GCC Management™ Analysis Report

## **Quantum Solutions Co., Ltd.**

TSE Market code:2338

2024/3/

## The target market capitalization according to GCC Management™ is JPY 51 billion to JPY 127.1 billion.

Will the results that the diversified global management team has continued to pivot since 2019 finally bear fruit?

Based on the sales recording speed, it is estimated that the fiscal period ending in Feb 2026 will achieve sales of JPY 20 billion under the assumption.

This report analyzes corporate value from the perspective of GCC Management<sup>™</sup>," a framework developed by J. Phoenix Research Corporation ("JPR") that emphasizes three elements: Growth (sales growth), Connection (improved human and business connections = higher return on capital), and Corporate value

#### The global management team has promoted value enhancement

Since its establishment as an internet consulting firm in 1999, Quantum Solutions has undergone several transformations. In 2021, with the addition of a Shanghai executive, QS diversified its management and shifted strategies for value creation. Initially venturing into electric vehicles through a partnership with a Japanese company, QS later adjusted its focus due to slow progress. In May 2023, the company expanded into AI, tapping into its international network for hardware and AI gaming initiatives. Despite a history of losses, QS anticipates a leap in sales to 2 billion yen and a 200 million yen operating profit in the fourth quarter of 2023, aiming for full-year profitability. The effectiveness of the management's strategic pivots since 2019 will soon be assessed.

## Upward revision with an additional JPY 1.74 billion in sales from GPU server sales for AI development

Following a new business launch in GPU servers for AI on September 4th, Quantum Solutions swiftly secured four contracts, impacting sales with an additional 1.85 billion yen. This led to a raised sales projection for FY2024 by 1.74 billion yen. A significant 4.5 billion yen sale was reported on January 15th. Accumulating 6 billion yen in sales from these AI servers within five months highlights the company's rapid growth. Sales reaching 10 billion yen by FY2025 and possibly 20 billion by FY2026 are within expectations.

## The target market capitalization for April 2025 is JPY 51 billion to JPY 127.1 billion.

Quantum Solutions is diversifying beyond AI GPU servers to include ARM-based hardware for various services like edge computing, cloud storage, and digital twins. After swiftly achieving 6 billion yen from GPU server contracts in five months, future expansion appears promising. JPR's analysis projects QS's shareholder value could soar to 127.1 billion yen with sales of 20 billion yen by February 2026, translating to a share price between 840 and 2,094 yen—up to 4.9 times higher than March 2nd prices. To hit the top market cap, QS would need to maintain a CAGR of 46.6%, reaching sales of 426.8 billion yen and 37.1 billion yen in operating profit by FY2034. While the potential for failure exists, the pattern of global investor support suggests continued backing for QS's strategic pivots, with a high likelihood of these investments paying off, as shown by past disclosures.

#### **Basic Report**

Written and Edited by J-Phoenix Research Inc. Osamu Miyashita www.j-phoenix.com

Company	Overview
Location of Head Office	Chiyoda-ku, Tokyo
Representative	Mark Pink
Date of Establishment	1999/5/1
Paid-in Capital	JPY 3,268 million
Date of Listing D	November 19, 2002
URL	https://www.quantu m-s.co.jp/
Type of Business	Information and Communications
	dicators ch 1, 2024
Stock Price	JPY 420
52-week high	JPY 1,166
52-Week Low	JPY 224
Number of Shares Outstanding	43,609,593stocks
Trading Unit	JPY 100
Market Capitalization Company	JPY 18,316 million
Company Projected Dividend	JPY 0
Estimated Net Incom	JPY 3.05
Forecast PER	137.70 times
Actual BPS (Feb 28, 2023)	JPY 11.93
Actual PBR	35.21 times

Number of issued shares after dilution

Performance Trends	Sales	YoY	Opereting income	YoY	Ordinaly income	YoY	Net income	YoY	EPS	Stock	price
	JPY 1 mil.		JPY 1 mil.		JPY 1 mil.		JPY 1 mil.		(JPY)	High price (JPY)	Low price (JPY)
Results for FY 2 2020	456	26.1	-295	Deficit reduction	-311	Deficit reduction	-321	Deficit reduction	-35.95	153	113
Results for FY 2 2021	245	-46.3	-378	Deficit expansion	-377	Deficit expansion	-392	Deficit expansion	-36.40	279	208
Results for FY 2 2022	256	4.5	-360	Deficit reduction	-311	Deficit reduction	-280	Deficit reduction	-24.79	339	297
Results for FY 2 2023	264	3.1	-394	Deficit expansion	-156	Deficit reduction	-954	Deficit expansion	-76.24	314	314
Results for 3Q FY 2, 2023	186	-5.0	-294	Deficit reduction	-113	Deficit expansion	-925	Deficit expansion	-75.66	303	259
Results for 3Q FY 2, 2024	161	-13.6	-397	Deficit expansion	-268	Deficit reduction	-265	Deficit reduction	-19.43	1,166	224
Plans for FY 2 2024	2,070	7.8 times	45	Turn to profit	150	Turn to profit	125	Turn to profit	9.17	-	-

EPS except for Plans for FY 2024 is based on the historical disclosure. EPS for Plans for FY 2024 and BPS at Feb 28, 2023 is based on the numbers of shares after stock split in March 2024.

## 1. Investment Summary

Shareholder value analysis

The key to the qualitative story is the diverse management team's ideas

## Estimation by the Comparable Company Method and Excess profit Method

Assumption of achieving sales of ¥20 billion for the FY ending Feb 2026.

Looking ahead to the next 10 years for QS, there is a very high potential for growth in AI-related businesses. JPR has estimated the shareholder value, considering the future prospects of QS's business expansion, using both the Comparable Company Method and the Excess Earnings Method (refer to "Appendix 2" for details). The following figure visualizes the essence of the qualitative story that leads to this analysis. The points to consider when investing in QS, as well as the details of the qualitative story and the quantitative analysis, will be explained on the following page. Note that this estimate assumes that a sales target of ¥20 billion has been achieved for the fiscal year ending February 2026, based on the sales recording speed over the past five months.

### Shareholder Value Analysis(Unit: JPY 100 million)

Growth: Leveraging AI Marketplace to bolster Japan's growth opportunities garnering global attention

Connection: Make the most of GPU servers, ARM edge computing, and AIGC

Confidence: Early establishment of a high-profit structure and fostering trust



### Investment decision points

## 8 Points for Investment Decision-Making in QS

			- ·
Points		Perspective before 2024	Perspective in 2024
1	Values	QS contributes to development by leveraging a global network.	QS contributes to the growth and revitalization by utilizing global networks with AI.
2	Shareholder	The majority are global investors who share the same values.	Global investors who resonate with the strategy provide financing.
3	Management	The management team with global diversity that share the same values.	The diverse management team resonates with the strategy. They has a global network in AI.
4	Strategy	Collaborate with business partners to gather management resources and achieve results.	QS has formed global partnerships in AI, spanning hardware, software, content, and solutions.
5	Vision	Through repetition, there is a possibility of achieving success and realizing high growth.	Efforts in trial and error, and pivoting are likely to pay off and tangible results by moving to implementation.
6	Advantage	It has not been possible to build a long-term, sustainable competitive advantage.	Securing many partnerships focused on NVIDIA servers. QS's one-stop solution could secure a sustainable edge.
7	Timing	When the potential for values to flourish is high.	It's probable that QS's values will flourish, indicating a promising investment opportunity.
8	Risk	Investment risk is high. However, the valuation stays high due to long-term investor commitment.	Performance doesn't reflect current outcomes; Feb 2024 results and Feb 2025 outlook will be key.

