

## International Business Machines Corp.

## Quick take from “View from the Top” call with CEO Arvind Krishna

Maintain Rating: BUY | PO: 200.00 USD | Price: 191.73 USD

## IBM repositioned for sustained growth and improving FCF

As part of our ‘View from the Top’ series, we hosted an investor call with IBM CEO, Arvind Krishna. Portfolio optimization remains a key focus for the company with ~75% of the company now sitting in Software & Consulting. Cumulative cash flows of \$19bn+ (CY24-26) post dividends (plus ability to borrow) allows for continued focus on M&A (\$1-10bn range most likely) with free cash flow accretion over two years. M&A should continue to drive incremental growth in revs and FCF over time. Over the last 4 years (Arvind’s time as CEO), IBM has made 39 acquisitions with most of them in software but some in consulting. We maintain a Buy rating on IBM as the turnaround at IBM (rev growth and FCF improvement) continues, with a defensive portfolio, attractive dividend yield and underappreciated AI capabilities.

## AI potential similar to Internet; 2H24 deployments pick up

CEO Krishna noted third party estimates that AI has the potential to unleash \$4trillion in productivity through 2030. App programmers could see an increase in productivity as much as 30%. IBM’s watsonx AI can write code for programmers and the company has found that 85% of the time, the code is accepted by the programmer on the first attempt. Adding watsonx to IBM’s HR has created a 40% increase in productivity. IBM has seen 70% of contact center cases resolved by conversational AI. AI is already several \$100mn book of business and growing (2/3<sup>rd</sup> in Consulting and 1/3<sup>rd</sup> in Software).

## Remains confident in growth trajectory

CEO Krishna remains confident on achieving guidance targets set at last earnings. RHT should growth ~10% in 2024 (acceleration in product uptake, strong bookings backdrop). Transaction Processing should grow slightly (pricing, installed base of mainframe capacity). Consulting has significant room to run given partnerships with Hyperscalers and other large partners have strong ~\$1bn+ pipelines.

## Cultural changes drive increased risk taking; Quantum

CEO Krishna noted that IBM culture has had to undergo a change to take more risk (within reason) to compete with better products, partnerships and outcome based deals. Quantum remains a key tech on the horizon with a 3-7 year timeframe for monetization.

Estimates (Dec) (US\$)	2022A	2023A	2024E	2025E	2026E
EPS	9.13	9.62	10.00	10.47	11.18
GAAP EPS	1.94	8.14	8.89	9.40	10.12
EPS Change (YoY)	15.1%	5.4%	4.0%	4.7%	6.8%
Consensus EPS (Bloomberg)			10.07	10.68	11.37
DPS	6.86	7.26	7.66	8.06	8.46
Valuation (Dec)					
P/E	21.0x	19.9x	19.2x	18.3x	17.1x
GAAP P/E	98.8x	23.6x	21.6x	20.4x	18.9x
Dividend Yield	3.6%	3.8%	4.0%	4.2%	4.4%
EV / EBITDA*	15.4x	14.7x	14.5x	14.4x	14.0x
Free Cash Flow Yield*	4.9%	7.1%	6.8%	7.5%	8.0%

\* For full definitions of *IQmethod*<sup>SM</sup> measures, see page 5.

11 March 2024

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## Stock Data

Price	191.73 USD
Price Objective	200.00 USD
Date Established	24-Jan-2024
Investment Opinion	B-1-7
52-Week Range	120.55 USD - 198.73 USD
Mkt Val (mn) / Shares Out (mn)	175,072 USD / 913.1
Free Float	99.9%
Average Daily Value (mn)	966.56 USD
BofA Ticker / Exchange	IBM / NYS
Bloomberg / Reuters	IBM US / IBM.N
ROE (2024E)	43.1%
Net Dbt to Eqty (Dec-2023A)	192.9%
ESGMeter <sup>TM</sup>	High

ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of BofA Global Research's equity investment rating, volatility risk rating, income rating, and price objective for that company. For full details, refer to “BofA ESGMeter Methodology”.

