

MICROSOFT (NASDAQ) - MSFT

Company Description:

Redmond, WA-based Microsoft Corp. is the largest independent maker of software. It develops and sells software products for a wide range of computing environments in consumer and enterprise markets. Hardware products include the Xbox video game console, and Surface tablet. Revenue sources: More Personal Computing (Windows, Gaming, Devices), 44%; Productivity and Bness (Office) 29%; Intelligent Cloud 27%. R&D, 13% of revenues. Employed 114,000. Stock owners: William H. Gates, 2.8%; Chmn: John Thompson; CEO: Satya Nadella. www.microsoft.com.

Basic Description:

Earnings grew rapidly until 2000. Since that time, earnings growth has slowed significantly and have flattened for the past few years, while relying on non-GAAP numbers. Reflecting this decline in growth rates, P/E ratios steadily dropped while the stock price became range bound (20 to 50) until the new CEO changed focus. In light of reduced growth opportunities, MSFT has increased its dividend, now at a payout ratio of 50%, and making significant share repurchases. Cash and marketable securities on the balance sheet has continued to build, but have been partially offset by a rise in long term debt. Revenue growth has continued to build offset by declining operating margins and increased depreciation rates. Long term debt does allow foreign earnings to remain untaxed.

Profitability Description:

Operating margins continue to be extraordinarily high, although they have been dropping as MSFT attempts to move beyond its core dominance in Windows and Office products. With the purchase of Nokia, gaming devices linkedin, the relatively new CEO, MSFT has focused on a "cloud first, mobility first" model that is reorganizing around "personal" and "business productivity" and "cloud". MSFT is experiencing higher revenues, higher capex, higher depreciation and lower margins as a result. The new segment organization is built to take the focus off of product and place it on the nature of the user. As a productivity-oriented company, it is natural that the commercial aspect of the business is the real source of profits. Like other engineering-based high tech firms, stock options cause a \$3 bln use of cash flows to simply stay even on share count. In a sense, it's the new IBM.

Core Advantage Description:

MSFT has been challenged around the world to demonstrate that it is not a monopoly and has failed to do so. That describes its core advantage. The Office Suite and Windows systems are almost ubiquitous globally. This intellectual franchise was funded by the "forced economics" of upgrades but has been changed by the increased role of mobility as a productivity platform. In this, MSFT has repeatedly failed. In addition, the movement to the cloud has redefined the business model. However, in this area, MSFT has leveraged on its traditional business productivity emphasis to become a leader in the corporate environment as almost the "new IBM." The high margins are the result of this business dominance with the benefits of standardized software. As Apple and Google have demonstrated, dominance in one sector of computing does not imply dominance in other areas and it seems unlikely that consumers will ever be attracted to the "clunkiness" of MSFT platforms and products.

Investment Thesis:

MSFT has significant dominance advantages in the enviable software space. However, MSFT is challenged in the consumer and mobility environments. In a connected way, loss of mobility positioning puts productivity software at risk, but MSFT's moves in the cloud are critically important as an offset. MSFT has many opportunities and a powerful balance sheet. Currently, the stock has risen on the mantra "cloud first, mobile first." ACM has reduced 10 year earnings growth to 6% based on stable margins with share buybacks adding 2% more for a total of 8% and a terminal P/E of 18 based on its margins and sustainability of its corporate positioning.

Purchase Description:

Given the above factors, we would recommend patient, value-oriented investors purchase shares of MSFT as a Tier II at prices up to \$40 per share (ave of e.g. and capl charge approach), with a total sell at the blended rate of \$73 of fair value and high value. Given the business strength, I would recommend the latter (the sell may raise by then).

