6	\$17.2	\$16.8	\$18.8	\$17.5	\$17.5	\$35.7	\$64.0
Short-Term Investments	\$121.8	\$122.5	\$123.5	\$125.4	\$125.9	\$123.0	\$123.0	\$120.8	\$121.4	\$118.5	\$118.2	\$118.2	\$113.8	\$109.1
Total Accounts Receivable	\$26.5	\$29.5	\$19.1	\$23.5	\$22.7	\$32.0	\$32.0	\$22.9	\$25.0	\$24.9	\$35.3	\$35.3	\$40.8	\$47.4
Deferred Taxes	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Inventories	\$2.7	\$2.1	\$2.6	\$1.8	\$1.6	\$1.9	\$1.9	\$2.7	\$1.8	\$1.8	\$2.1	\$2.1	\$2.3	\$2.6
Other Current Assets	\$6.8	\$10.1	\$7.6	\$7.5	\$8.5	\$11.5	\$11.5	\$13.5	\$10.8	\$9.4	\$12.6	\$12.6	\$15.8	\$17.6
Total Current Assets	\$169.7	\$175.6	\$165.9	\$167.1	\$170.5	\$181.9	\$181.9	\$177.1	\$175.6	\$173.4	\$185.7	\$185.7	\$208.4	\$240.7
Net PP&E	\$29.5	\$36.5	\$38.4	\$40.5	\$41.2	\$44.2	\$44.2	\$47.9	\$50.4	\$51.9	\$54.4	\$54.4	\$62.9	\$71.2
Equity Investments	\$1.9	\$2.6	\$2.7	\$2.8	\$2.7	\$3.0	\$3.0	\$3.1	\$3.1	\$3.1	\$3.1	\$3.1	\$3.1	\$3.1
Goodwill	\$35.7	\$42.0	\$42.1	\$42.2	\$42.1	\$43.4	\$43.4	\$43.9	\$43.7	\$43.5	\$43.3	\$43.3	\$43.2	\$41.6
Other	\$15.5	\$22.5	\$22.0	\$21.8	\$20.6	\$20.2	\$20.2	\$20.0	\$20.3	\$20.1	\$20.1	\$20.1	\$20.2	\$20.2
Total Assets	\$258.8	\$286.6	\$279.0	\$282.8	\$285.4	\$301.3	\$301.3	\$301.0	\$293.1	\$292.1	\$306.6	\$306.6	\$337.1	\$376.7
Current Liabilities														
Short-Term Unearned Revenue	\$28.9	\$32.7	\$29.9	\$27.3	\$27.0	\$36.0	\$36.0	\$33.5	\$30.5	\$30.5	\$40.2	\$40.2	\$45.4	\$51.1
Payables	\$8.6	\$9.4	\$8.6	\$8.8	\$9.2	\$12.5	\$12.5	\$12.5	\$12.3	\$12.7	\$13.0	\$13.0	\$13.5	\$15.0
Accrued Compensation	\$6.1	\$6.8	\$4.7	\$5.4	\$6.3	\$7.9	\$7.9	\$5.7	\$5.7	\$5.7	\$6.7	\$6.7	\$7.4	\$8.2
Income Taxes	\$2.1	\$5.7	\$3.4	\$2.7	\$3.3	\$2.1	\$2.1	\$2.4	\$2.4	\$2.4	\$2.5	\$2.5	\$2.8	\$3.1
Short-Term Debt	\$4.0	\$5.5	\$3.0	\$6.2	\$3.7	\$3.7	\$3.7	\$6.5	\$6.5	\$6.5	\$6.5	\$6.5	\$6.5	\$6.5
Other	\$8.7	\$9.4	\$8.5	\$9.1	\$9.2	\$10.0	\$10.0	\$9.5	\$9.5	\$9.5	\$9.5	\$9.5	\$10.4	\$11.6
Total Current Liabilities	\$58.5	\$69.4	\$58.1	\$59.6	\$58.7	\$72.3	\$72.3	\$70.1	\$66.9	\$67.3	\$78.4	\$78.4	\$86.0	\$95.5
LT Unearned Revenue	\$3.8	\$4.5	\$4.1	\$3.9	\$3.4	\$3.2	\$3.2	\$2.8	\$4.3	\$3.7	\$3.5	\$3.5	\$3.9	\$4.4
Deferred Income Taxes	\$0.5	\$29.6	\$28.5	\$28.8	\$29.1	\$29.6	\$29.6	\$28.4	\$29.6	\$28.4	\$29.6	\$29.6	\$29.6	\$29.6
LT Debt	\$72.2	\$66.7	\$66.5	\$63.4	\$62.9	\$59.6	\$59.6	\$57.1	\$54.4	\$52.3	\$51.0	\$51.0	\$43.2	\$35.8
LT Other	\$41.0	\$14.0	\$9.1	\$9.9	\$9.7	\$10.6	\$10.6	\$11.5	\$12.0	\$12.5	\$13.0	\$13.0	\$15.5	\$18.0
Total Liabilities	\$176.1	\$184.2	\$172.9	\$172.7	\$170.9	\$183.0	\$183.0	\$177.6	\$167.2	\$164.2	\$175.6	\$175.6	\$178.3	\$183.4
Total Stockholders' Equity	\$82.7	\$102.3	\$106.1	\$110.1	\$114.5	\$118.3	\$118.3	\$123.4	\$125.9	\$127.8	\$131.0	\$131.0	\$158.8	\$193.3
Total Liabilities & Equity	\$258.8	\$286.6	\$279.0	\$282.8	\$285.4	\$301.3	\$301.3	\$301.0	\$293.1	\$292.1	\$306.6	\$306.6	\$337.1	\$376.7

