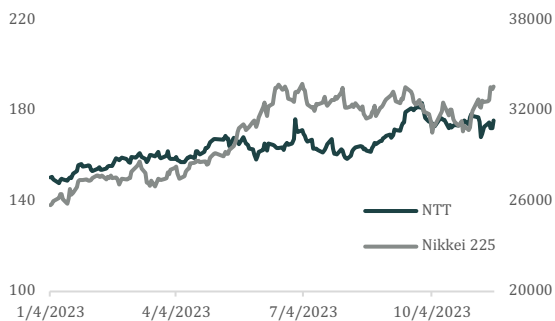


Analysts

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Basic Issuer Information

Issuer Nippon Telegraph and Telephone Corporation
Equity Ticker TYO: 9430
Corporate Ticker NTT
Credit Rating (M/S/F) A1/A/NR
Country of Risk Japan
Sector Telecommunication

1Y Price (rebase to 100)

Company Description

NTT is a telecommunication conglomerate headquartered in Tokyo, Japan. Established in 1952 by the Government of Japan, NTT was initially founded as statutory corporation and was later privatized in 1985 and then listed on Tokyo Stock Exchange in 1987.

NTT has over 330,000 employees and operates across the globe, including major cities in Japan and in the US.

Key Financials

(JPY¥)	FY21A	FY22A	FY23E	FY24E
Operating Profit (tn)	1.80	1.87	2.26	2.29
Gr Rate (%)	4.1	21.1	1.1	1.1
Margin (%)	8	8	9	9
ROA (%)	5	5	5	5
OCF Ratio (%)	48	33	63	41
D/E Ratio (%)	89	96	93	104

Key Executives

Akira Shimada Chief Executive Officer
Takashi Hiroi Chief Financial Officer
Katsuhiko Kawazoe Chief Technology Officer

Uncertainties facing Credit Profile
Recommendations

We are initiating coverage of Nippon Telegraph and Telephone Corporation (TYO 9430). We have given an issuer profile rating of “Neutral” to TYO 9430's credit outlook. We will be focusing on NTT 0.583 03/01/24 as we prefer higher yield at the shorter end of the curve.

Recent Developments

- NTT's "New Value Creation & Sustainability 2027, to invest ~JPY8,000bn in the next five years, focusing in growth areas and accelerate cash-generation ability for the future
- NTT entered into Phoenix, Arizona in the US, elevating revenue streams within the Global Solutions Business
- NTT is the first AWS Direct Connect Delivery partner in Thailand, bolstering cloud connectivity
- Japanese lawmakers are reviewing to ease regulations governing NTT mandating nationwide service, and decision-making limits

Key Credit Considerations

The company faces great uncertainties stemming from the potential privatization, which in turn may lead to downgrading of the credit profile with Japanese government's withdrawal of shareholdings and support. Despite promising operational expansion and likely deregulation as a silver lining to privatization, we conclude our credit analysis with a Neutral rating.

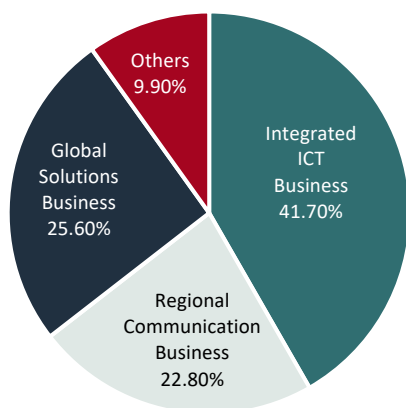
Credit Positives

- Diversification of business in high-growth areas such as data centers and cloud services sets the company well poised to capitalize revenue growth and enhance its credit profile through secular growth
- Japan's upbeat corporates to provide growth support to the company. Non-manufacturers reported the strongest conditions since 1991, reflecting robust recovery of Japan's economy which provides fundamental backstop to the company's operations and credit profile due to government's large shareholding and significant domestic revenue

Credit Negatives

- Potential full privatization of NTT by the government's withdrawal of shareholdings worries the investors as the present credit profile is supported by the presumption of government support
- The potential privatization has a silver lining in term of deregulation as NTT may no longer be required to disclose its research on electronic communications technologies
- Current high leverage position of the company is not boding well with the high interest rate environment, with close to half of its debt due for refinancing within the next 3 years.

Figure 1. Revenue by Business Segments



Source: NTT Annual Report

Figure 2. NTT's Close Competitors

Top Competitors of NTT (Telecommunication Industry)
KDDI Corporation
SoftBank Group Corp
Singtel Telecommunications Limited
PCCW Limited

Top Competitors of NTT (Data and Consulting Industry)
Nomura Research Institute
NEC Asia Pacific Private Limited
Fujitsu Limited
SCSK Corporation

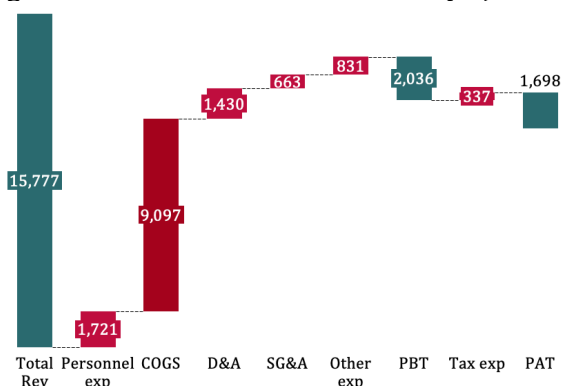
Source: Refinitiv, Company Filings

Figure 3. NTT's Subsidiaries



Source: NTT Annual Report

Figure 4. NTT 2022 Income Waterfall (in JPY, bn)



Source: NTT Annual Report

Company Overview

Nippon Telegraph and Telephone Corporation (NTT) is a telecommunication conglomerate headquartered in Tokyo, Japan. Established in 1952 as a telecommunication company, NTT has since diversified into different businesses. Currently, NTT operates as a holding company for 3 key business segments – Integrated ICT Business (Mobile Phone Services), Global Solutions Business (Data Center and Cloud Services), and Regional Communications Business (Telecommunication) (Figure 1).

NTT was initially founded as a statutory corporation by the Government of Japan but was later privatized in 1985. NTT was then publicly listed in 1987 on the Tokyo Stock Exchange. As of 9 September 2023, NTT has a market capitalization of JPY1,582bn / USD105.3bn

The top 4 competitors for NTT competitive set in the Telecommunication industry are KDDI Corporation, SoftBank Group Corp, Singtel Telecommunications Limited and PCCW Limited (Figure 2). For the Data and Consulting Industry, it would be Nomura Research Institute, NEC Asia Pacific Private Limited, Fujitsu Limited and SCSK Corporation (Figure 3).

NTT has approximately over 330,000 employees and operates across the globe, including major cities in Japan and in the United States.

Revenue by Segments

NTT has 3 main revenue streams by segments, Integrated ICT Business (Mobile Phone Services), Global Solutions Business (Data Center and Cloud Services), and Regional Communications Business (Telecommunication) (Figure 4).

Integrated ICT Business is the largest revenue stream, accounting for 41.7% of top line revenue. This segment operated mainly in phone communication services and cloud infrastructure provider business, making money through subscriptions signed up by clients including large corporations and individuals. IFRS revenue increased to JPY1,458bn in 1Q23, up 36.0% year on year.

Global Solution Business holds 25.6% of total revenue, making money through subscription and provision services for companies in data center and technology consulting business. IFRS revenue decreased to JPY754.5bn in 1Q23, down 13.5% year on year.

Regional Communication Business makes up 22.8% of total revenue and generates money through telephone subscription services by Japan-based clients such as large corporations and individuals. IFRS revenue increased to JPY1,015bn in 1Q23, up 46.0% year on year.

The remaining 9.9% of total revenue comes from ventures in real estate and energy businesses.

Recent Earnings Review

NTT saw a slight 1.4% increase in operating revenue by JPY42.2bn in 1Q23 mainly due to improving margins in Integrated ICT Business and Global Solution Business segments. Fair assumptions can be made from the capitalization of the 5G and 6G market due to easing regulations and increased market entry into markets such as Phoenix, Arizona in the United States and Thailand.

However, operating profit decreased by 5.7% by JPY7.2bn in the same quarter because of poor financial performance in the regional communication segment. Income from sales of shares was able to cover decrease in operating profit and elevated interest payment, bringing net profit up by 2.0%, which constitutes roughly JPY7.2bn.