RHT: Red Hat

AI: artificial intelligence

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Timestamp: 11 March 2024 06:46PM EDT

# iQprofile<sup>SM</sup> International Business Machines Corp.

## iQmethod<sup>SM</sup> – Bus Performance\*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Return on Capital Employed	8.2%	9.1%	9.6%	10.2%	10.5%
Return on Equity	40.8%	39.9%	43.1%	42.2%	36.2%
Operating Margin	16.4%	17.9%	18.4%	19.0%	19.2%
Free Cash Flow	8,574	12,442	11,916	13,052	13,999

## iQmethod<sup>SM</sup> – Quality of Earnings\*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash Realization Ratio	1.3x	1.6x	1.5x	1.6x	1.6x
Asset Replacement Ratio	0.4x	0.3x	0.5x	0.8x	0.9x
Tax Rate	15.2%	14.0%	14.0%	16.0%	16.0%
Net Debt-to-Equity Ratio	195.8%	192.9%	182.3%	116.4%	70.0%
Interest Cover	8.2x	6.9x	9.0x	10.5x	12.1x

## Income Statement Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Sales	60,529	61,861	63,679	66,213	69,930
% Change	5.5%	2.2%	2.9%	4.0%	5.6%
Gross Profit	33,369	34,932	35,160	37,103	39,296
% Change	3.6%	4.7%	0.7%	5.5%	5.9%
EBITDA	14,739	15,445	15,630	15,708	16,166
% Change	-2.8%	4.8%	1.2%	0.5%	2.9%
Net Interest & Other Income	(116)	(741)	(947)	(901)	(805)
<b>Net Income (Adjusted)</b>	<b>8,326</b>	<b>8,870</b>	<b>9,262</b>	<b>9,799</b>	<b>10,574</b>
<b>% Change</b>	<b>16.0%</b>	<b>6.5%</b>	<b>4.4%</b>	<b>5.8%</b>	<b>7.9%</b>

## Free Cash Flow Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Net Income from Cont Operations (GAAP)	1,773	7,508	8,237	8,797	9,572
Depreciation & Amortization	4,802	4,393	3,913	3,142	2,774
Change in Working Capital	(2,887)	900	536	2,160	2,817
Deferred Taxation Charge	0	0	0	0	0
Other Adjustments, Net	6,747	1,130	1,333	1,333	1,333
Capital Expenditure	(1,861)	(1,489)	(2,103)	(2,380)	(2,496)
<b>Free Cash Flow</b>	<b>8,574</b>	<b>12,442</b>	<b>11,916</b>	<b>13,052</b>	<b>13,999</b>
<b>% Change</b>	<b>-17.7%</b>	<b>45.1%</b>	<b>-4.2%</b>	<b>9.5%</b>	<b>7.3%</b>
Share / Issue Repurchase	0	0	1,329	1,359	1,389
Cost of Dividends Paid	(5,948)	(6,040)	(6,997)	(7,441)	(7,892)
Change in Debt	991	4,271	(4,000)	(4,000)	(4,000)

## Balance Sheet Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash & Equivalents	7,989	13,089	15,337	18,307	21,802
Trade Receivables	15,148	14,647	14,329	13,776	13,194
Other Current Assets	5,981	5,171	6,376	6,539	6,820
Property, Plant & Equipment	5,334	5,501	431	404	1,036
Other Non-Current Assets	92,791	96,832	94,210	95,311	96,938
<b>Total Assets</b>	<b>127,243</b>	<b>135,240</b>	<b>130,683</b>	<b>134,337</b>	<b>139,791</b>
Short-Term Debt	4,760	6,426	6,426	6,426	6,426
Other Current Liabilities	26,745	27,695	28,608	29,668	31,141
Long-Term Debt	46,189	50,121	46,121	42,121	38,121
Other Non-Current Liabilities	27,528	28,384	29,114	30,132	31,625
<b>Total Liabilities</b>	<b>105,222</b>	<b>112,626</b>	<b>110,269</b>	<b>108,347</b>	<b>107,314</b>
<b>Total Equity</b>	<b>21,944</b>	<b>22,534</b>	<b>20,414</b>	<b>25,990</b>	<b>32,478</b>
<b>Total Equity &amp; Liabilities</b>	<b>127,166</b>	<b>135,160</b>	<b>130,683</b>	<b>134,337</b>	<b>139,791</b>

\* For full definitions of iQmethod<sup>SM</sup> measures, see page 5.

## Company Sector

IT Hardware

## Company Description

International Business Machines (IBM) is a leading provider of enterprise solutions, offering a broad portfolio of IT hardware, business and IT services, and a full suite of software solutions. The company integrates its hardware products with its software and services offerings in order to provide high value solutions. IBM is comprised of four major segments: (1) Infrastructure, (2) Consulting, (3) Software, and (4) Financing.