Source: BoFA Global Research estimates. company filings

Exhibit 41: Microsoft Cash Flow Statement

\$ Billions (except per share data)	YEAR FY18A	YEAR FY19A	Sep. 1Q20A	Dec. 2Q20A	Mar. 3Q20A	June 4Q20A	YEAR FY20A	Sep. 1Q21A	Dec. 2Q21E	Mar. 3Q21E	June 4Q21E	YEAR FY21E	YEAR FY22E	YEAR FY23E
Net Income	\$16.6	\$39.2	\$10.7	\$11.6	\$10.8	\$11.2	\$44.3	\$13.9	\$12.1	\$11.9	\$13.0	\$51.0	\$56.4	\$64.1
Depreciation & Amortization	\$10.3	\$11.7	\$3.0	\$3.2	\$3.1	\$3.5	\$12.8	\$2.6	\$2.9	\$3.1	\$3.2	\$11.8	\$14.5	\$17.0
Stock option compensation, tax benefits	\$3.9	\$4.7	\$1.3	\$1.3	\$1.3	\$1.3	\$5.3	\$1.5	\$1.4	\$1.4	\$1.4	\$5.6	\$5.7	\$5.8
Net Investment (Gains) / Losses	(\$2.2)	(\$0.8)	\$0.0	(\$0.2)	\$0.1	(\$0.1)	(\$0.2)	(\$0.1)	\$0.0	\$0.0	\$0.0	(\$0.1)	\$0.0	\$0.0
Deferred Income Taxes	(\$5.1)	(\$6.5)	(\$0.2)	(\$0.1)	(\$0.2)	\$0.4	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.0
Unearned Revenue *	\$5.9	\$4.5	(\$2.9)	(\$2.9)	(\$0.7)	\$8.8	\$2.2	(\$3.1)	(\$1.5)	(\$0.6)	\$9.5	\$4.4	\$5.6	\$6.1
Recognition of Unearned Revenue	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Excess Tax Benefits from SBC	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Other	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Change in Working Capital	\$14.5	(\$0.6)	\$2.0	(\$2.3)	\$3.2	(\$6.5)	(\$3.7)	\$4.5	\$1.9	\$2.2	(\$13.0)	(\$4.4)	(\$5.3)	(\$3.6)
Changes in AR	(\$3.9)	(\$2.8)	\$10.1	(\$4.2)	\$0.9	(\$9.4)	(\$2.6)	\$8.8	(\$2.1)	\$0.0	(\$10.3)	(\$3.6)	(\$5.5)	(\$6.6)
Other current assets	(\$1.4)	(\$1.1)	(\$1.0)	\$1.0	\$0.3	(\$2.4)	(\$2.2)	(\$0.9)	\$3.7	\$1.3	(\$3.5)	\$0.7	(\$3.4)	(\$2.0)
Other long term assets	(\$0.3)	(\$1.8)	(\$0.3)	(\$0.5)	\$0.1	(\$0.3)	(\$1.0)	(\$0.1)	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.1)	(\$0.0)	(\$0.0)
Other current liabilities	(\$0.2)	\$1.0	(\$3.9)	\$1.0	\$2.0	\$4.9	\$4.1	(\$3.6)	(\$0.2)	\$0.3	\$0.4	(\$3.1)	\$1.1	\$2.5
Other long term liabilities	\$20.3	\$4.2	(\$2.9)	\$0.4	(\$0.1)	\$0.6	(\$2.0)	\$0.2	\$0.5	\$0.5	\$0.5	\$1.7	\$2.5	\$2.5
Cash Flow from Operations	\$43.9	\$52.2	\$13.8	\$10.7	\$17.5	\$18.7	\$60.7	\$19.3	\$16.7	\$18.0	\$14.1	\$68.2	\$76.8	\$89.4
Common Stock Issued	\$1.0	\$1.1	\$0.4	\$0.2	\$0.3	\$0.3	\$1.3	\$0.5	\$0.5	\$0.5	\$0.5	\$2.2	\$1.0	\$1.0