Figure 5: NTT's Prominent Managers & Shareholders

Prominent Managers and Directors of Nippon Telegraph and Telephone Corporation	
Chief Executive Officer	Akira Shimada
Senior Executive Vice President	Katsuhiko Kawazoe
Senior Executive Vice President	Takashi Hiroi
Senior Executive Vice President	Tadao Yanase
Executive Vice President	Sachiko Oonishi
Executive Vice President	Akiko Kudo
Senior Vice President	Kei Ikeda
Senior Vice President	Kyoko Yamamoto
Senior Vice President	Makiko Sekine
Senior Vice President	Natsuko Fujiki
Senior Vice President	Shingo Kinoshita
Senior Vice President	Toshihiko Nakamura
Senior Vice President	Akitoshi Hattori
Senior Vice President	Minako Tsumenaga
Senior Vice President	Ken Katsuyama

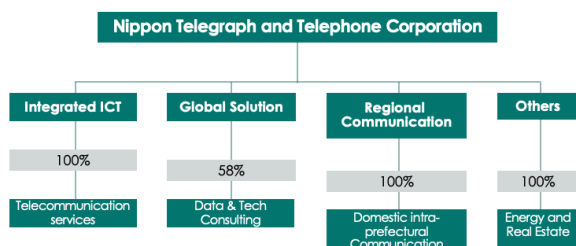
Source: NTT Annual Report

Figure 6: NWD's Main Shareholders

Main Shareholders of New World Development Company	
The Ministry of Finance	34.30%
The Master Trust Bank of Japan Ltd	11.23%
Custody Bank of Japan Ltd	4.91%
Toyota Motor Corporation	2.37%
JP Morgan Chase Bank 385632	1.63%
Moxley & Co LLC	1.06%
State Street Bank West Client	0.79%
Nippon Life Insurance Company	0.76%
NTT Employee Share-Holding Association	0.69%
Barclays Securities Japan Ltd	0.57%

Source: Factset, NTT Annual Report

Figure 7: Nippon Telegraph and Telephone Corporation Business Structure



Source: NTT Annual Report

Ownership & Management

Management of NTT

The current President and CEO of NTT is Mr. Akira Shimada who has been a director at NTT since June 2022. Mr. Akira Shimada first joined in 1981 and was later appointed executive vice president in June 2015 and senior executive vice president in June 2018. Since joining NTT in 1981, Jason T. Liberty has served as Executive Vice President and Chief Financial Officer. In his previous role, Mr. Akira Shimada was responsible for Finance, Strategy, Compliance and Human Resource (Figure 5).

Shareholders of NTT

Some of the major shareholders of NTT are The Ministry of Finance (Japan), The Master Trust Bank of Japan Ltd, Custody Bank of Japan Ltd, Toyota Motor Corporation and JP Morgan Chase Bank 385632 (Figure 6).

Subsidiaries of NTT

NTT Group companies are classified into their respective business segments (Figure 7).

Under Integrated ICT Business, NTT subsidiaries include listed companies such NTT DOCOMO, NTT Communications, and NTT Comware. These companies provide telecommunication services. NTT DOCOMO is majority owned by NTT while the remaining two are wholly owned subsidiaries.

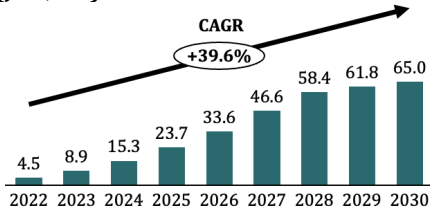
Under Global Solution Business, NTT Data operates as the main subsidiary, providing tech consulting services in cloud, data centers and system and software development. As of AY2022, NTT Data has a market capitalization of JPY2.63tn, of which 58% is owned by NTT.

Under Regional Communication Business, NTT owns NTT East and NTT West, of which provides domestic intra-prefectural communication services. Both subsidiaries are 100% owned by NTT.

Subsequent smaller subsidiaries owned by NTT include NTT Urban Solutions and NTT Anode Energy for Real Estate and Energy ventures.

During FY2022, NTT Data has completed numerous acquisitions, mainly with Aspirent, Umvel, SAP partner Natuvion Group, Postlight, Vectorform and Apisero to expedite tech advancement in cloud, supply chain, application, IT service management and cybersecurity market.

Figure 8: Forecasted Growth of 5G Solutions in Japan (JPY, bn)



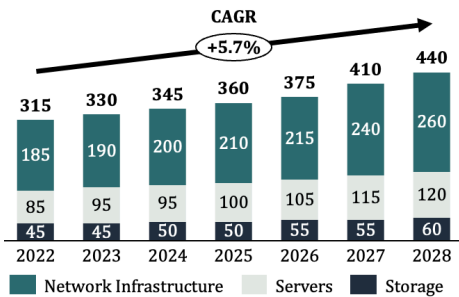
Source: Statista

Figure 9: Forecasted Growth of Edge Computing (USD, bn)



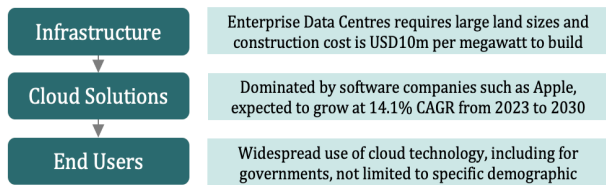
Source: Statista

Figure 10: Forecasted Growth of Data Centers (USD, bn)



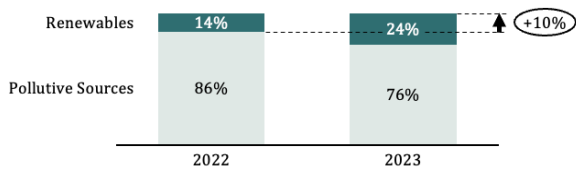
Source: Statista, Markets and Markets

Figure 11: Value Chain of Data Centre Industry



Source: KPMG, GSMA

Figure 12: Increasing Renewable Energy for Telco Infrastructure



Source: Deloitte

Industry Outlook

Continued Growth in 5G Market in Japan

The market growth of 5G services in Japan is on a fast track, with a forecasted Compound Annual Growth Rate (CAGR) of 39.6% from JPY 4.5bn in 2022 to JPY 65.0bn in 2030 (Figure 8). This rapid growth is primarily attributed to strong government support in Japan, allowing telecommunication operators to install 5G base stations on more than 200,000 traffic signals nationwide in 2022. These infrastructure enhancements will accelerate the deployment of 5G services, leading to increased adoption and demand for 5G subscriptions.

Coupled with existing high barriers to entry into Japan's telecommunications market, such as licensing requirements and infrastructure capabilities. It is expected that the concentration of most sales will be among a few major existing players.

Strong Demand for Edge Computing

The heightened demand for edge computing, a distributed computing framework that brings enterprise applications closer to data sources like IoT devices and local edge servers, is expected to revolutionize the provision of online services among existing companies. This infrastructure upgrade will enable companies to achieve reduced costs, increased access to new apps, improved business KPIs, and enhanced productivity.

The market CAGR is forecasted to be 15.7%, reaching USD 111.3bn by 2028 (Figure 9). This is mainly due to key drivers such as stronger demands for IoT and real-time analytics. The adoption of edge computing will improve business functions and cost efficiency of existing tech companies.

Exponential Growth in Data Centers

Data centres are forecasted to grow from USD 315.0bn in 2022 to USD 440.0bn in 2028, with a CAGR of 5.7% (Figure 10). This growth is driven by rapid digitalization worldwide and the increased demand for cloud computing. For instance, cloud solutions are expected to grow at a 14.1% CAGR from 2023 to 2030 due to heightened demand from software companies such as Apple. Furthermore, data centres require large land sizes, and construction cost is USD 10 million per megawatt to build. Lastly, there is an increasing widespread use of cloud technology among many demographics, including the government (Figure 11).

Growing Concern of Sustainability for Telecom Infrastructure

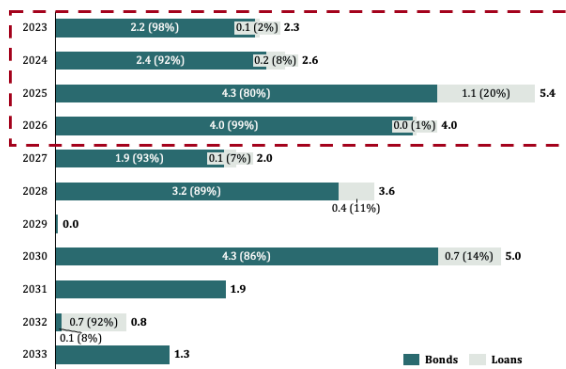
There is a growing emphasis on carbon reduction in the telco industry. This is mainly driven by the rising costs of non-renewable energy sources, such as oil, which are currently at an all-time high, and a stronger push for sustainability goals from the UN government. In 2023, the usage of renewable energy for telco infrastructure increased by 10%, and globally, 61% of telco companies have pledged to net-zero targets (Figure 12).