Sorce: JPR

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## Shareholder value analysis using the comparable

## companies method, assuming sales of 20 billion yen are achieved in FY02/2026

26 Al-related companies								
100 Percentile	Current net profit from sales	PSR	PER					
100%	15.2%	237.46	17.23					
90%	14.0%	102.11	8.67					
75%	11.0%	58.05	6.35					
50%	8.7%	30.56	2.55					
25%	6.1%	19.92	1.61					
10%	3.7%	15.52	0.79					
QUA	NTUMSOLU	TIONS (233	8)					
	nareholder value billions l -	Estimated sto	ock price [JPY]3					
A <sup>1</sup>	B <sup>2</sup>	А	В					
3,44	4,126	5,678	6,799					
1,73	5 1,774	2,858	2,923					
1,271	1,009	2,094	1,662					
510	531	. 840	875					
32	322 346 53		570					
158	3 270	261	444					

Assuming sales of 20 billion yen in the fiscal year ending February 2026. Market capitalization reflecting target shareholder value as of April 2025<sup>4</sup>

## 127.1 billion yen - 51.0 billion yen

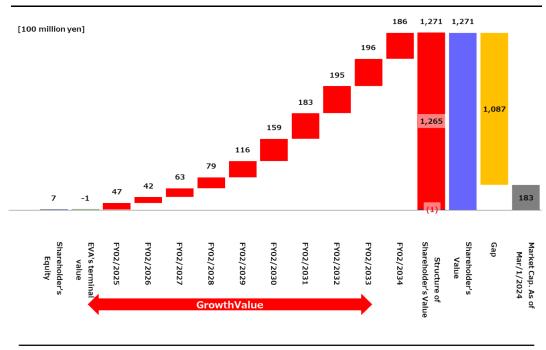
- 1: Estimated shareholder value based on the 100th, 90th, 75th, 50th, 25th, and 10th quartile PSRs of similar AI-related companies in the table above multiplied by QS's estimated FY02/2025 sales of 20 billion yen. The top figure is the estimated shareholder value based on the 100th quartile PSR.
- 2: Shareholder value is estimated by multiplying the P/E ratios of the 100th to 10th quartiles of similar AI-related companies by the estimated net profit margin. Estimated net income profit amount is  $200 \times 10^{10} \times 10^{10}$
- 3: Calculated using the fully diluted number of shares = 5,694,600 + 14,536,531 = 20,231,131 and the effect of stock split in March 2024.
- 4: Estimated by the 75th and 50th quartiles of the PSR.

Source: Compiled by JPR, based on closing price on January 26, 2024.

Twenty-six similar AI-related companies are referenced. Details are listed in a table in Appendix 1. 26 companies are listed below,

AI, Appier Group, Cyber Security Cloud, AI inside, Scigineer, ULS Group, Metarial, Fusic, ZDEP ADVANCE, ZDEP ADVANCE Gidep Advance, Gidep Advance, Socionext, Brainpad, Flext, Kit Alive, AI CROSS, TDSE, BlueMeme, BeeX, Tenda, Eblen, JTP, Techfirm Holdings, Shinden Hi-Techs, Inc.

### Excess value valuation of Quantum Solutions.



[Source] JPR

## Excess profit analysis explaining 127.1 billion yen (details)

[¥100mn]	Current Year	1 year later	2 years later	3 years later	4 years later	5 years later	6 years later	7 years later	8 years later	9 years later	10 years later
[+100,111]	2024.02	2025.02	2026.02	2027.02	2028.02	2029.02	2030.02	2031.02	2032.02	2033.02	2034.02
Sales	21	100	200	360	576	922	1,431	2,063	2,793	3,583	4,394
Operating income	0	9	17	31	50	80	124	179	243	311	382
Operating margin	2,2%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%
Sales growth rate	683.2%	383.1%	100.0%	80.0%	60.0%	60.0%	55.3%	44.2%	35.4%	28.3%	22.6%
NOPAT margin	1.5%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Invested capital turnover ratio	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%	25.5%
WACC	8.0%	8.00000%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
ROIC = NOPAT margin + invested capital net sales ratio	5.9%	23.5%	23.5%	23.5%	23.5%	23.5%	23.5%	23.5%	23.5%	23.5%	23.5%
ROIC / WACC (value created with the original hand of 1 ye	¥0.7	¥2.9	¥2.9	¥2.9	¥2.9	¥2.9	¥2.9	¥2.9	¥2.9	¥2.9	¥2.9
NOPAT	0.31	6.00	11.99	21.58	34.53	55.25	85.78	123.69	167.43	214.79	263.40
Invested capital × WACC	0.42	2.04	4.07	7.33	11.73	18.77	29.14	42.02	56.88	72.97	89.48
EVA	-0.11	3.96	7.9171	14.25	22.80	36.48	56.64	81.67	110.55	141.82	173.92
EVA = NOPAT - invested capital × WACC	-0.11	3.96	7.92	14.25	22.80	36.48	56.64	81.67	110.55	141.82	173.92
Value created in each year	-1	51	49	79	107	171	252	313	361	391	401
Discount Rate	100%	93%	86%	79%	74%	68%	63%	58%	54%	50%	46%
Present value of EVA	-1	47	42	63	79	116	159	183	195	196	186
Invested capital ① Origin	5										
Over profit value (Permanent value of EVA of this term	-1										
Growth value (Present value of increase in EVA) 3	1,265	-									
Non-business asset value ④	-1										
Corporate value = 1 + 3 + 3 + 4	1,268										
Interest-bearing debt, etc.	0										
直前四半期末と年度期末の株主資本簿価の増分	3										
Shareholder value	1,271										

[Source] JPR

## Three qualitative and quantitative information assumptions set for estimating shareholder value\*1

#### Growth: Leveraging AI Marketplace to bolster Japan's growth opportunities garnering global attention

#### Values and Worldviews

#### Leverage the next generation AI marketplace

Japan aims to boost its economy and has garnered global interest. OS plans to aid this by importing advanced AI technology from China, facilitating AI and digital transformation for Japan's revival. Leveraging the global AI marketplace, QS will bolster Japanese companies, fostering growth and expansion.

#### **Value provided and Growth Potential**

#### Providing AI hardware and software and their applications

In Japan, QS distributes the latest NVIDIA GPU chips (H200, A200) and offers a range of ARM hardware and solutions, covering LLM development, cloud phones, and edge computing. They also provide CloudAI, AI Celebrity, and GeneratorAI services, facilitating gamification, avatar creation, AI chat, and enhancing digital marketing and efficiency. Additionally, they support Japanese companies in harnessing AI technology.

Extremely high growth rate expected

2024.2

2034.2

**20.7** 

4,268 million

1,265

100 million

#### Connection: Make the most of GPU servers, ARM edge computing, and AIGC

#### Strategy

#### A bridge between AI technology and the Japanese market

The strategy involves introducing advanced AI technology to Japan through hardware, software, content, and integrated solutions, leveraging global management networks. Rapid development of commercial distribution channels has been achieved through their global network. However, the challenge lies in scaling up Japanese engineering and sales teams. Results are ongoing, with Q4 fiscal year 2024 being the crucial test period.

#### **Business Model**

#### Promoting business alliances and achieving results in a short period of time

QS's strategy entails swift collaboration with companies possessing leading AI technology, advanced hardware, and innovative solutions globally, aiming to rapidly boost sales and optimize business resources of partners for quick results. The emphasis lies on forming alliances rapidly. The collaboration between QS, with limited track record, and cutting-edge AI companies is attributed to a highly reliable human network.