Common Stock Repurchased	(\$10.7)	(\$19.5)	(\$4.9)	(\$5.2)	(\$7.1)	(\$5.8)	(\$23.0)	(\$6.7)	(\$6.7)	(\$6.7)	(\$6.7)	(\$27.0)	(\$17.0)	(\$17.0)
Common Stock Dividends	(\$12.7)	(\$13.8)	(\$3.5)	(\$3.9)	(\$3.9)	(\$3.9)	(\$15.1)	(\$3.9)	(\$4.2)	(\$4.2)	(\$4.2)	(\$16.5)	(\$17.2)	(\$18.4)
Net Proceeds / Repayments on Debt	(\$10.2)	(\$4.0)	(\$2.5)	(\$0.0)	(\$3.0)	(\$3.4)	(\$8.9)	\$0.0	(\$2.6)	(\$2.1)	(\$1.2)	(\$6.0)	(\$7.8)	(\$7.4)
Excess Tax Benefits from SBC	(\$1.0)	(\$0.7)	\$0.3	\$0.0	\$0.0	\$0.0	\$0.3	(\$0.2)	(\$0.0)	(\$0.1)	(\$0.1)	(\$0.5)	(\$0.4)	(\$0.4)
Other	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$1.1)	\$0.5	(\$0.6)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Cash Flow from Financing	(\$33.6)	(\$36.9)	(\$10.2)	(\$8.9)	(\$14.6)	(\$12.3)	(\$46.0)	(\$10.3)	(\$13.1)	(\$12.7)	(\$11.8)	(\$47.8)	(\$41.4)	(\$42.2)
Capital Expenditures	(\$11.6)	(\$13.9)	(\$3.4)	(\$3.5)	(\$3.8)	(\$4.7)	(\$15.4)	(\$4.9)	(\$4.9)	(\$4.1)	(\$5.2)	(\$19.2)	(\$20.8)	(\$22.7)
Acquisitions	(\$0.9)	(\$2.4)	(\$0.5)	(\$0.1)	(\$0.3)	(\$1.7)	(\$2.5)	(\$0.5)	\$0.0	\$0.0	\$0.0	(\$0.5)	\$0.0	\$0.0
Purchases of Investments	(\$137.4)	(\$57.7)	(\$23.4)	(\$19.0)	(\$15.9)	(\$18.9)	(\$77.2)	(\$14.6)	(\$16.7)	(\$17.1)	(\$15.7)	(\$64.0)	(\$65.9)	(\$65.6)
Maturities of Investments	\$26.4	\$20.0	\$19.1	\$11.2	\$17.2	\$18.9	\$66.4	\$14.3	\$15.4	\$16.5	\$16.3	\$62.4	\$63.5	\$63.7
Sales of Investments	\$117.6	\$38.2	\$6.4	\$5.4	\$2.8	\$3.2	\$17.7	\$2.4	\$2.9	\$2.9	\$2.6	\$10.8	\$11.1	\$11.1
Other	(\$0.1)	\$0.0	\$0.0	\$0.0	\$0.0	(\$1.2)	(\$1.2)	(\$2.1)	(\$0.8)	(\$1.4)	(\$1.5)	(\$5.8)	(\$5.2)	(\$5.4)
Cash Flow from Investing	(\$6.1)	(\$15.8)	(\$1.8)	(\$6.0)	\$0.1	(\$4.5)	(\$12.2)	(\$5.4)	(\$4.1)	(\$3.3)	(\$3.6)	(\$16.4)	(\$17.2)	(\$18.9)
Net Change in Cash	\$4.2	(\$0.5)	\$1.8	(\$4.3)	\$2.9	\$1.9	\$2.4	\$3.7	(\$0.5)	\$2.0	(\$1.2)	\$4.0	\$18.2	\$28.3
Effect of Exchange Rates	\$0.1	(\$0.1)	(\$0.1)	\$0.0	(\$0.1)	(\$0.1)	(\$0.2)	\$0.3	\$0.0	\$0.0	\$0.0	\$0.3	\$0.0	\$0.0
Cash at Beginning of Period	\$7.3	\$11.6	\$11.0	\$12.8	\$8.5	\$11.3	\$11.0	\$13.2	\$17.2	\$16.8	\$18.8	\$13.2	\$17.5	\$35.7
Cash at End of Period	\$11.6	\$11.0	\$12.8	\$8.5	\$11.3	\$13.2	\$13.2	\$17.2	\$16.8	\$18.8	\$17.5	\$17.5	\$35.7	\$64.0