## Investment Rationale

We view IBM as a defensive investment given its high exposure to recurring sales, cost cutting levers, solid balance sheet, potential share gains, and relatively stable margins. We believe IBM will embark on further cost cutting, and enhance its services and software offerings through acquisitions. Longer term, we expect IBM to take share in IT spending with its Cloud and AI initiatives.

## Stock Data

Average Daily Volume 5,041,272

## Quarterly Earnings Estimates

	2023	2024
Q1	1.36A	1.63E
Q2	2.18A	2.36E
Q3	2.20A	2.37E
Q4	3.87A	3.63E

# Models

**Figure 1: IBM Income Statement**

We model F24 revenue/EPS of \$63.7bn/\$10.00

IBM ( <i>\$ Millions Except Per Share Data</i> )	2023A				2024E								
	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	2022A	2023A	2024E	2025E	2026E
<b>Income Statement</b>													
<b>Total Revenue</b>	<b>\$14,252</b>	<b>\$15,475</b>	<b>\$14,752</b>	<b>\$17,381</b>	<b>\$14,664</b>	<b>\$15,812</b>	<b>\$15,220</b>	<b>\$17,983</b>	<b>\$60,529</b>	<b>\$61,861</b>	<b>\$63,679</b>	<b>\$66,213</b>	<b>\$69,930</b>
Hybrid Platform & Solutions	\$4,203	\$4,707	\$4,500	\$5,315	\$4,473	\$5,005	\$4,801	\$5,617	\$17,846	\$18,725	\$19,897	\$20,872	\$21,923
Transaction Processing	\$1,718	\$1,901	\$1,765	\$2,199	\$1,718	\$1,920	\$1,782	\$2,243	\$7,190	\$7,583	\$7,663	\$7,663	\$7,663
Software	\$5,921	\$6,608	\$6,265	\$7,514	\$6,192	\$6,925	\$6,584	\$7,860	\$25,036	\$26,308	\$27,560	\$28,535	\$29,586
Business Transformation	\$2,324	\$2,227	\$2,312	\$2,265	\$2,440	\$2,339	\$2,435	\$2,384	\$9,017	\$9,128	\$9,598	\$10,028	\$10,480
Technology Consulting	\$939	\$1,022	\$955	\$998	\$1,007	\$1,095	\$1,024	\$1,070	\$3,764	\$3,914	\$4,196	\$4,310	\$4,430
Application Operations	\$1,699	\$1,764	\$1,696	\$1,786	\$1,869	\$1,940	\$1,865	\$1,965	\$6,327	\$6,944	\$7,639	\$7,639	\$7,639
Consulting	\$4,962	\$5,013	\$4,963	\$5,048	\$5,316	\$5,374	\$5,324	\$5,419	\$19,108	\$19,986	\$21,433	\$21,977	\$22,549
Hybrid Infrastructure	\$1,722	\$2,264	\$1,931	\$3,320	\$1,596	\$1,988	\$1,798	\$3,257	\$9,440	\$9,237	\$8,639	\$9,750	\$11,937
Infrastructure Support	\$1,376	\$1,354	\$1,341	\$1,284	\$1,307	\$1,286	\$1,274	\$1,219	\$5,850	\$5,355	\$5,087	\$4,985	\$4,886
Infrastructure	\$3,098	\$3,618	\$3,272	\$4,604	\$2,903	\$3,274	\$3,072	\$4,476	\$15,290	\$14,592	\$13,726	\$14,736	\$16,822
Financing	\$196	\$185	\$186	\$175	\$198	\$186	\$188	\$176	\$645	\$742	\$749	\$757	\$764
Other	\$74	\$52	\$67	\$41	\$54	\$53	\$52	\$52	\$452	\$234	\$211	\$209	\$208
<b>Total Cost of Revenue</b>	<b>6,742</b>	<b>6,975</b>	<b>6,729</b>	<b>7,114</b>	<b>6,767</b>	<b>7,391</b>	<b>7,037</b>	<b>8,012</b>	<b>27,842</b>	<b>27,561</b>	<b>29,207</b>	<b>29,798</b>	<b>31,322</b>
Cost of Software	1,214	1,368	1,284	1,375	1,269	1,433	1,350	1,423	5,096	5,241	5,475	5,669	5,879
Cost of Consulting	3,712	3,715	3,603	3,650	3,961	3,966	3,849	3,901	14,242	14,679	15,677	16,010	16,358
Cost of Infrastructure	1,497	1,599	1,521	1,814	1,262	1,695	1,567	2,362	7,221	6,431	6,887	6,955	7,919
Cost of Financing	110	94	94	87	111	95	94	88	398	385	388	391	394
Other	210	200	227	189	163	202	177	238	885	826	780	773	773