#### **ROIC**

significant improvement

2024.2

2034.2

**5.9** % ▶

23.5 %

#### **Exceeds profit value**

100 million yen

#### Confidence: Early establishment of a high-profit structure and fostering trust

#### Financial Sustainability

#### Financial stability grows year by year

QS has encountered seven consecutive terms of deficit, with operating, ordinary, and net losses in the cumulative third quarter of the fiscal year ending February 2024, along with negative cash flow from operating activities. Concerns about the company's continuity as a going concern have emerged. The fourth-quarter results for the fiscal year ending February 2024 and the outlook for the fiscal year ending February 2025 are crucial in dispelling these doubts.

#### **Contributing to Social** Sustainability

#### Contributing to society and the environment through AI

AI and edge computing-based energy control technology plays a significant role and environmental societal contributions, particularly in enhancing resource efficiency and reducing CO2 emissions. Furthermore, AI-driven content is anticipated to foster communication and social cohesion. QS's initiatives hold promise as crucial technology for bridging social divides.

#### WACC

Contributing to society and the environment through AI

8.0 %

Shareholders' equity

100 million

<sup>\*1</sup>JPR has created its own estimates based on company plans based on company interviews.

## 2.Overview

### Company Overview

The end of Nov 2023

Company Name Quantum Solutions Co., Ltd.

Establishment May, 1999

Representative

Director Mark Pink

Head Office Location

1-10-9 Kudankita, Chiyoda, Tokyo, Kudan VIGAS Building

Capital Stock JPY 3,268 million

Number of 7 employees on a standalone; 46 employees on

Employees consolidated

Fiscal Year End February

Business Content development and distribution, software contract

development

Date of Listing Nov 19, 2002

Stock Exchange Listing

Tokyo Stock Exchange, standard market

Source: Compiled by JPR based on company data.

## Overview of Consolidated Subsidiaries / Group Companies

Company	Adress	Capital Stock (unit: JPY thousand)	Main Business	Investment Ratio (%)
Bit One Group Co.,Ltd.	Tokyo Chiyoda	135,000	System Solution Business	100
FASTEPS SINGAPORE PTE LTD	Singapore	SGD 1	System Solution Business	100
Quantum Automotive Limited	China Hong Kong	HKD 400 million	System Solution Business	100
PROCARELab co., Ltd.	Tokyo Chiyoda	60,265	Eyelash Care Business	100
CROSS ONE.,LTD.	Tokyo Chiyoda	10,000	System Solution Business	100
Quantum FOMM Limited	China Hong Kong	HKD 11,000	System Solution Business	66.7

Source: Compiled by JPR based on company data.

## Business Alliance, Contract, Capital Aliance

Year	Month	Company	Purpose
2023	May	U Power Limited(China)	Sign a contract aimed at a strategic business alliance. This alliance aims to develop new energy vehicles, battery storage, and charging and exchange battery stations.
2023	Jul	Compass Cloud Technology Pte. Ltd. (Singapore; Capital Stock SGD 30,000; Establishment Jun 13, 2023)	The board of directors decided to establish Compass Cloud AI Japan, a joint venture with Singapore's Compass Cloud Technology Pte. Ltd., as an equity-method affiliate of QS. The main reason for the company's establishment is the recognition of the potential to utilize ARM-based edge service hardware developed by Compass Cloud Technology to expand AI edge computing, cloud storage, cloud gaming, and digital twin businesses in Japan. Compass Cloud AI Japan's ARM architecture-based game cloud technology has already been used by 570 million gamers worldwide, mainly in China.
2023	Sep	KAYTUS SINGAPORE PTE. LTD. (Singapore; Capital Stock SGD 500,000; Establishment Oct 25, 2022)	Entered into a non-exclusive distribution agency agreement within Japan for KAYTUS products. KAYTUS is a world-class server manufacturer, excelling in high-performance GPU servers. In addition, the company offers a wide range of products including general-purpose servers, storage servers, edge computing, and next-generation liquid-cooled rack servers equipped with cutting-edge technology.
2023	Oct	TryAI Limited (Hong Kong; Capital Stock HKD 10,000; Establishment Jul 19, 2023)	Announced a new partnership with TryAI, a company specializing in the development, dissemination, education, and operation of AI applications. TryAI will contribute 4,750,000 yen, acquiring a 49% stake in Quontum's subsidiary, GPT Pals Studio Limited.
2023	Dec	JP GAMES, Inc. (Japan; Capital Stock JPY 99 million; Establishment Nov	Aiming to provide innovative games that utilize AI technology.

Source: Compiled by JPR based on company data.

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## 3. Value Creation Story of GCC Management ™

#### Growth

Promoting AI
Development in
Japan
Contract business
structure for this
purpose is fairly
well developed
Progress: 70%

Social change in the context of social change. Innovation Maintenance progress: 30%.

Progress in reflecting the results in performance: 10%

## Concept: Expectations for future based on implementation design

#### Conceptual Design: Driving the practical application of AI

QS has announced a new business plan focused on AI, in line with QS's commitment to promoting the practical application of artificial intelligence (AI). The plan will drive the practical application of AI in Japan through the development of AI-related hardware and software, focusing on three key areas: AI deep learning, AI inference, and AI applications, with significant investments already made in AI computing capacity.

In addition to its focus on hardware, QS is also committed to the development and implementation of a variety of AI applications.QS believes that AI will drive a wide range of business innovation, and plans to provide its Japanese customers with an extensive library of AI tools through the development of its Artificial Intelligence Generated Content (AIGC) business QS is confident that AI will drive a wide range of business reforms.

## Implementation design: focus on both hardware and software

QS has three major businesses in the field of AI: The first is the provision of hardware for AI deep learning. The second is the provision of hardware for AI inference. In the AI software area, QS is dedicated to the development and implementation of a wide variety of AI applications.

#### Achievements: Establish a sales structure

For GPU servers, the company has entered into a sales partnership with KAYTUS SINGAPORE PTE. LTD. to obtain non-exclusive distribution rights for KAYTUS products in the Japanese market from mid-September 2023; for ARM servers, to simplify sales, the company has formed a new joint venture, Compass Cloud Technology Pte. Ltd. and a new joint venture, Compass Cloud AI Japan Co. Details will be discussed later, but it is noteworthy that after the September 4 disclosure of "Launch of GPU server sales for AI development as a new business", the company disclosed sales activities that will lead to sales in the 2-6 billion yen range in about five months.

#### Connection

Significant progress on conceptual design.

Maintenance progress: 80%.

Maintenance progress: 50%

Maintenance progress: 0%.

### Leverage connections to global AI market

## Conceptual Design: Designing a commercial flow connecting advanced AI and Japan

OS has a highly diverse global management team. OS is leveraging its highly diverse global management network to access the world's most advanced AI hardware and software marketplace and is building a commercial distribution channel to bring advanced AI service products to the Japanese market. The company is uniquely positioned to combine its global talent network with Japan's AI-centric re-growth opportunities. What is remarkable is the speed of business development. As mentioned above, in September of last year, the company became a distributor of servers equipped with NIVIDA GPUs, and in just five months, it disclosed that it had closed sales or transaction deals worth between 2 and 6 billion yen. With this speed, the company is also developing a variety of edge computing solutions for the Arm architecture, which is a key hardware for AI. The company is also expanding its business in a variety of areas, including hardware-software solutions and the provision of games and avatars based on generated AI. It aims to become a hub that connects global AI technologies and services with business opportunities in AI in Japan.

## Implementation Design: The challenge is to improve Japanese engineers and sales personnel.

The challenge is human resources in terms of management resources. The key is to find Japanese AI software engineers who can translate the needs of Japanese customers into technology. Since the hardware can be procured from global sources, the supply concerns are not a major obstacle for QS, which has a strong global human network. What is even more important is a sales structure that builds solid relationships with customers. If sales are in the range of several billions of yen, it will be necessary to hire excellent salespeople if the company wants to aim for sales of 100 billion yen or more in the future. It is noteworthy that the management is very much aware of this point, and is now evaluating the hiring department. Whether or not the hiring process goes smoothly will be an important factor in the future price of OS stock.