Source: BofA Global Research estimates, company filings

Price objective basis & risk

Microsoft Corporation (MSFT)

Our PO of \$256 is based on an EV/FCF multiple of 29x our C22 free cash flow estimate of \$63.5 billion, a discount to the large cap SaaS software group trading at 38x for a lower growth rate (19% y/y in C22 vs. group at 24%) though at a much larger scale.

Risks to our price objective:

1) Microsoft could see some near term gross margin pressure as the Azure business grows as a percentage of overall revenue. While Microsoft's on premise offerings offer a high margin profile, growth in these lines of business is decelerating.

2) Enterprise application spending has proven to be highly cyclical, given the more discretionary nature of applications projects. During an economic slowdown, when firms are faced with shrinking IT budgets, projects involving application upgrades, migrations or new installations are often deferred. This could present a higher degree of risk for a bookings deceleration for Microsoft and other application vendors, in the event of an economic slowdown.

Analyst Certification

I, Brad Sills, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

US - Enterprise Software Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Alteryx, Inc	AYX	AYX US	Brad Sills
	Avalara Inc	AVLR	AVLR US	Brad Sills
	Bill.com, Inc.	BILL	BILL US	Brad Sills
	Coupa Software Inc	COUP	COUP US	Brad Sills
	Duck Creek Technologies, Inc.	DCT	DCT US	Brad Sills
	Dynatrace	DT	DT US	Brad Sills
	Microsoft Corporation	MSFT	MSFT US	Brad Sills
	nCino, Inc.	NCNO	NCNO US	Brad Sills
	Salesforce.com	CRM	CRM US	Brad Sills
	SurveyMonkey, Inc	SVMK	SVMK US	Brad Sills
	Veeva Systems, Inc.	VEEV	VEEV US	Brad Sills
	Zendesk, Inc.	ZEN	ZEN US	Brad Sills
	ZoomInfo	ZI	ZI US	Brad Sills
NEUTRAL				
	Bentley Systems	BSY	BSY US	Brad Sills
	Datto	MSP	MSP US	Brad Sills
	Everbridge	EBVG	EBVG US	Brad Sills
	Guidewire Software, Inc.	GWRE	GWRE US	Brad Sills
	JFrog Ltd	FROG	FROG US	Brad Sills
	Unity Software Inc.	U	U US	Ryan Gee
	Vertex, Inc.	VERX	VERX US	Brad Sills
UNDERPERFORM				
	Blackbaud, Inc.	BLKB	BLKB US	Brad Sills
	Cornerstone OnDemand, Inc.	CSOD	CSOD US	Brad Sills
	Shopify, Inc.	SHOP	SHOP US	Brad Sills
RSTR				
	Jamf	JAMF	JAMF US	Brad Sills