Figure 13: NTT Table of Financial Ratios & Forecasts

	2021A	2022A	2023F	2024F	2025F	2026F	2027F
Profitability Ratios							
Underlying profit margin	8%	8%	9%	9%	9%	9%	9%
ROA (Underlying profit)	5%	5%	5%	5%	5%	4%	4%
ROE (Underlying profit)	14%	14%	14%	15%	14%	14%	14%
Liquidity Analysis							
Quick Ratio	85%	90%	109%	111%	119%	127%	139%
Current Ratio	91%	97%	117%	122%	132%	142%	155%
Operating Cash Flow Ratio	48%	33%	63%	41%	38%	36%	36%
Solvency Analysis							
Debt / Assets	31%	33%	34%	35%	37%	39%	41%
Debt / Equity	89%	96%	93%	104%	117%	132%	146%
Long-Term Debt / Equity	69%	75%	74%	87%	100%	116%	130%
Debt Service Coverage	24%	23%	24%	22%	19%	17%	15%
Altman Z-score							
Working Capital / Assets	(0.0)	(0.0)	0.0	0.1	0.1	0.1	0.1
Retained Earnings / Assets	0.3	0.3	0.3	0.3	0.3	0.3	0.3
EBIT / Assets	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Equity / Liabilities	0.3	0.3	0.4	0.3	0.3	0.3	0.3
Revenue / Assets	0.6	0.6	0.6	0.5	0.5	0.5	0.4
Altman Z-score	1.4	1.5	1.6	1.5	1.4	1.4	1.3

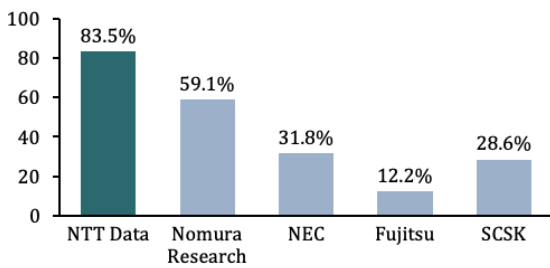
Source: NTT's Financial Statements

Figure 14: NTT's Near-term Concentration of Debt Maturity (USD, bn)



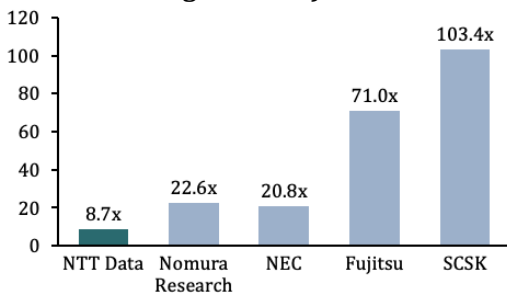
Source: Refinitiv, Company Filings

Figure 15: NTT's Debt to Equity (Data & Consulting Business)



Source: Refinitiv, Company Filings

Figure 16: NTT's Interest Coverage Ratio (Data & Consulting Business)



Source: Refinitiv, Company Filings

Financial Analysis

Overview:

The table on the left shows NTT's latest 2-year historical financial performance and 5-year forecast s including key ratios which indicate their profitability, activity, liquidity and leverage positions (Figure 13). We identify revenue growth to be the key driver for various metrics changes. A stable but slow-growing profit, coupled with increasing spendings on expansion and investments that is likely to be financed through debt, are expected to add pressure to profitability, liquidity, and solvency ratios of the company.

However, NTT's strong balance sheet provides support to the company's fundamentals and key metrics are expected to stay within a comfortable range. We expect improvements in the long term across key measurements and company's fundamentals driven by increasing revenue generation in high-growth sectors such as data centers and cloud services.

Investment and Deregulations to Improve Profitability

Bottom-up revenue forecast suggests TMT challenges to capitalize 5G and 6G tech markets due to regulatory restrictions on partnerships and R&D, with forecasted profit margin to remain largely stagnant at 8-9%. However, there could be ramp ups for long-term growth with ease of lawmaker regulations and JPY 8000 bn investments in R&D, data utilization, and data center upgrades to bolster cash-generation. The degree of improvements is largely dependent on the marginal synergy and edge created from the abovementioned investment and deregulations.

Liquidity Faces Short-term Pressure

We expect short-term cash flow to decline with more near-term debt maturities. 14.3bn (49.4%) of all debt matures within the next 3 years (Figure 14), sounding off a cautious tone on higher refinance costs given rising interest rates across both USD and JPY.

However, we also anticipate improved future liquidity driven by enhanced cash generation plans, revenue expansion in Phoenix, Thailand, and the healthcare sector, that is likely to alleviate the pressure facing NTT's liquidity.

Growing Debt as Financing Source to Drag on Solvency

There is a growing dependence on debt to fund expansion in R&D, data utilization, and data center upgrades as such initiatives are capital intensive and cashflow growth from operations is likely to remain slow and unable to fund the expansion.

Long-term interest coverage gradually declines due to high debt levels but is expected to withstand refinancing costs due to stable and improving cash flow.

Comfortable Interest Coverage Ratios across Businesses

NTT's Telecom and Data Centre Businesses have interest coverage ratios at 28.5x (Figure 15) and 8.7x (Figure 16) respectively. NTT led its telecom peers and had one of the highest interest coverage ratio, compared to 2.8x for both Singtel and PCCW. On the other hand, NTT stands the lowest in terms of interest coverage ratio for its data centre business, compared to 71x for Fujitsu and 103x for SCSK. Both interest coverage ratios are likely to face downwards pressure due to higher forecasted leverage positions and interest payments. However, the ratios still remain at very comfortable range for NTT to meet debt servicing obligations.

Figure 17: NTT's New Value Creation & Sustainability 2027 Goals

NTT as a Creator of New Value and Accelerator of a Global Sustainable Society	
(1) IOWN-Driven Creation of New Value	(3) Achievement of a Circular Economy Society
(2) Data-Driven Creation of New Value	(4) Further Strengthening of Business Foundations

Source: Company Filings and Website

Figure 18: NTT's Network in United States



Source: Nippon Times

Recent developments

New Value Creation & Sustainability 2027

NTT's "New Value Creation & Sustainability 2027 Powered by Innovative Optical and Wireless Network (IOWN) strategy, means to invest ~JPY8,000bn in the next five years, focusing in growth areas such as R&D, data utilization, and data center upgrades, as well as accelerate cash-generation ability for the future (Figure 17).

NTT targets a 20% EBITDA increase by FY2027, aiming for JPY4,000bn. These measures align with global sustainability goals and enhance competitiveness in the telecom industry.

Entrance into Phoenix, Arizona in the US

NTT entered the US telecom market via Phoenix and Arizona. Phoenix, ranked fourth in the US data center market, boasts 90+ facilities with 600MW power, attracting industry giants. NTT's strategic expansion, featuring a Point-of-Presence (PoP) within Phoenix AP's data center, fortifies its IP network presence in the US (Figure 18). This move fosters connections with new clients and enhances support for global customers. NTT's overarching goal remains firm: elevating revenue streams within the Global Solutions Business segment.

Launch of AWS-Partnered Cloud Services in Thailand

NTT is the first AWS Direct Connect Delivery partner in Thailand, bolstering cloud connectivity. Connecting its Bangkok Data Centers to AWS, NTT doesn't need to route through Singapore, offering secure and high-bandwidth access. Thus, it strengthens NTT's market presence, potentially boosting market share and profitability. NTT's commitment to data security also adds weight amid growing cybersecurity concerns.

Easing of NTT Regulations for 6G Tech Race

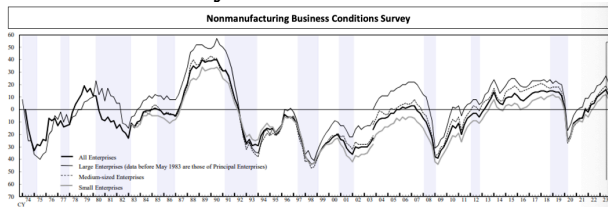
Japanese lawmakers are reviewing regulations governing NTT mandating nationwide service, and decision-making limits. The need for this review arises from NTT's IOWN project, aimed at significantly reducing telecom power usage, though strict disclosure demands hindered potential partners.

These adjustments could affect IOWN's success and NTT's 6G communications market competitiveness.

Other notables:

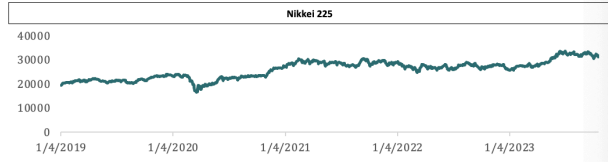
- NTT DOCOMO's recent announcement of a public tender offer for INTAGE HOLDINGS aims to establish INTAGE HD as a subsidiary and broaden its marketing solutions business.
- In Sep 2023, NTT partnered with National Centre for Neurology and Psychiatry (NCNP) to develop "Brain Bio-Digital Twin" tech. They aim to detect and prevent mental health conditions, reducing the need for costly diagnostics. NTT also showcased progress in Project Humanity, enhancing life quality for ALS patients with advanced tech.