#### Achievements: still in process

The first important question is whether the company can actually post profits of 2 billion yen and 200 million yen in the fourth quarter alone of FY02/2024. If they can do this, it would seem to increase confidence in their future growth. The results will be very interesting to watch as we will not know for sure until around April 2024.

#### Confidence

Maintenance Status: 10%

# expected in the future

High social contribution but financial stabilization

Financial stability: very unstable but could improve rapidly

The company has been in the red for seven consecutive fiscal years through the fiscal year ending February 28, 2023, and is in the red again this fiscal year through the cumulative 3Q. The company also posted an operating loss, ordinary loss, and net loss attributable to owners of the parent in the previous fiscal year, and negative cash flow from operating activities in the current 3Q cumulative period, as well as significant events regarding the premise of a going concern. The Company recorded a loss for the period. It is disclosed that there are events or conditions that may cause significant doubts about the company's ability to continue as a going concern. The company's financial stability is expected to improve from here, and the results for the fourth quarter of FY02/2024 and the company's forecast for FY02/2025 will be important touchstones to dispel these doubts. If the company can actually return to profitability in the current fiscal year as planned, its credibility will be instantly enhanced, and sales growth and earnings stability could be significantly improved.

#### Social Contribution: Contribute to the development of Japanese society based on AI

As for the social contribution, the contribution to social relations in general and to the natural environment in particular can be mentioned. In all respects, AI-based fine-tuned energy control technology will be very useful in considering the detailed utilization of management resources, less management resources, less CO2 emissions, etc. In particular, edge computing is a useful tool in analyzing the latest climate change and the latest market environment, and in considering measures to save management resources. In particular, edge computing is a useful tool for analyzing the latest climate change and market environment, and for considering measures to reduce management resources. Various AI-based simulations are expected to advance climate change risk and the development of more resource-efficient products. QS's solution will be a powerful tool to support such trends. In addition, AI-based generated content is expected to contribute to the formation of a more integrated society by stimulating various forms of communication and promoting human connections. Recently, society is becoming increasingly fragmented, and we look forward to QS's development of technology that can overcome such fragmentation. However, since QS has not yet achieved any results, we would like to keep our evaluation strictly at a low 10%.

Maintenance Status: 10%

## 4. Growth: The story of Growth

## Values and Worldview

AI Development in Japan Promotion of

Progress:50%

Innovations in response to social change Maintenance progress: 30%

Progress in reflecting the results in the Progress: 10%

## **Value Perspective**

## Conceptual Design: Promoting the Practical Application of AT

QS has announced a new business plan centered around AI, aligning with their commitment to promote practical AI applications starting from May 2023. They aim to contribute to the growth and revitalization of Japanese companies and society through their global AI technology and network. The plan emphasizes the development of AI-related hardware and software, particularly in AI deep learning, AI inference, and AI applications, with substantial investments already made in AI computing capacity. Chinese investors who share this vision have provided funding through subscription rights, enabling the company to focus on both hardware and various AI application development. A diverse management team and professional managers within the global AI field collaborate to execute this strategy. QS is confident that AI will transform the operating system and plans to offer an extensive library of AI tools to Japanese customers through its Artificial Intelligence Generated Content (AIGC) business development.

## Implement hardware, software, content, and solutions

QS has three major businesses in the field of AI: The first is the provision of hardware for AI deep learning. The second is the provision of hardware for AI inference. In the AI software area, QS is dedicated to the development and implementation of a wide variety of AI applications.

### Achievements: Establish a sales structure

For GPU servers, QS has formed a distribution partnership with KAYTUS SINGAPORE PTE. LTD. to obtain non-exclusive distribution rights for KAYTUS products in the Japanese market starting mid-September 2023; for ARM servers, QS has formed a new joint venture with Compass Cloud Technology Pte. a new joint venture with Compass Cloud AI Japan K.K. Trial and error since 1999 is bearing fruit, with a subscription model for individual users specializing in AI and a sale model in which ownership of AI avatars is transferred to clients being considered. Much information has been disclosed in a short period of time, and the company seems to be progressing smoothly from trial and error to execution and building results.

## Value provided

## Servers for AI development

### Surge in demand and supply shortage

## Aiming to realize stable supply

## Value provided

#### Sales of GPU servers for AI development

#### **Servers with NVIDIA GPUs**

Processing and utilizing large amounts of data at high speed is critical for AI development, and GPUs (Graphics Processing Units) complement and accelerate CPUs (Central Processing Units), enabling them to process large amounts of data at higher speeds through parallel processing. parallel processing. Therefore, servers with high-performance GPUs can achieve higher performance on a smaller scale and operate at a lower cost.

#### **Background of business startup**

The current explosion in the development of so-called generative AI using LLMs is rapidly expanding the market size of GPUs in use; according to REPORTSINSIGHTS CONSULTING PVT LTD, the overall GPU market was worth \$44.7 billion in 2022 and is expected to reach \$450.9 billion by 2030 and is expected to reach \$450.9 billion by 2030. Technology companies around the world are currently competing for computing power to develop AI and speed up projects, and according to VentureBeat, most of them are using NVIDIA H100 Tensor Core GPUs (H100) and NVIDIA A100 Tensor Core GPUs (A100). In fact, data shows that Nvidia's data center business grew 171% YoY. Thus, global demand for GPUs far exceeds supply, putting significant upward pressure on GPU prices, and NVIDIA GPU chips, which have nearly 80% market share in GPU-based LLM-enabled generative AI, remain in short supply.

#### Strategic distribution agreement with KAYTUS

Amid tight supply in the GPU market, QS aims to ensure stable supply by signing a strategic distribution agreement with KAYTUS SINGAPORE PTE. KAYTUS is a leading provider of IT infrastructure products and solutions and one of the world's top server manufacturers, offering a wide range of infrastructure products for AI, cloud, and edge computing. The agreement will ensure that QS can meet the high demand for GPU servers in Japan. QS will also establish itself as a reliable supplier of GPU servers and will be able to provide superior products and services to clients in AI-related industries.

## Achievements secured

#### **Sales results for October 2023**

QS announced on October 13, 2023, that it has signed a sales agreement for NVIDIA GPU servers with a leading Indonesian provider of global net services. Although the selling company did not reveal its name, it is widely known for its comprehensive AI products, including AI chips and deep learning frameworks, in addition to core AI capabilities such as natural language processing, knowledge graph, speech recognition, computer vision, and augmented reality KAYTUS The sales contract was concluded for 2 billion yen, including after-sales service, for GPU products purchased from KAYTUS, Inc. for a total purchase price of 1.35 billion yen. This is a significant milestone in a new business, solidifying QS's position as a leading supplier of NVIDIAGPU servers and furthering its commitment to providing high-performance solutions to leading companies in the global IT industry.

# Additional Achievements. Secured

#### Sales in November 2023

QS announced that in November 2023, it has signed a sales agreement with a company located in Japan that handles data center IT equipment and other products. Under the terms of the agreement, QS will assemble NVIDIA GPUs and other equipment provided by KAYTUS into server machines in Japan, deliver them to the client company in Japan, and sell them to the company in Singapore, which will serve as the end user. QS's transaction volume under the sales contract is approximately 450 million yen, and the net effect on the company's business performance is approximately 34 million yen in sales.