Investment Characteristics

Earnings Analysis:

Use Of Earnings Analysis:

Growth Rate %: 15.27%

Avg Div Payout %: 41.78%

Quality %: 90.06%

Avg Stk Buyback %: 19.48%

	1995	1996	1997	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Sales (mln)	5,937	8,671	11,358	19,747	22,956	25,296	28,365	32,187	36,835	39,788	44,282	51,122	60,420	58,437	62,484	69,943	73,723	77,811	86,833	93,580	91,964	96,500
SPS	\$0.63	\$0.92	\$1.18	\$1.93	\$2.25	\$2.39	\$2.65	\$3.00	\$3.39	\$3.72	\$4.40	\$5.45	\$6.60	\$6.56	\$7.21	\$8.35	\$8.80	\$9.34	\$10.54	\$11.66	\$11.78	\$12.70
Adj. Sales (mln)																						

Sales Analysis:

Sales Analysis (last 5 yrs.):

Growth Rate %: 14.49%

Growth Rate %: 5.53%

Growth Rate PS: 15.26%

Growth Rate PS: 7.62%

	1995	1996	1997	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Oper. Margin	41.00%	41.00%	50.10%	56.00%	51.30%	52.40%	45.80%	48.00%	40.00%	44.00%	39.50%	39.10%	40.50%	39.20%	42.90%	42.80%	42.00%	40.50%	38.50%	36.50%	37.50%	37.50%
Tax Rate	32.90%	35.00%	35.00%	35.00%	34.00%	33.50%	32.00%	32.20%	33.00%	32.00%	31.00%	30.00%	25.80%	26.50%	25.00%	17.50%	18.60%	19.60%	20.70%	23.30%	18.00%	20.00%
Deprec. (mln)	269	480	557	1,010	748	1,536	1,084	1,439	1,186	855	903	1,440	2,056	2,562	2,673	2,766	2,967	3,755	5,212	5,957	6,622	7,650
Depreciation %	18.51%	22.06%	16.13%	13.25%	7.94%	15.36%	10.44%	13.67%	10.47%	6.72%	7.17%	10.24%	11.63%	17.59%	14.25%	11.95%	12.80%	16.72%	23.61%	27.22%	29.66%	33.26%

Description:

Instructions:

Analysis:

Observations: The triumphs of Google and Apple demonstrate that MSFT will not dominate easily outside existing dominance.

Description & Analysis of Profitability (in mlns):

	2012	2013	2014	2015	2016	
Net Revenues:	6%	73,723	77,849	86,833	93,580	91,989
Devices and Consumer		32,438	32,100	37,674	41,501	40,460
Licensing		19,495	19,021	18,803	14,969	
Computer and Gaming Hardware		6,740	6,461	9,628	10,183	
Phone Hardware		0	0	1,985	7,524	
Other		6,203	6,618	7,258	8,825	
Commercial		41,770	45,346	49,574	51,875	26,487
Licensing		37,126	39,686	42,027	41,039	
Other		4,644	5,660	7,547	10,836	25,042
Corporate		-485	403	-415	204	
Gross Margin:		56,193	57,600	59,899	60,542	
Devices and Consumer		21,733	20,046	19,933	18,381	
Licensing		17,240	17,044	17,216	13,870	
Computer and Gaming Hardware		2,495	956	893	1,788	
Phone Hardware		0	0	54	701	
Other		1,998	2,046	1,770	2,022	
Commercial		35,042	37,182	40,460	42,029	
Licensing		34,463	36,261	38,604	37,830	
Other		579	921	1,856	4,199	
Corporate		-582	372	-494	132	
Internal Costs:	9%	45,777	51,085	58,947	65,408	64,028
Cost of Revenue	17%	17,530	20,249	26,934	33,038	32,780
Sales and marketing	1%	13,867	15,276	15,811	15,713	14,697
Research and development expenses	5%	9,811	10,411	11,381	12,046	11,988
General and administrative	0%	4,569	5,149	4,821	4,611	4,563
EBITDA:	3%	30,913	30,519	33,098	34,129	34,583
Amortization/Dep.	22%	2,967	3,755	5,212	5,957	6,622
"Free" Cash Flow	-2%	28,608	26,262	27,613	28,185	26,240
Capital Expenditures	38%	2,305	4,257	5,485	5,944	8,343
Operating Margin:	0%	27,946	26,764	27,886	28,172	27,961
Devices and Consumer		6,051	9,421	8,714	8,714	6,142
Commercial		19,978	21,132	23,467	23,467	12,461
Corporate		-4,266	-3,789	-4,422	-4,422	9,358
External Costs:	6%	4,785	4,901	5,685	5,968	6,023
Interest exp., net		(504)	(288)	(61)	(346)	431
Losses on equity investees and other		0	0	0	0	0
Taxes	1%	5,289	5,189	5,746	6,314	5,592
Impairment, integration, and restructuring				10,011		1,110
Earnings:	-1%	23,161	21,863	22,201	22,204	21,938
GAAP				12,193		14,159
Dividend Paid/% of FCF:		6,705	7,412	9,228	9,953	11,244
Common Stock/% of FCF:		-148	1,723	3,738	10,081	11,498
Share buybacks: Stmt of C. F.				13,221		15,301
Net Business Acquisitions:		10,112	1,584	5,937	3,723	1,393
Purchases		10,112	1,584	5,937	3,723	1,393
Disposals						