iQ^{method} SM Measures Definitions

Business Performance		Numerator	Denominator
Return On Capital Employed		$\text{NOPAT} = (\text{EBIT} + \text{Interest Income}) * (1 - \text{Tax Rate}) + \text{Goodwill Amortization}$	$\text{Total Assets} - \text{Current Liabilities} + \text{ST Debt} + \text{Accumulated Goodwill Amortization}$
Return On Equity		Net Income	Shareholders' Equity
Operating Margin		Operating Profit	Sales
Earnings Growth		Expected 5-Year CAGR From Latest Actual	N/A
Free Cash Flow		Cash Flow From Operations – Total Capex	N/A
Quality of Earnings			
Cash Realization Ratio		Cash Flow From Operations	Net Income
Asset Replacement Ratio		Capex	Depreciation
Tax Rate		Tax Charge	Pre-Tax Income
Net Debt-To-Equity Ratio		$\text{Net Debt} = \text{Total Debt, Less Cash \& Equivalents}$	Total Equity
Interest Cover		EBIT	Interest Expense
Valuation Toolkit			
Price / Earnings Ratio		Current Share Price	Diluted Earnings Per Share (Basis As Specified)
Price / Book Value		Current Share Price	Shareholders' Equity / Current Basic Shares
Dividend Yield		Annualised Declared Cash Dividend	Current Share Price
Free Cash Flow Yield		Cash Flow From Operations – Total Capex	Market Cap. = Current Share Price * Current Basic Shares
Enterprise Value / Sales		$\text{EV} = \text{Current Share Price} * \text{Current Shares} + \text{Minority Equity} + \text{Net Debt} + \text{Other LT Liabilities}$	Sales
EV / EBITDA		Enterprise Value	Basic EBIT + Depreciation + Amortization

iQ^{method} SM is the set of BofA Global Research standard measures that serve to maintain global consistency under three broad headings: Business Performance, Quality of Earnings, and validations. The key features of iQ^{method} are: A consistently structured, detailed, and transparent methodology. Guidelines to maximize the effectiveness of the comparative valuation process, and to identify some common pitfalls.

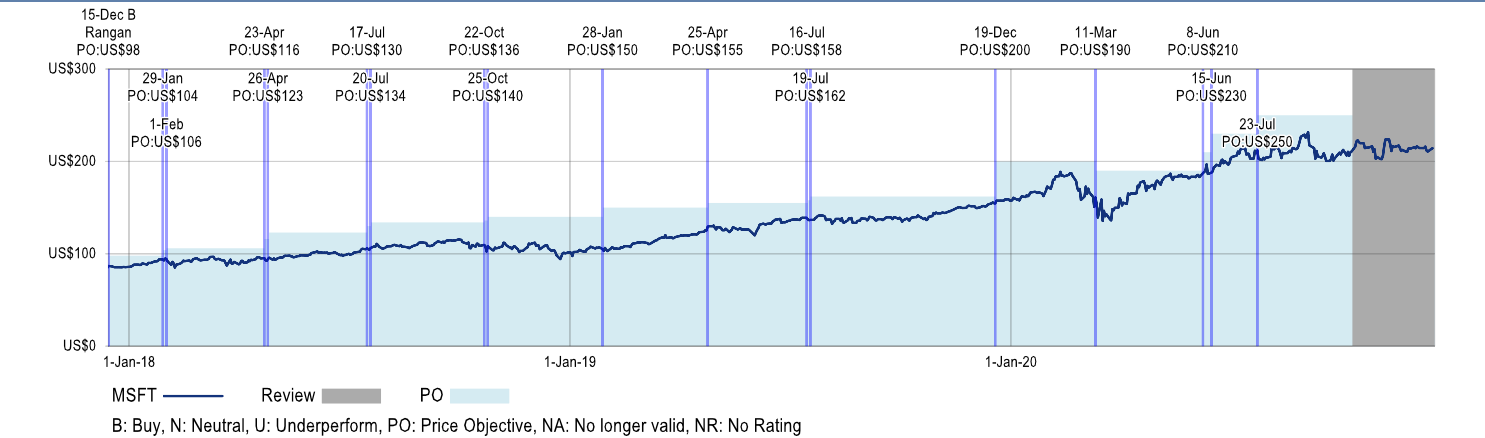
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Disclosures

Important Disclosures

Microsoft (MSFT) Price Chart



The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

Equity Investment Rating Distribution: Technology Group (as of 30 Sep 2020)

Coverage Universe	Count	Percent	Inv. Banking Relationships*	Count	Percent
Buy	172	60.99%	Buy	115	66.86%
Hold	54	19.15%	Hold	35	64.81%
Sell	56	19.86%	Sell	24	42.86%

Equity Investment Rating Distribution: Global Group (as of 30 Sep 2020)

Coverage Universe	Count	Percent	Inv. Banking Relationships*	Count	Percent
Buy	1749	54.79%	Buy	1114	63.69%
Hold	677	21.21%	Hold	415	61.30%
Sell	766	24.00%	Sell	386	50.39%

* Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster*
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

* Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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