#### Same as above

#### Sales results for January 2024

QS announced in January 2024 that it has entered into an agreement with MEGA Limited, a leading global provider of online storage services in New Zealand. The distribution agreement stipulates that QS will deliver the products to Pumpkin Heads Corporation, rather than to MEGA Limited in New Zealand, as MEGA Limited has run out of GPU servers worldwide, and the fastest way to obtain large quantities of GPU servers is to deliver them to Pumpkin Heads through QS. This is because MEGA Limited has run out of GPU servers worldwide, and the company has decided that the best way to obtain a large number of GPU servers in the fastest possible time is to obtain them in Japan from KAYTUS through the route of having them delivered to Pumpkin Heads via QS. The amount handled by QS under the sales contract is 450 million yen, and at this point, the accounting treatment has not yet been discussed with the accounting auditor, so the amount of impact on business performance has not been determined.

## Complementary GPU server

### ARM-based CPU server

GPUs are essential for AI computing, but there are limitations to relying solely on GPUs. These include memory limitations, suboptimal performance in system-level operation and management, low computing power for common tasks, and cost concerns. Therefore, QS recognizes the importance of CPUs in AI development, and Quantum Solutions has strategically incorporated these CPU servers into QS's AI hardware business plan The CPU product line is not a typical Intel X86 processor, but rather a power efficient, scalable, on-demand It will be based on the ARM (Advanced RISC Machine) architecture, which offers advantages such as power efficiency, scalability, on-demand customization, enhanced performance, flexible architecture, and low cost.

## Establishment of joint venture

#### Compass Cloud AI Japan established

To simplify sales of ARM-based CPU servers in Japan, a new joint venture, Compass Cloud AI Japan K.K., has been formed with Singapore-based Compass Cloud Technology Pte. This joint venture, Compass Cloud AI Japan, will enable the company to offer customers a comprehensive hardware package that includes edge computing solutions and cloud storage services. (disclosed July 3, 2023)

#### Development and commercialization of AI-equipped solutions

Strengthening sales based in Singapore

To simplify sales of ARM-based CPU servers in Japan, a new joint venture, Compass Cloud AI Japan K.K., has been formed with Singapore-based Compass Cloud Technology Pte. This joint venture, Compass Cloud AI Japan, will enable the company to offer customers a comprehensive hardware package that includes edge computing solutions and cloud storage services.

# Research and development with partners

### Other AI business developments

In addition, QS is currently in discussions with a prominent Japanese partner to negotiate the rights to use its intellectual property (IP) in digital avatar products. By incorporating images of Japanese celebrities, QS aims to increase the appeal and familiarity of digital avatars to users. qs believes that this partnership will increase the adoption rate of digital avatars. given the growing popularity and awareness of AI tools, qs believes that the predicts the rise of freelance platforms. This platform will act as a link between the needs of clients and the supply of talented individuals with hands-on experience with AI tools. This will allow users to access the expertise, creativity, and problem-solving abilities of freelancers.

#### Researching further possibilities of AI

## Value provided by QS's AI business

QS sees great potential for freelance platforms to meet a variety of demands and explore the potential of AI. through its AI business plan, QS aims to meet the needs of customers in all industries, facilitate future advances, and maximize the potential of AI. They offer a comprehensive range of cutting-edge technologies from hardware to software and seek avenues to provide breakthrough solutions to critical societal problems through user-friendly tools.

#### Success Factors for New GPU Server Business

### Two factors in QS's early success

It is a remarkable fact that only two months after announcing a new business venture offering servers equipped with NVIDIA's high-performance GPUs, the company signed a contract for sales as high as approximately 1.8 billion yen. This should be evaluated honestly. There are two factors that contributed to the achievement of high sales in just two months. These factors may have justified the sharp rise in the stock price. The first factor is the "serious supply-demand crunch," and the second factor is "QS's human resource capability to make proposals to companies involved in cutting-edge AI technologies.

#### Rapid Procurement Strategy

#### Factor 1: Severe supply-demand crunch

The first factor is the increasing demand for NVIDIA's high-performance GPU servers. In particular, the use of generative AI, especially ChatGPT, is growing rapidly, which has led to a surge in demand for NVIDIA's high-performance GPU servers. This increased demand has resulted in delivery times of up to 30 months for NVIDIA's high-performance GPU servers. QS has signed a distributor agreement with KAYTUS SINGAPORE PTE. LTD to procure NVIDIA's high-performance GPU servers (disclosed on September 4, 2023). KAYTUS SINGAPORE PTE. LTD appears to have an extensive inventory of NVIDIA's high-performance GPU servers due to its unique business relationship.

## <u>Factor 2: QS's human resource capabilities to deal with AI</u> cutting-edge related companies.

Strong human resources Network

In order to achieve four contracts with total sales of approximately 1.8 billion yen in a short period of time, with AI advanced related companies in just two months, QS personnel must have a strong human resource network, excellent proposal skills, and human reliability. The presence of human resources with these capabilities is evidenced by such achievements.

QS's position in the AI business industry

Making AI an accessible tool

The Core of Intelligence and Competence

High-speed processing is the key

Feedback close to the human body

### QS to get AI's "brain, eyes, and body"

Keys to the Age of General Purpose Artificial Intelligence (AGI)

#### QS's strategy is to get AI's "brain, eyes, and body"

QS's strategy can be seen as a strategy to get the "brain, eyes, and body" of AI, the key to the era of general-purpose artificial intelligence (AGI). If the strategy is realized, it will secure a very strong competitive advantage position in the AI business domain.

#### The Brain of AI: NVIDIA's High-Performance GPU Servers

NVIDIA's high-performance GPU servers can be viewed as the human "brain" that processes large amounts of information and solves complex problems. This "brain" is responsible for analyzing vast amounts of data from the environment, learning, reasoning, organizing, and systematizing to deepen knowledge and make valuable and useful decisions. Exactly as the human brain is the center of logical thinking and creative thinking, this GPU server is the core of AI's intelligence and capabilities.

#### **Eye of AI: Arm Architecture**

The Arm architecture, on the other hand, functions as the "eye" that collects and processes information input to the "brain. The eyes observe the world around them, capturing light and color, motion and shape, and transmitting this information to the brain. Similarly, the Arm architecture efficiently collects and processes data on edge devices and sends it to a high-performance GPU server. This allows the AI system to accurately recognize its surroundings and react appropriately.

## AI body: Integration of AI technology with avatar and game technology

Furthermore, the integration of AI technology with avatar and game technology functions as a "body," enabling the AI to perform physical actions and virtual expressions. This "body" translates the AI's judgments and senses into real-world actions and interacts with the virtual environment in a human-like manner. When applied to a robot, this "body" can take physical form, move objects, and perform specific tasks. For this purpose, in addition to a brain, it needs eyes and a body. Information is transmitted to the brain through the five senses of the eyes and body, where it learns and creates inference logic on its own. The created inferences are executed by the "body," and the results are fed back to the "eyes" and "body" through the five senses. QS has been commercializing all the key parts of this AGI learning and inference process.

QS's position in Gaming

QS and JP GAMES Forge Alliance to Revolutionize Gaming with AI

Hajime Tabata's
JP GAMES:
Pioneering the
Future of Gaming
with 'Gemina
Games

QS Set to Acquire
2.5% Stake in JP
GAMES,
Cementing
Strategic
Partnership

QS and JP GAMES
Alliance:
Pioneering NextGen Gaming
Technologies for
Global Impact

Advancing Gaming
Innovation: JP
GAMES and
Web3.0
Integration Usher

### Elevating Gaming Innovation through AI Tech

#### **Strategic Partnership Announcement**

#### <u>Introduction</u>

In a significant move on December 15, 2023, QS proudly announced its partnership with JP GAMES Corporation, a pivotal collaboration set to reshape the gaming landscape. With formal approval anticipated on December 22, 2023, at JP GAMES, this partnership aims to harness AI technology by blending QS's technical expertise with JP GAMES' creative prowess, thereby delivering groundbreaking games to the market.