	1999	2000	2001	2002	##					2008	2009	2010	2011	2012	2013	2014
Net Revenues:	10%	19,747	22,956	25,296	28,365	##				60,321	58,573	62,256	69,943	73,510	77,610	86,833
Windows and Windows Live		7,590	9,013	9,580	9,350	#	#	#	#	16,865	14,712	18,491	18,778	18,373	19,239	
Microsoft Bness Div		6,932	7,383	8,265	8,328	#	#	#	#	18,932	18,894	18,642	21,986	23,991	24,724	
Server and Tools		3,288	4,014	4,875	5,632	#	#	#	#	13,170	14,126	14,866	17,107	18,686	20,281	
Ent'l and Devices		1,937	2,546	2,576	5,055	#	#	#	#	11,354	10,841	10,257	11,244	9,593	10,165	
Online Services Div.						#	#	#	#				2,867	3,201		
Internal Costs:	12%	10,778	13,843	13,576	16,455	##				37,928	38,074	38,386	42,782	45,777	51,085	58,947
Cost of revenues	16%	3,013	3,277	3,455	5,191	#	#	#	#	11,598	12,155	12,395	15,577	17,530	20,249	26,934
Sales and marketing	11%	3,445	4,468	4,885	5,407	#	#	#	#	13,039	12,879	13,214	13,940	13,867	15,276	15,811
Research and development expenses	8%	3,479	4,814	4,379	4,307	#	#	#	#	8,164	9,010	8,714	9,043	9,811	10,411	11,381
General and administrative	12%	841	1,284	857	1,550	#	#	#	#	5,127	4,030	4,063	4,222	4,569	5,149	4,821
EBITDA:	8%	9,979	9,861	13,256	12,994	##				24,449	23,061	26,543	29,927	30,700	30,280	33,098
Amortization/Dep.	12%	1,010	748	1,536	1,084	#	#	#	#	2,056	2,562	2,673	2,766	2,967	3,755	5,212
"Free" Cash Flow	7%	9,396	8,982	12,153	12,224	##				21,267	19,942	24,566	27,572	28,395	26,023	27,613
Capital Expenditures	16%	583	879	1,103	770	#	#	#	#	3,182	3,119	1,977	2,355	2,305	4,257	5,485
Operating Margin:	8%	8,969	9,113	11,720	11,910	##				22,393	20,499	23,870	27,161	27,733	26,525	27,886
Windows and Windows Live						#	#	#	#		12,895	12,211	11,460	9,504		
Microsoft Bness Div						#	#	#	#		11,849	14,657	15,719	16,194		
Server and Tools						#	#	#	#		5,381	6,290	7,431	8,164		
Ent'l and Devices						#	#	#	#		517	1,257	364	848		
Online Services Div.						#	#	#	#		(2,408)	(2,657)	(8,121)	(1,281)		
External Costs:	8%	1,860	941	3,999	4,081	##				4,811	5,794	5,338	4,011	4,785	4,901	5,685
Interest exp., net		(1,881)	(3,269)	36	305	#	#	#	#	(1,322)	542	(915)	(910)	(504)	(288)	(61)
Losses on equity investees and other				159	92	#	#	#	#	0	0	0	0	0	0	0
Taxes	3%	3,741	4,210	3,804	3,684	#	#	#	#	6,133	5,252	6,253	4,921	5,289	5,189	5,746
Earnings:	8%	7,109	8,172	7,721	7,829	##				17,582	14,705	18,532	23,150	22,948	21,624	22,201
Dividend Paid/% of FCF:		0	0	0	0	##				4,632	4,507	4,507	5,361	6,705	7,412	9,228
Common Stock/% of FCF:		(15,886)	0	(10,353)	(4,256)	0				6,126	6,516	6,516	7,694	(148)	1,723	3,738
Net Business Acquisitions:											245	71	10,112	1,584	5,937	
Purchases											245	71	10,112	1,584	5,937	
Disposals																