Figure 19: Nonmanufacturing Business Conditions Survey



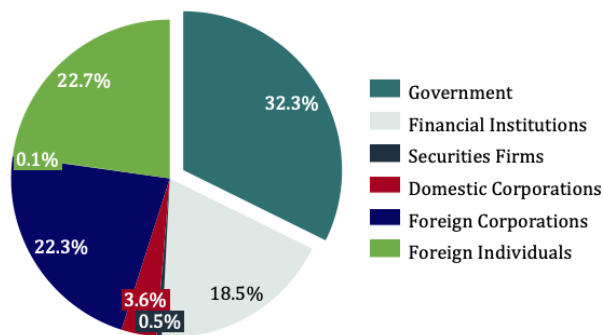
Source: Japan's Government Survey

Figure 20: Nikkei 225



Source: Nikkei

Figure 21: NTT's Shareholder Breakdown



Source: Company Filings

Issuer Credit Analysis

Positives

1. Diversification of business in high-growth areas

NTT has highly diversified business operations spanning traditional telecommunication business that provides steady and a bulk of its total revenue stream (~40%), mobile services (~25%), and high-growth sectors including data centres and cloud services (~25%). The secular growth trend and potential set the company well poised to capitalize revenue growth and enhance its credit profile through diversification.

Data centers are forecasted to grow from USD315.0bn in 2022 to USD440.0bn in 2028, with CAGR of 5.7%. Key driver is the rapid digitalization across the world, dramatically increasing the need for cloud computing which is underpinned by data centers.

Edge computing is a distributed computing framework that brings enterprise applications closer to data sources such as IoT devices or local edge servers. Key drivers are stronger push for IoT and real-time analytics, and it acts as an extension of their existing system.

2. Japan's upbeat corporates to provide growth support

The Bank of Japan's quarterly Tankan release, a very comprehensive survey of Japan's firms, shows companies remain upbeat as inflation returns to Japan after three lost decades.

Sentiments were to the upside and non-manufacturers reported the strongest conditions since 1991 (Figure 19), reflecting robust recovery of Japan's economy (Figure 20) which provides fundamental backstop to the company's operations and credit profile due to government's large shareholding and significant domestic revenue.

Negatives

1. Potential full privatization of NTT

The market is currently focused on discussions of NTT becoming a fully privatized company. The government, through the Ministry of Finance, currently and is required to own more than one third of stake of NTT shares, dictated by the NTT Law (Figure 21).

The purpose of the company defined by the law is to ensure proper and stable provision of telecommunications services all over Japan including remote rural areas by these companies, and the government is to hold at least one third of the NTT shares.

The Liberal Democratic Party (LDP) has set up a project team for reviewing the status of the NTT Act, including the possibility of repealing the NTT Act, to allow full privatization of NTT. The purpose of the privatization and sale of the NTT stake by the government is to fund planned increases in defense spending in coming years, according to party officials. The current spreads of the NTT bond yield curve are based on the assumption of government support in time of needs. The withdrawal from the company by the Japanese Government in terms of shareholding could result in widening of the spreads and the deteriorated credit profile perceived by the investors.

However, the NTT Act also states that NTT has an obligation to research electronic communications technologies and publicly disclose the results of this research. This provides a silver lining of deregulation to the company as it will then be able to retain its proprietary research and technological edge over its competitors, further reinforced through its current market-leading position.

2. High leverage not boding well with rising interest rates

14.3bn (49.4%) of all debt matures within the next 3 years, sounding off a cautious tone on higher refinance costs given rising interest rates across both USD and JPY.

The market census opined that the Federal Reserve may have finally come to the end of its hiking cycle, leaving federal funds rate at a two-decade high of 5.25-5.50% range. The Bank of Japan during its end October meeting, watered down its 1% cap on the 10-year bond yield which it set just three months ago to allow long-term borrowing costs to rise more.

The challenging interest rate environment in the US and the rising interest rate domestically in Japan both pose pressure to NTT's refinancing needs especially in the short term. However, stable revenue generation and ample interest coverage should help the company to navigate through the maturity wall in the next three years before macroeconomic environment most likely will see an improvement to operational and financing conditions.

Issuance Analysis

NTT's Outstanding Bonds

Comparing to APAC Telecom Peers

NTT bonds are trading mostly in line with its Developed Market (DM) APAC peers, with G-Spreads mostly in the 65-100bp range (Figure 22). NTT's G-spreads relative to that of overall APAC Telecom are mostly at a differential of within 5bp, indicating similar credit profiles for the sector across the region. This is in line with expectations as most telecom companies within the region have significant government shareholdings, supporting the credit fundamentals of the curve and justifying the tight spreads. South Korea Telecom companies trended much higher at the middle and long end of the yield curve due to small government stake in the companies.

Limited G-spread may Widen in the face of Potential Privatization

The limited G-spread is underpinned by the market leader status of the company as well as the presumed government support due to its large shareholdings through Ministry of Finance.

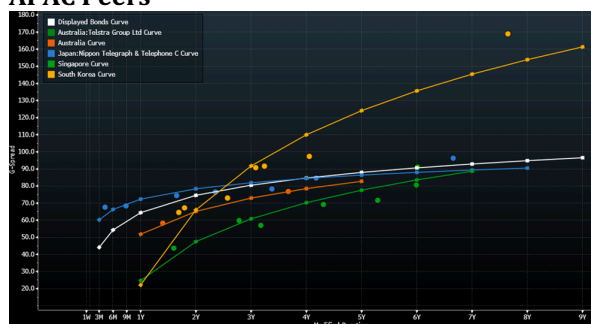
The potential privatization therefore presents risks of downgrading of the credit profile of the company with government's withdrawal and may result in yield peaking and upward shift of the curve.

However, we believe the withdrawal, even were to happen, will be a gradual process with progressive reduction of shareholding by the government, as conveyed by the LDP. The deregulation as a result of the process may offer silver lining to the prospect of the company.

Overweight NTT 0.583 03/01/24

Among the USD issuances (Figure 23), we prefer the NTT 0.583 03/01/24 tranche for the higher yield to maturity of 6.11 comparing to yields at low-to-mid 5 for longer maturity issuances. Additionally, the uncertainties stemming from the potential privatization and the likely widening of spreads prevent us from taking an overweight position at the longer end of the curve, despite nearing the end of the Fed's hiking cycle.

Figure 22: Relative Valuation of NTT against APAC Peers



Source: Bloomberg as of 19 October 2023

Figure 23: NTT Bonds under review

Name	Currency	Ask Yield to Maturity	Spread to Treasury
NTT 0.583 03/01/24	USD	6.11	77.4
NTT 4.142 07/26/24	USD	5.84	49.6
NTT 4.239 07/25/25	USD	5.54	54.2
NTT 1.162 04/03/26	USD	5.48	70.3
NTT 4.372 07/27/27	USD	5.29	70.9
NTT 1.591 04/03/28	USD	5.30	78.4
NTT 2.065 04/03/31	USD	5.39	90.8

Source: Bloomberg as of 19 October 2023

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Appendix:

Pro Forma Financial Statements (3FS)