#### About JP GAMES: A Hub of Creativity and Technology

Under the visionary leadership of Hajime Tabata, the producer of Final Fantasy XV, JP GAMES has carved its niche in the gaming industry. The company is renowned for its role in developing the official game for the Tokyo Paralympics and pioneering the Web3.0 RPG "Gemina Games," demonstrating a blend of creativity and technological advancement.

#### **Capital Alliance Details: A Strategic Investment**

In a strategic move, QS plans to acquire 110 ordinary shares of JP GAMES, representing 2.5% of the issued shares, with a total investment of 122,500,000 yen from our capital. This investment, to be concluded by December 31, 2024, underscores our belief in the potential of this partnership. Furthermore, JP GAMES has agreed to negotiate future acquisitions with major shareholders, indicating a deep commitment to our collaboration.

#### The Strategic Significance of Our Partnership

The fusion of QS's expertise in AI technology and edge computing with JP GAMES' innovative prowess is set to introduce cutting-edge technologies in the gaming industry. This partnership not only promises to construct new business models but also to redefine gaming experiences for users worldwide.

#### Strengths and Innovations of JP GAMES

Led by Hajime Tabata, JP GAMES excels in innovative game design and the development of new games leveraging Web3.0 technology. This strategic collaboration with our AI technology expertise is expected to significantly enhance our competitive stance in the market, setting new benchmarks for innovation.

Exploring the
Future of Gaming:
AI, Digital Twins,
and Cloud
Innovations

#### **Potential Risks and Challenges**

The success of this partnership hinges on the effective technological and cultural integration between our two companies. The return on investment and market acceptance of the innovations we introduce are variables that we are keenly aware of and prepared to navigate.

Unlocking New Horizons in Gaming with AI and Cloud-Based Innovations

#### **Future Prospects: A Vision for Growth**

The integration of AI technology with game development opens vast opportunities for growth, especially if our innovative entertainment forms gain market acceptance. We are particularly excited about the potential advancements in digital twin technology and cloud gaming, which promise to enhance user experiences and unveil new business avenues.

Forging the Future of Interactive Gaming: The QS and JP GAMES Alliance on Project SHALLAH

#### **Conclusion: A Forward-Looking Collaboration**

This partnership between QS and JP GAMES signifies a strategic leap towards creating an innovative gaming experience with Project SHALLAH. Leveraging both companies' strengths, we are committed to the successful realization of this project, anticipating its significant impact on the global gaming market. We look forward to a fruitful partnership with JP GAMES, embarking on a journey filled with promising opportunities for the gaming industry through Project SHALLAH.

## Long-term outlook for sales

**Enough demand** 

### Sales Forecast Assumptions

#### Can the growth exceed market expectations?

According to data provided by QS based on Statista, a statistical provisioning service, the CAGR of the Japanese AI market from 2023 to 2027 is 18.1%, the CAGR of Japanese edge computing from 2021 to 2027 is 30.9%, and the CAGR of Japanese cloud gaming from 2023 to 2027 CAGR is 45%, so QS's competitive advantage over market growth is a condition for achieving market capitalization as explained in the Investment Summary. This would be feasible if the business integrating hardware, software, content, and solutions can be achieved successfully.

#### Size of the AI market in Japan

Capitalizing on the boom in business use of AI

Valued at approximately US\$970 million in 2023, the Japanese AI market is projected to exceed US\$3.09 billion by 2030. This growth is supported by a high compound annual growth rate of 18.1% and is driven by the proliferation of large amounts of data, advances in machine learning algorithms, and increased computing power. The use of AI for customer service, particularly chatbots and virtual assistants, is a growing area of focus, as is the development of AI chips. With these developments, AI is expected to become increasingly integrated into daily life and business operations, and the market is expected to grow.

#### 5.1x growth

#### Size of the Japanese edge computing market

In 2021, Japan's edge computing (including cloud storage) market was valued at US\$274 million and is expected to reach US\$1.4 billion by 2027, representing a compound annual growth rate of 30.9% between 2021 and 2027. During COVID-19, the edge computing market showed remarkable growth, driven by a surge in demand for industrial automation. Increasing demand for edge computing and local storage is a key driver of market growth, contributing to reduced risk of data leakage and retaining organizational control of data.

### 4.7x growth

#### Size of the cloud gaming market in Japan

In 2023, the Japanese cloud gaming market was valued at approximately US\$327 million and is expected to reach US\$1.4 billion by 2027. This market is expanding at a compound annual growth rate of 45%, driven by the proliferation of high-speed Internet connections, advances in cloud infrastructure, and increasing demand for on-demand gaming experiences. Investments in cloud gaming services by major gaming and technology companies are driving innovation and competition in the market. With accessibility and flexibility via smartphones, improved infrastructure, and the emergence of 5G networks, the cloud gaming market is embracing opportunities for growth and innovation, transforming the way video games are experienced.

# 5. Connection: The story of the connection of management resources

Strategies

Potential of AI

Historical connections cannot be ignored

The unique perspective of a global management team

Characteristics of strategies from the global AI business industry

Bridging Japan and the world's advanced AI technologies through a global human resources network

By commercializing AI "brain, eye, and body" products and services and building a global network linking them, QS seeks to promote the integration, evolution, and diffusion of the world's most advanced AI technologies in Japanese companies and open up various future possibilities.

Leveraging Japan's geopolitical position during the U.S.-China Cold War

Japan enjoys a unique geopolitical advantage in the Cold War era between the U.S. and China. This is due to Japan's geographic location as the economic and political center of the Asia-Pacific region, its advanced technology and manufacturing capabilities, and its strong economic relations. Japan's geopolitical role in this era is best exploited through a hybrid management team of diverse national cultures, including Japanese, Chinese, and Anglo-Saxon. A hybrid management team is a group of leaders with different cultural backgrounds and expertise who come together to develop and implement strategies from multiple perspectives. Such a management team will be an important element in leveraging Japan's geopolitical advantage in the uncertain and dynamic international environment of the U.S.-China Cold War era.

#### Hybrid management leadership at QS

QS has demonstrated its ability to build AI-related businesses at an astonishing speed and has achieved results. This speed would be difficult to achieve with an exclusively Japanese management team. Japan plays an important role as an important member of the Western camp, backed by its strong security relationship with the United States. At the same time, it is geographically close to China and has strong historical and economic ties with China. This position requires Japan to maintain a unique economic and diplomatic balance, and requires a management team with diverse perspectives to manage complex international relations. A hybrid management team is well suited to meet these needs.

#### **Cultural bridges**

#### How to leverage Japan's geopolitical advantage

Hybrid management teams can take advantage of Japan's geopolitical advantages in the following ways

1. Diversified Diplomatic Strategy:.

Developing economic and cultural ties with China and other Asian countries while maintaining a strong alliance with the U.S. Develop flexible business strategies to reduce international tensions and pursue economic interests.

2. technological and economic innovation:.

Leverage advanced technology and manufacturing capabilities to enhance competitiveness in international markets. Expand into emerging markets and diversify geopolitical risks.

3. cultural and knowledge bridging.

Management teams from different cultural backgrounds will foster international understanding and cooperation. Combine global perspectives with local expertise to develop more effective international strategies.

4. Crisis Management: To

Respond quickly and effectively to the various crises that arise in a dynamic international environment. 5. manage short-term challenges while taking a long-term perspective.