Description:

Instructions:

Analysis:

Observations:

Balance Sheet (in millions):

		2000	2001	2002	2003	2008	2009	2010	2011	2012	2013	2014	2015	2016
Assets:	9%	52,120	59,257	67,646	79,571	72,793	77,888	86,113	108,704	121,271	142,431	172,384	176,223	193,694
2% Cash		4,846	3,922	3,016	6,438	10,339	6,076	5,505	9,610	6,938	3,804	8,669	5,595	6,510
11% Marketable securities		18,952	27,678	35,636	42,610	13,323	25,371	31,283	43,162	56,102	73,218	77,040	90,931	106,730
11% Accts receivable		3,250	3,671	5,129	5,196	13,589	11,192	13,014	14,987	15,780	17,486	19,544	17,908	18,277
Inventories						985	717	740	1,372	1,137	1,938	2,660	2,902	2,251
Deferred taxes		1,708	1,949	2,112	2,506	2,017	2,213	2,184	2,467	2,035	1,632	1,941	1,915	
Other current assets		1,522	2,417	2,683	2,223	2,989	3,711	2,950	3,320	3,092	3,388	4,392	5,461	5,892
15% Prop. plant & equipt., net		1,903	2,309	2,268	2,223	6,242	7,535	7,630	8,162	8,269	9,991	13,011	14,731	18,356
Equity and other investments		17,726	14,141	14,191	13,692	6,588	4,933	7,754	10,865	9,776	10,844	14,597	12,053	10,431
Goodwill				1,426	3,128	12,108	12,503	12,394	12,581	13,452	14,655	20,127	16,939	17,872
Intangible assets, net				243	384	1,973	1,759	1,158	744	3,170	3,083	6,981	4,835	3,733
Other assets		2,213	3,170	942	1,171	2,640	1,878	1,501	1,434	1,520	2,392	3,422	2,953	3,642
Liabilities:	15%	10,782	11,968	13,017	16,835	36,507	34,584	39,938	51,621	54,906	63,487	82,600	77,666	99,846
Accounts payable		1,083	1,188	1,208	1,573	4,034	5,324	4,025	4,197	5,406	7,827	9,432	11,576	6,898
Accrued compensation		557	742	1,145	1,416	2,934	3,156	3,283	3,575	3,875	4,117	4,797	5,096	5,264
Current portion of lt debt													2,499	12,904
Income taxes		585	1,468	2,022	2,044	3,248	725	1,074	580	789	592	782	606	580
11% Unearned revenue		4,816	5,614	7,743	9,015	15,297	14,284	13,652	15,722	18,653	20,639	23,150	23,223	27,468
Other		2,714	2,120	501	1,056	6,273	4,826	4,113	4,700	3,965	4,242	7,464	6,858	5,949
26% Long term liabilities		1,027	836	398	1,731	4,721	6,269	13,791	22,847	22,218	26,070	36,975	27,808	40,783
Other long term													18,474	21,557
Shareholder's Equity:	4%	41,368	47,289	52,180	61,020	36,286	39,558	46,175	57,083	66,363	78,944	89,784	80,083	71,997
Common Stock		23,195	28,390	31,647	35,344	62,849	62,382	62,856	63,415	65,797	67,306	68,366	68,465	68,178
Retained income		18,173	18,899	20,533	25,676	-26,563	-22,824	-16,681	-6,332	566	11,638	21,418	9,096	2,282
AOCI													2,522	1,537