Balance Sheet

Summary Balance Sheet

Units	2019	2020	2021	2022	2023	2024	2025	2026	2027
Assets									
Current assets									
Cash									
Other short-term investments	1,034	936	835	794	2,369	2,478	2,822	3,295	3,921
Total cash	32	42	88	99	65	74	81	80	75
Net receivables	1,066	977	923	893	2,435	2,551	2,904	3,375	3,996
% change	3,503	3,535	3,605	4,186	4,452	4,815	5,306	5,743	6,253
Inventory		1%	2%	16%	6%	8%	10%	8%	9%
% change	257	315	408	517	653	833	1,056	1,339	1,701
Other current assets		23%	29%	27%	26%	27%	27%	27%	27%
% change	530	498	575	919	1,131	1,502	2,081	2,736	3,674
Total current assets		-6%	15%	60%	23%	33%	39%	31%	34%
	6,704	5,326	5,717	6,655	8,671	9,702	11,348	13,195	15,625
Non-current assets									
Property, plant and equipment									
Net property, plant and equipment	9,534	9,922	10,022	10,436	10,756	11,050	11,416	11,763	12,119
% change		4%	1%	4%	3%	3%	3%	3%	3%
Goodwill	981	1,056	1,213	1,283	1,405	1,546	1,676	1,832	2,001
% change		8%	15%	6%	9%	10%	8%	9%	9%
Intangible assets	1,694	1,766	1,952	2,123	2,289	2,497	2,710	2,940	3,195
% change		4%	11%	9%	8%	9%	9%	8%	9%
Other long-term assets	713	792	896	941	1,033	1,130	1,221	1,331	1,449
% change		11%	13%	5%	10%	9%	8%	9%	9%
Total non-current assets	16,311	17,639	18,146	18,654	19,587	20,566	21,594	22,674	23,808
Total assets	23,014	22,965	23,862	25,309	28,258	30,268	32,943	35,869	39,433
Liabilities and stockholders' equity									
Liabilities									
Current liabilities									
Current debt	2,055	3,169	1,647	1,840	1,951	1,754	1,798	1,789	1,741
% change		54%	-48%	12%	6%	-10%	3%	-1%	-3%
Accounts payable	2,143	2,357	2,500	2,807	3,073	3,358	3,705	4,063	4,460
% change		10%	6%	12%	9%	9%	10%	10%	10%
Other current liabilities	996	1,563	1,130	1,144	1,259	1,190	1,214	1,241	1,235
% change		57%	-28%	1%	10%	-5%	2%	2%	0%
Total current liabilities	6,608	7,426	6,259	6,840	7,387	7,978	8,616	9,306	10,050
Non-current liabilities									
Long-term debt	2,166	4,456	5,717	6,390	7,671	8,891	10,489	12,265	14,406
% change		106%	28%	12%	20%	16%	18%	17%	17%
Deferred tax liabilities	70	81	137	143	186	250	306	395	508
% change		16%	69%	4%	30%	34%	23%	29%	29%
Other long-term liabilities	327	376	378	359	372	371	368	372	372
% change		15%	1%	-5%	4%	0%	-1%	1%	0%
Total non-current liabilities	4,944	7,336	8,585	9,118	10,486	12,059	13,868	15,948	18,340
Total liabilities	11,552	14,762	14,844	15,958	17,873	20,037	22,484	25,254	28,390
Stockholders' equity									
Common stock	938	938	938	938	938	938	938	938	938
Retained earnings	6,500	7,068	7,294	8,150	9,447	9,293	9,520	9,677	10,104
Total stockholders' equity	9,061	7,563	8,282	8,561	10,385	10,231	10,458	10,615	11,042
Total liabilities and stockholders' equity	23,014	22,965	23,862	25,309	28,258	30,268	32,943	35,869	39,433

Income Statement

Summary Income Statement

	Units	2019	2020	2021	2022	2023	2024	2025	2026	2027
ICT OP				1072.5	1093.9					
RC OP				440	420.5					
GS OP				210.5	265.6					
Others OP				72.5	89.2					
Overall OP				1795.5	1869.2	2263.5	2288.7	2314.2	2340.0	2366.1
ICT OP contribution				60%	59%	52%	52%	52%	52%	52%
ICT PBT % growth					1.0%	8.6%	1.0%	1.0%	1.0%	1.0%
Regional Comm OP contribution				25%	22%	26%	26%	26%	26%	26%
Regional Comm PBT % growth					-5.2%	39.0%	1.4%	1.4%	1.4%	1.4%
Global Solution OP contribution				12%	14%	10%	10%	10%	10%	10%
Global Solution PBT % growth					35.7%	-16.2%	1.0%	1.0%	1.0%	1.0%
Others OP contribution				4%	5%	12%	12%	12%	12%	12%
Others PBT % growth					17.5%	200.9%	1.0%	1.0%	1.0%	1.0%
Overall % Growth						21%	1%	1%	1%	1%
Profit Attributable				1181.1	1213.1	1468.991	1485.346	1501.898	1518.649	1535.602

Income by Business Segments

	Units	2019	2020	2021	2022	2023	2024	2025	2026	2027
ICT										
Total revenue	bn			5870.2	6059	6,370.7	6,434.4	6,498.7	6,563.7	6,629.4
Personnel expense	bn			470.7	476.5	475.4	480.2	485.0	489.8	494.7
COGS	bn			2875.3	3033	3,154.7	3,186.3	3218.1	3250.3	3282.8
D&A	bn			779.9	785.9	836.4	844.7	853.2	861.7	870.3
Others	bn			671.7	669.7	716.6	723.7	731.0	738.3	745.7
PBT	bn			1082.4	1093.5	1,187.6	1,199.5	1,211.5	1,223.6	1,235.8
% growth	%				1.0%	8.6%	1.0%	1.0%	1.0%	1.0%
Tax	bn			62.7	64.7	69.5	70.2	70.9	71.6	72.4
PAT	bn			1019.7	1028.8	1,118.1	1,129.3	1,140.6	1,152.0	1,163.5
Regional Comm										
PBT	bn	384.3	417.7	439.8	416.8	579.4	587.7	596.2	604.8	613.6
% growth	%				-5.2%	39.0%	1.4%	1.4%	1.4%	1.4%
Tax	bn	139.3	139.2	138.6	142.2	196.2	199.1	202.0	204.9	207.9
PAT	bn	245.0	278.5	301.2	274.6	383.1	388.6	394.2	399.9	405.6
Global Solutions										
PBT	bn	111.7	149.6	221.3	300.4	251.6	254.2	256.7	259.3	261.9
% growth	%				35.7%	-16.2%	1.0%	1.0%	1.0%	1.0%
Tax	bn	47.4	54.8	75.1	94.2	87.4	88.3	89.2	90.1	91.0
PAT	bn	64.3	94.8	146.2	206.2	164.2	165.8	167.5	169.2	170.9
Others										
Total revenue	bn			1,396.0	1,807.0	1,825.1	1,843.3	1,861.8	1,880.4	1,899.2
Personnel expense	bn			248.8	265.4	0.2	0.2	0.2	0.2	0.2
COGS	bn			914.1	1,278.3	1243.1	1255.5	1268.1	1280.7	1293.5
D&A	bn			118.9	126.9	141.8	143.2	144.7	146.1	147.6
Others	bn			53.5	54.3	62.4	63.0	63.6	64.3	64.9
PBT	bn			106.8	125.5	377.6	381.4	385.2	389.1	393.0
% growth	%				17.5%	200.9%	1.0%	1.0%	1.0%	1.0%
Tax	bn			34.3	36.3	115.3	116.4	117.6	118.7	119.9
PAT	bn			72.5	89.2	262.4	265.0	267.7	270.3	273.0

Cash Flow

Summary Cash Flow

Units	2019	2020	2021	2022	2023	2024	2025	2026	2027
Cash flows from operating activities									
Net income	855	916	1,181	1,213	1,469	1,485	1,502	1,519	1,536
Depreciation & amortisation	1,465	1,507	1,561	1,583	2,198	2,142	2,089	2,139	2,203
% of NI	2	2	1	1	1	1	1	1	1
Change in working capital	343	254	68	(526)	35	(42)	(116)	(163)	(72)
Inventory	60	(64)	(87)	(141)	(58)	(87)	(93)	(95)	(83)
Other working capital	1,139	1,214	1,252	409	1,004	970	909	823	926
Other non-cash items	(7)	(2)	(61)	93	6	9	12	30	14
Net cash provided by operating activities	2,995	3,009	3,010	2,261	4,654	3,234	3,290	3,360	3,634
Cash flows from investing activities									
Investments in property, plant and equipment	(1,856)	(1,795)	(1,758)	(1,852)	(1,815)	(1,805)	(1,808)	(1,820)	(1,812)
Acquisitions, net	(127)	(31)	(122)	(82)	(90)	(81)	(94)	(87)	(88)
Purchases of investments	(202)	(375)	(126)	(77)	(195)	(193)	(148)	(153)	(172)
Sales/maturities of investments	294	42	187	109	158	124	145	134	140
Other investing activities	39	5	77	93	53	57	70	68	62
Net cash used for investing activities	(1,853)	(1,425)	(1,699)	(1,737)	(1,889)	(1,898)	(1,834)	(1,857)	(1,870)
Cash flows from financing activities									
	(1,041)	(1,690)	(1,438)	(590)	(1,190)	(1,227)	(1,111)	(1,029)	(1,139)
Net change in cash	87	(98)	(101)	(41)	1,575	109	344	473	625
Cash at beginning of period	946	1,034	936	835	794	2,369	2,478	2,822	3,295
Cash at end of period	1,034	936	835	794	2,369	2,478	2,822	3,295	3,921

Integrated ICT

Summary Income Statement

	Units	2021	2022	2023	2024	2025	2026	2027
NTT DOCOMO								
Total revenue	bn	5,870.2	6,059.0	6,370.7	6,434.4	6,498.7	6,563.7	6,629.4
Personnel expense	bn	470.7	476.5	475.4	480.2	485.0	489.8	494.7
COGS	bn	2,875.3	3,033.0	3,154.7	3,186.3	3,218.1	3,250.3	3,282.8
D&A	bn	779.9	785.9	836.4	844.7	853.2	861.7	870.3
Others	bn	671.7	669.7	716.6	723.7	731.0	738.3	745.7
PBT	bn	1,082.4	1,093.5	1,187.6	1,199.5	1,211.5	1,223.6	1,235.8
Tax	bn	62.7	64.7	69.5	70.2	70.9	71.6	72.4
PAT	bn	1,019.7	1,028.8	1,118.1	1,129.3	1,140.6	1,152.0	1,163.5