<b>Operating Gross Profit</b>	<b>\$7,658</b>	<b>\$8,650</b>	<b>\$8,185</b>	<b>\$10,439</b>	<b>\$8,070</b>	<b>\$8,593</b>	<b>\$8,355</b>	<b>\$10,143</b>	<b>\$33,369</b>	<b>\$34,932</b>	<b>\$35,160</b>	<b>\$37,103</b>	<b>\$39,296</b>
Total Operating Expense	6,262	6,342	5,866	6,268	6,179	6,037	5,778	6,251	24,095	24,738	24,245	25,199	26,602
R&D	1,655	1,687	1,685	1,748	1,659	1,676	1,693	1,755	6,567	6,775	6,782	7,052	7,450
SG&A	4,607	4,655	4,181	4,520	4,520	4,361	4,085	4,497	17,528	17,963	17,463	18,147	19,152
Intellectual Property Income	178	248	190	242	147	206	198	252	663	858	802	662	699
<b>Operating Income (Cont. Ops)</b>	<b>1,574</b>	<b>2,556</b>	<b>2,509</b>	<b>4,413</b>	<b>2,037</b>	<b>2,761</b>	<b>2,775</b>	<b>4,144</b>	<b>9,937</b>	<b>11,052</b>	<b>11,716</b>	<b>12,566</b>	<b>13,393</b>
Net Interest Expense	(367)	(423)	(412)	(405)	(339)	(327)	(315)	(315)	(1,216)	(1,607)	(1,297)	(1,201)	(1,105)
Other Income	242	262	203	159	50	100	100	100	1,100	866	350	300	300
<b>Pretax Income (Cont. Ops)</b>	<b>1,449</b>	<b>2,395</b>	<b>2,300</b>	<b>4,167</b>	<b>1,748</b>	<b>2,534</b>	<b>2,559</b>	<b>3,929</b>	<b>9,821</b>	<b>10,311</b>	<b>10,769</b>	<b>11,665</b>	<b>12,588</b>
Income Taxes	200	393	268	580	245	355	358	550	1,495	1,441	1,508	1,866	2,014
<b>Net Inc. avail. To Shareholders</b>	<b>1,249</b>	<b>2,002</b>	<b>2,032</b>	<b>3,587</b>	<b>1,503</b>	<b>2,179</b>	<b>2,201</b>	<b>3,379</b>	<b>8,326</b>	<b>8,870</b>	<b>9,262</b>	<b>9,799</b>	<b>10,574</b>
Preferred Dividend	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
<b>EPS (Cont. Ops)</b>	<b>\$1.36</b>	<b>\$2.18</b>	<b>\$2.20</b>	<b>\$3.87</b>	<b>\$1.63</b>	<b>\$2.36</b>	<b>\$2.37</b>	<b>\$3.63</b>	<b>\$9.13</b>	<b>\$9.62</b>	<b>\$10.00</b>	<b>\$10.47</b>	<b>\$11.18</b>
Average Shares (MM Diluted)	918	920	924	927	923	925	927	930	912	922	926	936	945
<b>Income Statement (Cont'd)</b>													
Total Revenues (Y/Y)	0%	0%	5%	4%	3%	2%	3%	3%	6%	2%	3%	4%	6%
Operating Expense	5%	1%	2%	3%	-1%	-5%	-2%	0%	0%	3%	(2%)	4%	6%
R&D	-1%	1%	5%	9%	0%	-1%	0%	0%	1%	3%	0%	4%	6%
SG&A	7%	2%	1%	0%	-2%	-6%	-2%	-1%	(0%)	2%	(3%)	4%	6%
Operating Income	-4%	7%	28%	12%	29%	8%	11%	-6%	14%	11%	6%	7%	7%
Pretax Income	-4%	-5%	17%	9%	21%	6%	11%	-6%	25%	5%	4%	8%	8%
Net Income	-2%	-5%	23%	9%	20%	9%	8%	-6%	16%	7%	4%	6%	8%
EPS	-3%	-6%	22%	7%	20%	8%	8%	-6%	15%	5%	4%	5%	7%
Diluted Shares (Y/Y)	1%	1%	1%	1%	1%	1%	0%	0%	1%	1%	0%	1%	1%
<b>% of Revenues</b>													
Gross Profit	53.7%	55.9%	55.5%	60.1%	55.0%	54.3%	54.9%	56.4%	55.1%	56.5%	55.2%	56.0%	56.2%
Operating Expense	43.9%	41.0%	39.8%	36.1%	42.1%	38.2%	38.0%	34.8%	39.8%	40.0%	38.1%	38.1%	38.0%
R&D	11.6%	10.9%	11.4%	10.1%	11.3%	10.6%	11.1%	9.8%	10.8%	11.0%	10.7%	10.7%	10.7%
SG&A	32.3%	30.1%	28.3%	26.0%	30.8%	27.6%	26.8%	25.0%	29.0%	29.0%	27.4%	27.4%	27.4%
Operating Income	11.0%	16.5%	17.0%	25.4%	13.9%	17.5%	18.2%	23.0%	16.4%	17.9%	18.4%	19.0%	19.2%
Pretax Income	10.2%	15.5%	15.6%	24.0%	11.9%	16.0%	16.8%	21.8%	16.2%	16.7%	16.9%	17.6%	18.0%
Effective Tax Rate	13.8%	16.4%	11.7%	13.9%	14.0%	14.0%	14.0%	14.0%	15.2%	14.0%	14.0%	16.0%	16.0%
Net Income	8.8%	12.9%	13.8%	20.6%	10.3%	13.8%	14.5%	18.8%	13.8%	14.3%	14.5%	14.8%	15.1%