Description:

Instructions:

Analysis: Assets are not growing because of significant share repurchase and dividend payments.

Observations:

Industry Overview

The industry is going through the early stages of a major transition from private systems to a public cloud. Dominant companies are very exposed to this transition, as its core competency has been to tailor or sell private systems. This transition also comes at a time that Big Data analytics, mobile applications, social media and cybersecurity issues are growing in prominence. These changes create the potential for new competitors like Amazon and/or Chinese companies (Tencent).

Industry Comparisons

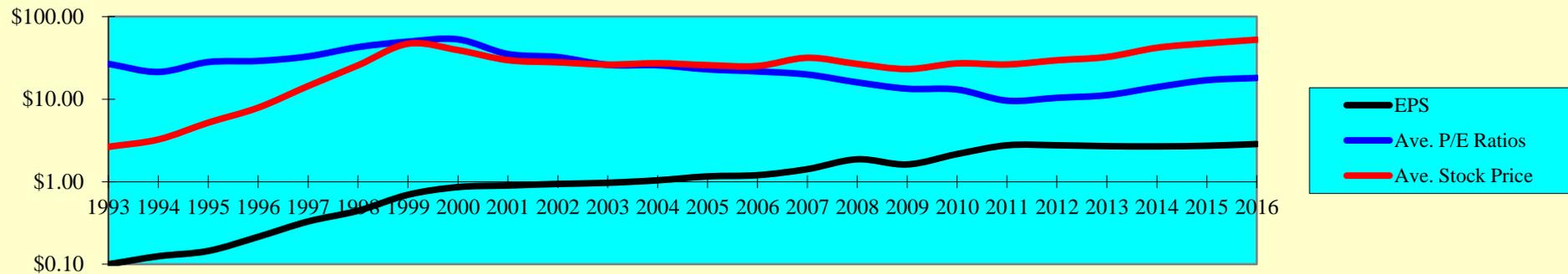
Operating Statistics:

Company	Debt (yrs.)	Sales	ROC	Operating Margin
MSFT	-2.7	96,500	18.18%	37.50%
IBM	2.9	82,500	28.31%	25.00%
HPE	0.0	55,123	4.40%	14.40%
ORCL	1.5	37,200	21.00%	48.70%
SAP	2.5	22,635	12.00%	31.50%

Market Statistics:

Company	P/B	P/E	Divd. Yld.	EV/Sales
MSFT	7.31	21.1	2.4%	4.56
IBM	8.05	9.5	3.3%	2.01
HPE	0.73	16.7	1.6%	0.48
ORCL	4.10	13.8	1.4%	5.38
SAP	3.95	22.9	1.6%	4.65

Average Stock Price vs. Average P/E vs. EPS



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EPS	\$0.10	\$0.13	\$0.15	\$0.22	\$0.33	\$0.45	\$0.70	\$0.86	\$0.90	\$0.94	\$0.97	\$1.04	\$1.16	\$1.20	\$1.42	\$1.87	\$1.62	\$2.16	\$2.76	\$2.76	\$2.70	\$2.68	\$2.73	\$2.86
Ave. P/E Ratio	26.80	21.40	28.20	29.10	33.00	42.80	49.80	53.10	35.30	32.40	26.10	25.80	23.00	21.70	19.90	16.00	13.40	13.10	9.60	10.40	11.20	14.00	17.00	18.10
Ave. Stock Price	2.65	3.25	5.20	7.90	14.45	25.75	47.00	39.35	29.75	28.00	26.25	27.25	25.85	25.25	31.75	26.75	23.20	27.15	26.35	29.65	32.50	42.00	47.55	52.50