Revenue Drivers

	Units	2021	2022	2023	2024	2025	2026	2027
NTT DOCOMO								
Total revenue		6,114.5	6,307.6	6,370.7	6,434.4	6,498.7	6,563.7	6,629.4
% growth	%	NA	3.2%	1.0%	1.0%	1.0%	1.0%	1.0%
Enterprise								
Total revenue	bn	1,719.5	1,805.7	1,823.8	1,842.0	1,860.4	1,879.0	1,897.8
% growth	%	NA	5.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Smart Life								
Total revenue	bn	960.4	1,114.5	1,125.6	1,136.9	1,148.3	1,159.8	1,171.4
% growth	%	NA	16.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Consumer Communications								
Total revenue	bn	3,434.6	3,387.4	3,421.3	3,455.5	3,490.0	3,524.9	3,560.2
% growth	%	NA	-1.4%	1.0%	1.0%	1.0%	1.0%	1.0%
Subscriptions								
Total subscriptions	thousand	84,752	87,495	85,600	86,456	87,320	88,193	89,075
% growth	%	NA	-3.14%	1.0%	1.0%	1.0%	1.0%	1.0%
Mobile								
Total subscriptions	thousand	11,530	20,602	11,645	11,762	11,879	11,998	12,118
% growth	%	NA	-44.03%	1.0%	1.0%	1.0%	1.0%	1.0%
Fixed								
Total subscriptions	thousand	61,396	57,771	62,010	62,630	63,256	63,889	64,528
% growth	%	NA	6.27%	1.0%	1.0%	1.0%	1.0%	1.0%
Fixed Broadband								
Total subscriptions	thousand	11,826	9,122	11,944	12,064	12,184	12,306	12,429
% growth	%	NA	29.64%	1.0%	1.0%	1.0%	1.0%	1.0%
Mobile Broadband								
Total subscriptions	thousand	2,120	2,742	2,141	2,163	2,184	2,206	2,228
% growth	%	NA	-22.68%	1.0%	1.0%	1.0%	1.0%	1.0%
Other								
Total subscriptions	%	0.6%	0.7%	0.6%	0.6%	0.6%	0.6%	0.7%
% growth	%	NA	-4.62%	1.0%	1.0%	1.0%	1.0%	1.0%
Other Services								
Total subscriptions	thousand	2,675	1,627	2,702	2,729	2,756	2,784	2,811
% growth	%	NA	64.41%	1.0%	1.0%	1.0%	1.0%	1.0%
Other								
Total subscriptions	thousand	12,396	10,861	12,520	12,645	12,772	12,899	13,028
% growth	%	NA	14.13%	1.0%	1.0%	1.0%	1.0%	1.0%

Cost Drivers

NTT DOCOMO								
Personnel								
Total expense	bn	470.7	353.3	475.4	480.2	485.0	489.8	494.7
% growth	%	NA	-24.94%	1.0%	1.0%	1.0%	1.0%	1.0%
No. of employees	number	46,500	47,150	46,965	47,435	47,909	48,388	48,872
% growth	%	NA	1.40%	1.0%	1.0%	1.0%	1.0%	1.0%
Avg. salary per person (annual)	thousand	1,012.3	749.3	1,022.4	1,032.6	1,042.9	1,053.4	1,063.9
% growth	%	NA	-25.98%	1.0%	1.0%	1.0%	1.0%	1.0%
COGS as % revenue								
	%	49.0%	50.1%	49.5%	49.5%	49.5%	49.5%	49.5%
Depreciation and amortization as % revenue								
	%	13.3%	13.0%	13.1%	13.1%	13.1%	13.1%	13.1%
Others as % revenue								
	%	11.4%	11.1%	11.2%	11.2%	11.2%	11.2%	11.2%
Tax rate as % of PBT								
	%	5.8%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%

Regional Communication

Summary Income Statement

	Units	2019	2020	2021	2022	2023	2024	2025	2026	2027
Regional Comm										
PBT	bn	459.6	469.0	511.9	470.8	579.4	587.7	596.2	604.8	613.6
% growth	%				-8.0%	23.1%	1.4%	1.4%	1.4%	1.4%
Tax	bn	139.3	139.2	138.6	142.2	179.5	182.1	184.8	187.5	190.2
PAT	bn	320.3	329.8	373.3	328.6	399.9	405.6	411.4	417.3	423.3
NTT East										
Total revenue	bn	1,677.1	1,740.6	1,718.0	1,726.1	1,738.5	1,759.3	1,780.4	1,801.7	1,823.3
Personnel expense	bn	359.6	372.6	344.0	353.3	347.4	350.9	354.4	358.0	361.5
COGS	bn	713.0	733.3	744.4	755.2	748.8	757.7	766.8	776.0	785.3
D&A	bn	222.1	237.9	221.7	225.0	229.5	232.3	235.1	237.9	240.7
Others	bn	52.1	82.2	54.3	53.5	63.6	64.4	65.2	66.0	66.7
PBT	bn	330.3	314.6	353.6	339.1	349.1	354.0	358.9	363.9	369.0
Tax	bn	74.3	75.0	74.6	77.7	79.0	80.1	81.2	82.3	83.5
PAT	bn	256.0	239.6	279.0	261.4	270.2	273.9	277.7	281.6	285.5
NTT West										
Total revenue	bn	1,434.3	1,462.3	1,513.5	1,505.9	1,531.9	1,550.5	1,569.4	1,588.5	1,607.9
Personnel expense	bn	323.6	336.8	313.7	322.1	316.8	320.0	323.2	326.4	329.7
COGS	bn	675.4	653.1	736.8	716.8	719.7	728.4	737.3	746.3	755.4
D&A	bn	192.6	210.3	199.9	198.2	208.1	210.6	213.2	215.8	218.4
Others	bn	45.5	78.7	38.4	48.8	57.0	57.7	58.4	59.1	59.8
PBT	bn	129.3	154.4	158.3	131.7	230.3	233.8	237.3	240.9	244.6
Tax	bn	65.0	64.2	64.0	64.5	100.5	102.1	103.6	105.2	106.8
PAT	bn	64.3	90.2	94.3	67.2	129.7	131.7	133.7	135.7	137.8

Revenue Drivers

	Units	2019	2020	2021	2022	2023	2024	2025	2026	2027
NTT East										
Total revenue		1,677.1	1,740.6	1,718.0	1,726.1	1,738.5	1,759.3	1,780.4	1,801.7	1,823.3
% growth	%	NA	-3.65%	1.32%	-0.47%	1.19%	1.20%	1.20%	1.20%	1.20%
Fixed Line (Telephone subscriber + INS-Net)										
Total revenue	bn	197.8	213.6	174.9	187.2	178.4	182.0	185.7	189.4	193.2
APRU	number	2,490	2,510	2,550	2,530	2,576	2,601	2,627	2,654	2,680
% growth	%	NA	0.80%	1.59%	-0.78%	1.0%	1.0%	1.0%	1.0%	1.0%
FLET's Hikari										
Total revenue	bn	178.6	196.0	155.1	163.7	158.2	161.4	164.7	168.0	171.4
APRU	number	4,690	4,790	4,490	4,570	4,535	4,580	4,626	4,672	4,719
% growth	%	NA	2.13%	-6.26%	1.78%	1.0%	1.0%	1.0%	1.0%	1.0%
Others										
Total revenue	bn	1,301	1,331	1,388	1,375	1,402	1,416	1,430	1,444	1,459
% growth	%	NA	2.33%	4.27%	-0.92%	1.0%	1.0%	1.0%	1.0%	1.0%
Telephone subscriber lines										
Total subscriptions	thousand	7,051	7,528	6,142	6,597	6,203	6,265	6,328	6,391	6,455
% growth	%	NA	6.76%	-18.41%	7.41%	1.0%	1.0%	1.0%	1.0%	1.0%
INS-Net										
Total subscriptions	thousand	892	982	718	803	725	732	740	747	755
% growth	%	NA	10.09%	-26.88%	11.84%	1.0%	1.0%	1.0%	1.0%	1.0%
Public telephones										
Total subscriptions	thousand	7	7	6	7	6	6	6	6	6
% growth	%	NA	0.31%	-13.67%	13.55%	1.0%	1.0%	1.0%	1.0%	1.0%
FLET's ISDN										
Total subscriptions	thousand	20	23	13	17	13	13	13	14	14
% growth	%	NA	15.00%	-43.48%	30.77%	1.0%	1.0%	1.0%	1.0%	1.0%
FLET's ADSL										
Total subscriptions	thousand	160	201	5	120	5	5	5	5	5
% growth	%	NA	25.63%	-97.51%	2300.00%	1.0%	1.0%	1.0%	1.0%	1.0%
FLET's Hikari										
Total subscriptions	thousand	3,809	4,091	3,455	3,583	3,490	3,524	3,560	3,595	3,631
% growth	%	NA	7.40%	-15.55%	3.70%	1.0%	1.0%	1.0%	1.0%	1.0%
Hikari Collaboration Model										
Total subscriptions	thousand	8,918	8,149	9,827	9,573	9,925	10,025	10,125	10,226	10,328
% growth	%	NA	-8.62%	20.59%	-2.58%	1.0%	1.0%	1.0%	1.0%	1.0%
Hikari Denwa										
Total subscriptions	thousand	10,018	9,940	10,058	10,075	10,159	10,260	10,363	10,466	10,571
% growth	%	NA	-0.78%	1.19%	0.17%	1.0%	1.0%	1.0%	1.0%	1.0%
FLET's TV Transmission Services										
Total subscriptions	thousand	1,121	1,082	1,177	1,154	1,189	1,201	1,213	1,225	1,237
% growth	%	NA	-3.48%	8.78%	-1.95%	1.0%	1.0%	1.0%	1.0%	1.0%