In this way, the hybrid management team will provide a balanced approach to diplomacy, economics, culture, and crisis management in order to maximize Japan's geopolitical advantages. Throughout the challenging period of the U.S.-China Cold War, this management style will play an important role in Japan's ability to maintain its international influence and pursue economic prosperity.

Key to business model promotion

The Japanese workforce, the key to our services

Global talent procurement Proactive in

Become an attractive company and you will have no trouble recruiting.

## Securing sales and software personnel is key

Power of people is the driving force behind Japan Localization

## New business plan to promote practical application of AI in Japan

For QS to become a bridge for cutting-edge AI technologies in Japan and around the world, it is essential to build a Japan-focused sales force and hire Japanese software engineers to customize NVIDIA-related and Arm-related products in a practical manner. While rapid decision-making by management is important, the presence of talented Japanese people as an execution unit is essential, and their rapid recruitment is vital to the realization of the company's long-term vision.

## <u>Management team with a deep understanding of human</u> resource issues

According to company interviews, hybrid management deeply understands this point and is currently aggressively hiring Japanese salespeople and software engineers. In fact, they have hired HR personnel who can handle multiple languages and are stepping up their recruiting efforts.

#### AI-related sales and software personnel are relatively fluid

The Japanese labor market is generally less fluid than the rest of the world when it comes to changing jobs, but many semiconductor-related salespeople and software engineers work for foreign-affiliated firms and are considered to be relatively liquid. There is a good possibility that such Japanese will find the growth potential of QS attractive, and thus will be more likely to hire.

For example, the video "Quantum Solutions' Vision for the Future" released on December 28, 2023, will be helpful in discussing recruitment trends.

# 6. Confidence: The story of confidence and sustainability story

Financial sustainability

At this stage, doubts about the premise of a going concern cannot be cleared

## Financial sustainability

Deficit for the past 7 fiscal years

QS Inc. has faced notable challenges with respect to financial sustainability in recent economic conditions. The company's losses for the past seven consecutive quarters suggest a shaky corporate foundation, and the cumulative results for the third quarter of FY02/2024 have seriously affected the company's financial health in the form of an operating loss, an ordinary loss, and a net loss attributable to owners of the parent company. Negative cash flow from operating activities is a going concern in the notes to the QS's report for the third quarter ended February 28, 2024. the QS's results for the fourth quarter ended February 28, 2024 and the company's projections for the fiscal year ending February 28, 2025 are important indicators to clear up this doubt, the QS's management team Based on interviews with QS's management and discussions with its accountants, QS appears to believe that it will be out of a situation in 2024 that would warrant a going concern statement in the notes.

## On the other hand, there is potential for rapid improvement

The outlook for the fiscal year ending February 2025 is crucial On the other hand, there is a good possibility that the company's financial strength will rapidly recover. AI-related businesses are highly profitable and do not require much capital investment in many cases, so once growth proceeds smoothly, cash flow may improve rapidly and financial strength may also improve rapidly. In the fourth quarter alone. If this is realized, the company's earnings outlook will be adequate. The future improvement in financial stability can be predicted from the perspective of what plans will be made for the fiscal year ending February 28, 2025. In this sense, as we have said many times before, the outlook for FY02/25 is extremely important.

Contribution to social sustainability

## Great potential in social contribution

#### Positive impact on society and the natural environment

On the other hand, in terms of contributions to social sustainability, QS has great potential in environmental and social contributions using AI technology: AI-based energy control technology and edge computing have a positive impact on society and the natural environment, contributing to more efficient use of resources and reduced CO2 emissions. emissions. AI-based content is also expected to contribute to overcoming social fragmentation by stimulating communication among people and promoting social integration.

Therefore, QS Inc. has a responsibility to ensure financial sustainability and, at the same time, to pursue sustainable development in a broader sense through social and environmental contributions. Restoring financial stability and proactively contributing to society and the environment are important pillars of a company's reputation, earning the trust of customers and investors, and supporting the company's long-term success. QS will be able to address these challenges and build a sustainable future not only for its own benefit, but also for the broader society.

### **Risk analysis**

## Risk analysis

#### Market supply and demand balance

The current tight supply and demand for NVIDIA products means that the speed of QS deliveries is a source of competitive advantage, but if for some reason supply increases, there is a risk that QS's advantage will disappear.

#### **Future performance forecast**

According to the December 18, 2023 issue of the Quarterly Report, New Year 2024, QS's future sales are expected to decline. This could raise concerns about the company's profitability and growth potential.

#### Stock price volatility

Although QS presents a long-term outlook, there is a great deal of uncertainty regarding its feasibility. Reflecting the impact of this uncertainty, the share price of QS has fluctuated widely up and down, especially since the release date of the quarterly report. This represents a high risk for investors.

#### Risk of dilution

If the business is sufficiently launched as planned, high earnings will allow the company to invest in high growth with internal cash flow. Therefore, if business development proceeds smoothly, the risk of dilution from equity financings will be low. However, the possibility cannot be completely ruled out that the company's stock could be diluted by the unexpected issuance of additional stock acquisition rights. Dilution could reduce shareholder value.

#### **Effectiveness of hybrid management teams**

Market questions remain about the effectiveness of hybrid management teams with different cultural backgrounds. While diverse perspectives are beneficial, they carry risks, such as inconsistent management policies and increased complexity in the decision-making process.

#### Recruitment challenges

The low liquidity of the Japanese labor market is a risk. In particular, the difficulty of acquiring human resources may affect business development, as securing Japanese salespeople and software engineers is critical to long-term success.

# 7. Summary of Financial Results for the 3Q of the FY February, 2024

Profit and Loss Statement

**Engaged in Post- COVID Recovery** 

Segment loss is recovering

### **Profit and Loss Summary**

Concept Design: Advancing the Practical Application of AI

#### Closing of accounts for the period under review

QS has begun preparations for AI-related business expansion in the system solution business as part of its current fiscal year's business activities. Additionally, it is focusing on performance recovery in the post-COVID era in the eyelash care business. As a result, for the cumulative period of the third quarter of this fiscal year, the company reported sales of 161 million yen (compared to 186 million yen in the same period last year), an operating loss of 398 million yen (compared to an operating loss of 295 million yen in the same period last year), an ordinary loss of 268 million yen (compared to a recognized loss of 114 million yen in the same period last year), and a quarterly net loss attributable to the parent company's shareholders of 266 million yen (compared to a quarterly net loss attributable to the parent company's shareholders of 925 million yen in the same period last year)

#### **System Solution Business**

In its system solutions business, QS is developing a business that combines 5G technology with AI technology and will establish a joint venture with Compass Cloud Technology in July 2023 called Compass Cloud AI Japan K.K., which will use ARM-based edge services hardware to QS has announced plans to develop AI, edge computing, cloud storage, cloud gaming, and digital twin businesses in Japan. QS also plans to raise funds by issuing stock acquisition rights to advance its AI-generated content business, and to focus on developing generative AI using large-scale language models, it signed a distributorship agreement with KAYTUS SINGAPORE and plans to start selling GPU servers for AI development. However, Q3 results were not yet available, with sales of 26 million yen (-5.1% YoY) and segment loss of 100 million yen (138 million yen loss in Q3 FY02/23).