Price/Earnings Ratio: used - **\$3.03**
 Seventeen year average low **18.8**
 Seventeen year average high **29.3**
 If we set the purchase at the ave. Seventeen year low P/E,
 the price implied is: **\$57.00**
 If we set the sell at the ave. Seventeen year high P/E,
 the price implied is: **\$88.63**

Price/Sales Ratio: used - **\$12.70**
 Seventeen year average low **4.94**
 Seventeen year average high **7.97**
 If we set the purchase at the ave. Seventeen year low P/S,
 the price implied is: **\$62.68**
 If we set the sell at the ave. Seventeen year high P/S,
 the price implied is: **\$101.17**

Price/Book Ratio: used - **\$8.75**
 Seventeen year average low **4.35**
 Seventeen year average high **6.79**
 If we set the purchase at the ave. Seventeen year low P/B,
 the price implied is: **\$38.05**
 If we set the sell at the ave. Seventeen year high P/B,
 the price implied is: **\$59.45**

Price/Cash Flow Ratio: used - **\$4.03**
 Seventeen year average low **13.8**
 Seventeen year average high **21.8**
 If we set the purchase at the ave. Seventeen year low P/CF,
 the price implied is: **\$55.82**
 If we set the sell at the ave. Seventeen year high P/CF,
 the price implied is: **\$87.89**

Initial Rate of Investment	
Current Price	\$64.00
Current EPS	\$3.03
Initial ROI	4.73%

Relative Value to Investment In T-Bonds	
Current EPS	\$3.03
T-Bond Rate	4.00%
Relative Value	\$75.66

Valuation as an Equity Bond:	
Current BV	\$8.75
Current ROE	34.59%
Retained %	35.00%
Net BV Growth	12.11%
BV in Year 10	\$27.43
EPS in Year 10	\$6.86
Valueat18P/E	\$123.45
Total Dividends	\$27.49
Total F. Value	\$150.94
Purchaseat14%	\$40.71

Valuation on Earnings Growth:	
Current EPS	\$3.03
EPS in Year 10	\$6.53
Ave. P/E Ratio	24.63
Valueat18P/E	\$145.10
Price Return	6.27%
Dividend Return	2.41%
Total Return	8.68%
Purchaseat14%	\$39.14
Sellat6%	\$81.02

Capital "charge" approach

34,583	ebitda
0.12	required return
0.06	growth rate (not on EPS basis) (no acquisitions)
0.75	% not required
0.075	denominator
461,107	ev
-59,553	debt
520,660	equity value
7600	shares
68.51	share value
41.10	buy at 60%
82.21	sell at 120%

The terminal P/E is high unless either growth occurs (very difficult from these levels) or more active repurchasing occurs.

History of Buys/Sells

by	Microsoft C msft	1/2/2001	100	4,391.00	43.91	1.50%
sl	Microsoft C msft	7/8/2002	-100	5,333.18	53.33	0.00%
by	Microsoft C msft	4/28/2006	530	12,934.32	24.4	3.00%
sl	Microsoft C msft	10/26/2007	-300	10,638.92	35.46	1.50%
by	Microsoft C msft	10/7/2008	290	6,959.89	24	3.00%
by	Microsoft C msft	11/18/2008	270	5,200.26	19.26	4.50%
by	Microsoft C msft	10/11/2010	130	3,211.74	24.71	4.50%
by	Microsoft C msft	6/20/2011	100	2,459.98	24.6	4.50%
sl	Microsoft C msft	4/22/2013	-130	4,024.90	30.96	4.00%
sl	Microsoft C msft	4/22/2013	-10	309.61	30.96	4.00%
sl	Microsoft C msft	8/18/2014	-224	10,030.90	44.78	3.00%
sl	Microsoft C msft	8/18/2014	-90	4,030.27	44.78	3.00%