NTT West

Total revenue		1,434.3	1,462.3	1,513.5	1,505.9	1,531.9	1,550.5	1,569.4	1,588.5	1,607.9
% growth	%	NA	1.95%	3.50%	-0.50%	1.72%	1.22%	1.22%	1.22%	1.22%
Fixed Line (Telephone subscriber + INS-Net)										
Total revenue	bn	195.8	215.2	169.7	183.9	173.1	176.6	180.2	183.8	187.5
APRU	number	2,470	2,510	2,540	2,510	2,565	2,591	2,617	2,643	2,670
% growth	%	NA	1.62%	1.20%	-1.18%	1.0%	1.0%	1.0%	1.0%	1.0%
FLET's Hikari										
Total revenue	bn	166.3	177.3	150.7	156.7	153.7	156.8	159.9	163.1	166.4
APRU	number	4,740	4,820	4,550	4,620	4,596	4,641	4,688	4,735	4,782
% growth	%	NA	1.69%	-5.60%	1.54%	1.0%	1.0%	1.0%	1.0%	1.0%
Others										
Total revenue	bn	1,072	1,070	1,193	1,165	1,205	1,217	1,229	1,242	1,254
% growth	%	NA	-0.23%	11.53%	-2.33%	1.0%	1.0%	1.0%	1.0%	1.0%

Telephone subscriber lines										
Total subscriptions	thousand	7,052	7,615	5,966	6,527	6,026	6,086	6,147	6,208	6,270
% growth	%	NA	7.98%	-21.65%	9.40%	1.0%	1.0%	1.0%	1.0%	1.0%
INS-Net										
Total subscriptions	thousand	875	960	716	801	723	730	738	745	753
% growth	%	NA	9.71%	-25.42%	11.87%	1.0%	1.0%	1.0%	1.0%	1.0%
Public telephones										
Total subscriptions	thousand	8	8	7	7	7	7	7	7	7
% growth	%	NA	7.13%	-18.50%	4.30%	1.0%	1.0%	1.0%	1.0%	1.0%
FLET's ISDN										
Total subscriptions	thousand	27	31	18	23	18	18	19	19	19
% growth	%	NA	14.81%	-41.94%	27.78%	1.0%	1.0%	1.0%	1.0%	1.0%
FLET's ADSL										
Total subscriptions	thousand	221	282	53	166	54	54	55	55	56
% growth	%	NA	27.60%	-81.21%	213.21%	1.0%	1.0%	1.0%	1.0%	1.0%
FLET's Hikari										
Total subscriptions	thousand	3,509	3,679	3,311	3,391	3,344	3,378	3,411	3,445	3,480
% growth	%	NA	4.84%	-10.00%	2.42%	1.0%	1.0%	1.0%	1.0%	1.0%
Hikari Collaboration Model										
Total subscriptions	thousand	6,328	5,739	6,938	6,719	7,007	7,077	7,148	7,220	7,292
% growth	%	NA	-9.31%	20.89%	-3.16%	1.0%	1.0%	1.0%	1.0%	1.0%
Hikari Denwa										
Total subscriptions	thousand	8,674	8,563	8,694	8,707	8,781	8,869	8,957	9,047	9,137
% growth	%	NA	-1.28%	1.53%	0.15%	1.0%	1.0%	1.0%	1.0%	1.0%
FLET's TV Transmission Services										
Total subscriptions	thousand	795	747	888	841	897	906	915	924	933
% growth	%	NA	-6.04%	18.88%	-5.29%	1.0%	1.0%	1.0%	1.0%	1.0%

Cost Drivers

NTT East

Personnel										
Total expense	bn	359.6	372.6	344.0	353.3	347.4	350.9	354.4	358.0	361.5
% growth	%	NA	-3.49%	8.31%	-2.63%	1.0%	1.0%	1.0%	1.0%	1.0%
No. of employees	number	37,850	38,900	35,450	36,550	35,805	36,163	36,524	36,889	37,258
% growth	%	NA	-2.70%	9.73%	-3.01%	1.0%	1.0%	1.0%	1.0%	1.0%
Avg. salary per person (annual)	thousand	950.1	957.8	970.4	966.6	980.1	989.9	999.8	1,009.8	1,019.9
% growth	%	NA	-0.81%	-1.29%	0.39%	1.0%	1.0%	1.0%	1.0%	1.0%
COGS as % revenue	%	42.5%	42.1%	43.3%	43.8%	43.1%	43.1%	43.1%	43.1%	43.1%
Depreciation and amortization as % revenue	%	13.2%	13.7%	12.9%	13.0%	13.2%	13.2%	13.2%	13.2%	13.2%
Others as % revenue	%	3.1%	4.7%	3.2%	3.1%	3.7%	3.7%	3.7%	3.7%	3.7%
Tax rate as % of PBT	%	22.5%	23.8%	21.1%	22.9%	22.6%	22.6%	22.6%	22.6%	22.6%

NTT West

Personnel										
Total expense	bn	323.6	336.8	313.7	322.1	316.8	320.0	323.2	326.4	329.7
% growth	%	NA	4.08%	-6.86%	2.68%	1.0%	1.0%	1.0%	1.0%	1.0%
No. of employees	number	37,550	35,850	34,850	36,400	35,199	35,550	35,906	36,265	36,628
% growth	%	NA	-4.53%	-2.79%	4.45%	1.0%	1.0%	1.0%	1.0%	1.0%
Avg. salary per person (annual)	thousand	861.8	939.5	900.1	884.9	909.1	918.2	927.4	936.7	946.1
% growth	%	NA	9.01%	-4.19%	-1.69%	1.0%	1.0%	1.0%	1.0%	1.0%
COGS as % revenue	%	47.1%	44.7%	48.7%	47.6%	47.0%	47.0%	47.0%	47.0%	47.0%
Depreciation and amortization as % revenue	%	13.4%	14.4%	13.2%	13.2%	13.6%	13.6%	13.6%	13.6%	13.6%
Others as % revenue	%	3.2%	5.4%	2.5%	3.2%	3.7%	3.7%	3.7%	3.7%	3.7%
Tax rate as % of PBT	%	50.3%	41.6%	40.4%	49.0%	43.7%	43.7%	43.7%	43.7%	43.7%