Source: Company Reports, BofA Global Research estimates

## Price objective basis & risk

### International Business Machines Corp. (IBM)

Our PO of \$200 is based on 17x EV/C25 FCF. Our target multiple for IBM is at the high end of the historical range 11-19x. We believe a multiple at the high end of the historical range is justified given the company's improving growth and FCF trajectory with Red Hat.

Downside risks to our price objective are: (1) failure to execute on the company's growth roadmap, (2) inability to realize expected cost savings from restructuring, (3) technology/competitor risk in hardware, software, and services, (4) unforeseen currency impacts on revenue and profits, (5) acquisition integration, given IBM's acquisitive nature, and (6) increased concern of economic uncertainty and tightening corporate IT budgets.

Upside risks to our price objective are: (1) faster reacceleration of topline, (2) faster improvement in margins, (3) better-than-expected accretion from M&A, and (4) delivery of upside to FCF.

## Analyst Certification

I, Wamsi Mohan, 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 - IT Hardware and Technology Supply Chain Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
<b>BUY</b>				
	Amphenol	APH	APH US	Wamsi Mohan
	Apple Inc.	AAPL	AAPL US	Wamsi Mohan
	Corning Inc.	GLW	GLW US	Wamsi Mohan
	Dell Technologies Inc.	DELL	DELL US	Wamsi Mohan
	Flex Ltd.	FLEX	FLEX US	Ruplu Bhattacharya
	HP Inc.	HPQ	HPQ US	Wamsi Mohan
	International Business Machines Corp.	IBM	IBM US	Wamsi Mohan
	Jabil Inc.	JBL	JBL US	Ruplu Bhattacharya
	Nutanix Inc	NTNX	NTNX US	Wamsi Mohan
	Roku, Inc.	ROKU	ROKU US	Ruplu Bhattacharya
	Seagate Technology	STX	STX US	Wamsi Mohan
	Super Micro Computer Inc.	SMCI	SMCI US	Ruplu Bhattacharya
	TD Synnex Corp	SNX	SNX US	Ruplu Bhattacharya
	TE Connectivity Ltd.	TEL	TEL US	Wamsi Mohan
	Western Digital Corporation	WDC	WDC US	Wamsi Mohan
<b>NEUTRAL</b>				
	Arrow Electronics Inc.	ARW	ARW US	Ruplu Bhattacharya
	Avnet Inc.	AVT	AVT US	Ruplu Bhattacharya
	CDW Corp	CDW	CDW US	Ruplu Bhattacharya
	Concentrix Corporation	CNXC	CNXC US	Ruplu Bhattacharya
	Hewlett-Packard Enterprise	HPE	HPE US	Wamsi Mohan
	Pure Storage	PSTG	PSTG US	Wamsi Mohan
	Sensata Technologies Holdings Plc	ST	ST US	Wamsi Mohan
	Teradata Corporation	TDC	TDC US	Wamsi Mohan
<b>UNDERPERFORM</b>				
	DigitalOcean	DOCN	DOCN US	Wamsi Mohan
	NetApp Inc.	NTAP	NTAP US	Wamsi Mohan
	Sanmina Corporation	SANM	SANM US	Ruplu Bhattacharya
	Vishay Intertechnology, Inc.	VSH	VSH US	Ruplu Bhattacharya