Global Solution

Summary Income Statement

	Units	2019	2020	2021	2022	2023	2024	2025	2026	2027
Global Solutions										
PBT	bn	111.7	149.6	221.3	300.4	251.6	254.2	256.7	259.3	261.9
% growth	%				35.7%	-16.2%	1.0%	1.0%	1.0%	1.0%
Tax	bn	47.4	54.8	75.1	94.2	87.4	88.3	89.2	90.1	91.0
PAT	bn	64.3	94.8	146.2	206.2	164.2	165.8	167.5	169.2	170.9
NTT DATA										
Total revenue	bn	2,266.8	2,318.7	2,552.0	3,490.2	3,525.1	3,560.4	3,596.0	3,631.9	3,668.2
COGS	bn	1,694.6	1,734.1	1,875.9	2,567.9	2,614.1	2,640.2	2,666.6	2,693.3	2,720.2
SG&A	bn	441.3	445.4	463.4	663.1	668.3	675.0	681.7	688.6	695.4
PBT	bn	130.9	139.2	212.7	259.2	242.7	245.1	247.6	250.0	252.6
Tax	bn	45.1	53.7	72.8	92.8	86.8	87.7	88.5	89.4	90.3
PAT	bn	85.8	85.5	139.9	166.4	155.9	157.5	159.0	160.6	162.2
NTT Ltd										
Total revenue	bn	897.7	1,058.9	1,054.7	1,188.9	1,200.8	1,212.8	1,224.9	1,237.2	1,249.5
Personnel expense	bn	214.6	265.1	289.2	303.2	306.2	309.3	312.4	315.5	318.7
COGS	bn	624.1	694.8	650.9	745.5	779.2	787.0	794.8	802.8	810.8
D&A	bn	71.3	87.4	93.5	94.2	99.0	100.0	101.0	102.0	103.0
Others	bn	6.9	1.2	12.5	4.8	7.4	7.5	7.6	7.6	7.7
PBT	bn	-19.2	10.4	8.6	41.2	8.9	9.0	9.1	9.2	9.3
Tax	bn	2.3	1.1	2.3	1.4	0.6	0.6	0.7	0.7	0.7
PAT	bn	-21.5	9.3	6.3	39.8	8.3	8.4	8.5	8.5	8.6

Revenue Drivers

	Units	2019	2020	2021	2022	2023	2024	2025	2026	2027
NTT DATA										
Total revenue		2,266.8	2,318.7	2,552.0	3,490.2	3,525.1	3,560.4	3,596.0	3,631.9	3,668.2
% growth	%	NA	2.3%	10.1%	36.8%	1.0%	1.0%	1.0%	1.0%	1.0%
Public and Social Infrastructure										
Total revenue	bn	500.2	540.5	590.2	635.9	642.3	648.7	655.2	661.7	668.3
% growth	%	NA	8.1%	9.2%	7.7%	1.0%	1.0%	1.0%	1.0%	1.0%
Financial										
Total revenue	bn	580.4	607.6	639.8	662.2	668.8	675.5	682.3	689.1	696.0
% growth	%	NA	4.7%	5.3%	3.5%	1.0%	1.0%	1.0%	1.0%	1.0%
Enterprise and Solutions										
Total revenue	bn	588.6	590.9	466.6	520.4	525.6	530.9	536.2	541.5	546.9
% growth	%	NA	0.4%	-21.0%	11.5%	1.0%	1.0%	1.0%	1.0%	1.0%
Overseas										
Total revenue	bn	881.4	883.6	1,039.8	1,880.4	1,899.2	1,918.2	1,937.4	1,956.8	1,976.3
% growth	%	NA	0.2%	17.7%	80.8%	1.0%	1.0%	1.0%	1.0%	1.0%
Others										
Total revenue	bn	131.9	132.7	348.9	379.7	383.5	387.3	391.2	395.1	399.1
% growth	%	NA	0.6%	162.9%	8.8%	1.0%	1.0%	1.0%	1.0%	1.0%
Adjustments										
Total revenue	bn	(415.7)	(436.6)	(533.3)	(588.4)	(594.3)	(600.2)	(606.2)	(612.3)	(618.4)
% growth	%	NA	5.0%	22.1%	10.3%	1.0%	1.0%	1.0%	1.0%	1.0%
NTT Ltd										
Total revenue		897.7	1,058.9	1,054.7	1,188.9	1,200.8	1,212.8	1,224.9	1,237.2	1,249.5
% growth	%	NA	18.0%	-0.4%	12.7%	1.0%	1.0%	1.0%	1.0%	1.0%
High Value Services										
Total revenue	bn	NA	387.4	456.2	562.9	568.5	574.2	580.0	585.8	591.6
% growth	%	NA	NA	17.8%	23.4%	1.0%	1.0%	1.0%	1.0%	1.0%
Other Services										
Total revenue	bn	NA	671.5	598.5	626.0	632.3	638.6	645.0	651.4	657.9
% growth	%	NA	NA	-10.9%	4.6%	1.0%	1.0%	1.0%	1.0%	1.0%
Data center										
Total revenue	bn	NA	127.9	173.9	241.8	244.2	246.7	249.1	251.6	254.1
% growth	%	NA	NA	36.0%	39.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Managed services										
Total revenue	bn	NA	120.7	147.9	170.6	172.3	174.0	175.8	177.5	179.3
% growth	%	NA	NA	22.5%	15.3%	1.0%	1.0%	1.0%	1.0%	1.0%
Data Networks										
Total revenue	bn	NA	59.3	54.3	69.7	70.4	71.1	71.8	72.5	73.3
% growth	%	NA	NA	-8.4%	28.4%	1.0%	1.0%	1.0%	1.0%	1.0%
Other										
Total revenue	bn	NA	79.5	80.1	80.8	81.6	82.4	83.2	84.1	84.9
% growth	%	NA	NA	0.8%	0.9%	1.0%	1.0%	1.0%	1.0%	1.0%

Cost Drivers

NTT DATA

COGS as % revenue	%	74.8%	74.8%	73.5%	73.6%	74.2%	74.2%	74.2%	74.2%	74.2%
Selling, General and Administrative as % revenue	%	19.5%	19.2%	18.2%	19.0%	19.0%	19.0%	19.0%	19.0%	19.0%
Tax rate as % of PBT	%	34.5%	38.6%	34.2%	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%

NTT Ltd

Personnel										
Total expense	bn	214.6	265.1	289.2	303.2	306.2	309.3	312.4	315.5	318.7
% growth	%	NA	23.5%	9.1%	4.8%	1.0%	1.0%	1.0%	1.0%	1.0%
No. of employees	number	39,900	38,150	36,150	34,350	34,694	35,040	35,391	35,745	36,102
% growth	%	NA	-4.4%	-5.2%	-5.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Avg. salary per person (annual)	thousand	5,378.4	6,948.9	8,000.0	8,826.8	8,915.1	9,004.2	9,094.2	9,185.2	9,277.0
% growth	%	NA	29.2%	15.1%	10.3%	1.0%	1.0%	1.0%	1.0%	1.0%
COGS as % revenue	%	69.5%	65.6%	61.7%	62.7%	64.9%	64.9%	64.9%	64.9%	64.9%
Depreciation and amortization as % revenue	%	7.9%	8.3%	8.9%	7.9%	8.2%	8.2%	8.2%	8.2%	8.2%
Others as % revenue	%	0.8%	0.1%	1.2%	0.4%	0.6%	0.6%	0.6%	0.6%	0.6%
Tax rate as % of PBT	%	-12.0%	10.6%	26.7%	3.4%	7.2%	7.2%	7.2%	7.2%	7.2%

Others

Summary Income Statement

	Units	2021	2022	2023	2024	2025	2026	2027
Others								
Total revenue	bn	1,396.0	1,807.0	1,825.1	1,843.3	1,861.8	1,880.4	1,899.2
Personnel expense	bn	248.8	265.4	0.2	0.2	0.2	0.2	0.2
COGS	bn	914.1	1,278.3	1243.1	1255.5	1268.1	1280.7	1293.5
D&A	bn	118.9	126.9	141.8	143.2	144.7	146.1	147.6
Others	bn	53.5	54.3	62.4	63.0	63.6	64.3	64.9
PBT	bn	106.8	125.5	377.6	381.4	385.2	389.1	393.0
Tax	bn	34.3	36.3	115.3	116.4	117.6	118.7	119.9
PAT	bn	72.5	89.2	262.4	265.0	267.7	270.3	273.0

Revenue Drivers

	Units	2021	2022	2023	2024	2025	2026	2027
Others								
Total revenue		1,395.9	1,807.0	1,825.1	1,843.3	1,861.8	1,880.4	1,899.2
% growth	%	NA	29.45%	1.00%	1.00%	1.00%	1.00%	1.00%
System Integration Services								
Total revenue	bn	40.5	57.1	57.7	58.2	58.8	59.4	60.0
% growth	%	NA	40.99%	1.0%	1.0%	1.0%	1.0%	1.0%
Others								
Total revenue	bn	1,355.4	1,749.9	1,767.4	1,785.1	1,802.9	1,821.0	1,839.2
% growth	%	NA	29.11%	1.0%	1.0%	1.0%	1.0%	1.0%

Cost Drivers

Others								
Personnel as % revenue	%	17.8%	14.7%	16.3%	16.3%	16.3%	16.3%	16.3%
COGS as % revenue	%	65.5%	70.7%	68.1%	68.1%	68.1%	68.1%	68.1%
Depreciation and amortization as % revenue	%	8.5%	7.0%	7.8%	7.8%	7.8%	7.8%	7.8%
Others as % revenue	%	3.8%	3.0%	3.4%	3.4%	3.4%	3.4%	3.4%
Tax rate as % of PBT	%	32.1%	28.9%	30.5%	30.5%	30.5%	30.5%	30.5%