## iQmethod<sup>SM</sup> Measures Definitions

### Business Performance

Return On Capital Employed

Return On Equity

Operating Margin

Earnings Growth

Free Cash Flow

### Numerator

NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization

Net Income

Operating Profit

Expected 5 Year CAGR From Latest Actual

Cash Flow From Operations – Total Capex

### Denominator

Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill

Amortization

Shareholders' Equity

Sales

N/A

N/A

### Quality of Earnings

Cash Realization Ratio

Asset Replacement Ratio

Tax Rate

Net Debt-To-Equity Ratio

Interest Cover

### Numerator

Cash Flow From Operations

Capex

Tax Charge

Net Debt = Total Debt – Cash &amp; Equivalents

EBIT

### Denominator

Net Income

Depreciation

Pre-Tax Income

Total Equity

Interest Expense

### Valuation Toolkit

Price / Earnings Ratio

Price / Book Value

Dividend Yield

Free Cash Flow Yield

Enterprise Value / Sales

### Numerator

Current Share Price

Current Share Price

Annualised Declared Cash Dividend

Cash Flow From Operations – Total Capex

EV = Current Share Price × Current Shares + Minority Equity + Net Debt +

Other LT Liabilities

Enterprise Value

### Denominator

Diluted Earnings Per Share (Basis As Specified)

Shareholders' Equity / Current Basic Shares

Current Share Price

Market Cap = Current Share Price × Current Basic Shares

Sales

Basic EBIT + Depreciation + Amortization

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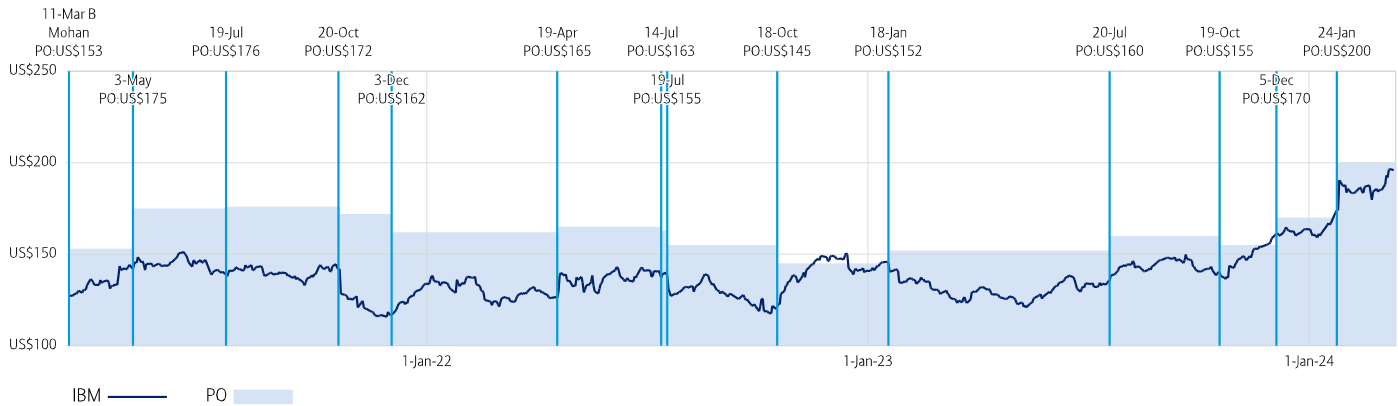
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B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

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 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	Count	Percent
Buy	215	53.09%	Buy	111	51.63%
Hold	97	23.95%	Hold	45	46.39%
Sell	93	22.96%	Sell	24	25.81%

### Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

<sup>R1</sup> 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 <sup>R2</sup>
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

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