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Stores are performing well, and losses have improved"

#### **Eyelash Care Business**

Management has been actively restructuring and reinforcing this business and closed 3+ shops this Fiscal Year which has naturally led to a decline in sales but also shrinks the operating loss. As a result in the remaining shops, reservations are secured up to two months in advance, and the three currently operating stores have seen a 120% increase in sales compared to the previous year. Particularly, the Yurakucho Marui store has shown significant growth with a 150% increase compared to the previous year. However, due to the closure of three stores in the previous period, the total sales of the salon business remain at an 86% increase compared to the previous year. In product sales through our own website, unfavorable results were reported, with an 81% decrease compared to the previous year due to decreased sales per customer and competition from low-cost products. As a result, total sales amounted to 135 million yen, representing a 15.1% decrease compared to the same period last year. The segment

## Fi

#### **Financial condition**

#### <u>Assets</u>

Total assets have increased

Current assets increased by 737 million yen compared to the end of the previous consolidated fiscal year, reaching 1,179 million yen. This increase was primarily due to a 455 million yen increase in cash and deposits, a 421 million yen increase in merchandise and products, and a decrease of 111 million yen in accounts receivable. Fixed assets increased by 13 million yen compared to the end of the previous consolidated fiscal year, totaling 39 million yen. This increase was mainly attributed to a 10 million yen increase in deposits held in trust and similar accounts. As a result, total assets increased by 750 million yen compared to the end of the previous consolidated fiscal year, reaching 1,219 million yen.

## obt also

Total debt also increased

#### <u>Debt</u>

Compared to the end of the previous consolidated fiscal year, current liabilities rose by 450 million yen, totaling 522 million yen, mainly due to a 395 million yen increase in accounts payable. Fixed liabilities increased by 6 million yen, reaching a total of 6 million yen. Consequently, total liabilities increased by 457 million yen compared to the previous year's end, reaching 529 million yen.

#### **Net assets**

Net assets also increased

The total net assets increased by 293 million yen compared to the end of the previous consolidated fiscal year, reaching 690 million yen. This increase was mainly due to capital stock and capital surplus each increasing by 314 million yen, retained earnings increasing by 265 million yen, and foreign currency translation adjustment decreasing by 126 million yen.

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## Appendix 1: Overview of AI-related comparable companies

code	Company Name	Company Overview	Forecast Financial Results	Company Plan Sales (Millions of yen)	Net Income	Current interest rate	Market capitalization (Millions of yen)	PSR times	PER times
5591	AVILEN, Inc.	Provides software development and DX using AI technology and AI implementation training services. Services are divided into AI software unit and build-up unit.	2023.12	968	147	15.2%	14,859	15.35	101
5132	pluszero, Inc.	Provides, develops, maintains, and operates solutions utilizing AI and natural language processing technologies, and focuses on research into Artificial Elastic Intelligence (AEI).	2024.1	894	121	13.5%	15,405	17.23	128
5574	ABEJA, Inc.	ABEJA develops digital platform business through AI system development to support DX of client companies, providing ABEJA Platform and customized systems.	2024.08	3,470	388	11.2%	32,661	9.41	84
5586	Laboro.AI Inc.	Provides tailor-made artificial intelligence development and consulting services to meet corporate challenges.	2024.09	1,644	143	8.7%	12,464	7.58	87
4180	Appier Inc.	Provides software that uses AI to analyze website users of client companies to improve the effectiveness of attracting customers.	2023.12	26,195	771	2.9%	183,082	6.99	237
4493	Cyber Security Cloud , Inc.	Cyber security business including "Attack Blocker" and "WafCharm", cloud-based WAFs developed by the company.	2023.12	3,025	371	12.3%	24,005	7.94	65
4488	AI inside Inc.	Development of handwriting recognition AI by deep learning, and provision of AI-OCR service "DX Suite".	2024.03	4,500	287	6.4%	29,599	6.58	103
6031	Scigineer Inc.	Provides support business for marketing activities by utilizing AI and big data analysis technology.	2024.06	1,800	270	15.0%	10,237	5.69	38
3798	ULS Group, Inc.	Develops consulting business for digital transformation targeting the manufacturing, information communication and service, public, and financial industries.	2024.03	10,050	1,234	12.3%	24,230	2.41	20
6182	MetaReal Corp.	Provides automated translation tools and human translation services in specialized industrial and business fields, and is also involved in the Metaverse business.	2024.02	4,307	450	10.4%	13,611	3.16	30
5256	Fusic CO., LTD.	Develops DX business using AWS to support customers' system development and business model transformation.	2024.06	1,817	131	7.2%	4,989	2.75	38
5885	GDEP ADVANCE,Inc.	Develops DX services that provide server equipment and software equipped with high- performance GPUs, as well as operational support.	2024.05	4,200	399	9.5%	11,173	2.66	28
6526	Socionext Inc.	A fabless semiconductor vendor that develops and provides custom SoCs.	2024.03	214,000	22,500	10.5%	587,014	2.74	26
3655	BrainPad Inc.	Provides big data utilization services and digital marketing services, making full use of data analysis technology and system development.	2024.06	11,000	750	6.8%	26,850	2.44	36
4414	FLECT Co.,Ltd.	As a multi-cloud integrator, supports corporate DX by utilizing multiple cloud services with a focus on Salesforce.	2024.03	6,395	385	6.0%	13,675	2.14	36
5039	Kitalive Inc.	Provides cloud solutions and license sales through system development based on Salesforce.	2023.12	906	132	14.6%	1,674	1.85	13
4476	AI CROSS Inc.	Provides SMS delivery service from companies to individuals and data analysis using AI. Its main products are SMS delivery platform and Rich Communication Services delivery platform.	2023.12	3,153	145	4.6%	5,002	1.59	34
7046	TDSE Inc.	Provides data management consulting services and AI products utilizing big data and AI.	2024.03	2,589	195	7.5%	4,459	1.72	23
4069	BlueMeme Inc.	Provides contract system development and software sales combining agile methodology and low-code technology, utilizing its own development methodology, AGILE-DX.	2024.03	2,650	230	8.7%	4,468	1.69	19
4270	BeeX Inc.	Specializes in digital transformation and multi- cloud domain by providing cloud migration services and maintenance and operation services for ERP by SAP.	2024.02	7,680	404	5.3%	8,387	1.09	21
4198	TENDA Co.,Ltd.	Provides web systems and applications, plans, develops, and sells business products, and plans, develops, maintains, and operates game content.	2024.05	5,100	330	6.5%	4,936	0.97	15
6599	EBRAINS, Inc.	Designing and manufacturing embedded computers and peripherals for social and industrial infrastructure, and expanding into IoT and artificial intelligence projects.	2024.03	4,310	431	10.0%	3,680	0.85	9
2488	JTP Co.,Ltd.	Supporting foreign companies to enter the Japanese market and developing businesses in digital innovation, ICT, and life sciences.	2024.03	7,737	347	4.5%	5,649	0.73	16
3625	Techfirm Holdings Inc.	Develops ICT solutions business that provides contracted development of business and mission-critical systems, and agricultural and marine products export solutions business.	2024.06	6,000	110	1.8%	3,397	0.57	31
3131	SHINDEN HIGHTEX CORPORATION	An independent trading company that purchases and sells LCD modules, semiconductors, and power equipment.	2024.03	44,500	380	0.9%	6,109	0.14	16

 $[Source] \ \ \mathsf{JPR}. \ \ \mathsf{All} \ \ \mathsf{data} \ \ \mathsf{compiled} \ \ \mathsf{from} \ \ \mathsf{data} \ \ \mathsf{available} \ \ \mathsf{on} \ \ \mathsf{FactSet} \ \ \mathsf{as} \ \ \mathsf{of} \ \ \mathsf{January} \ \ \mathsf{19}, \ \mathsf{2024}$ 

## **Appendix 2: Analysis of NVIDIA**

#### Growth

Leading the World in Artificial Intelligence ComputingProgres s of Infrastructure Development:90%

The history of AI development cannot be discussed without mentioning NVIDIA.

Not only contributing to business but also having a strong interest in science.

## Worldview & Values

Conceptual Design: "I AM AI" Project

#### **Addressing Global Challenges**

NVIDIA, as a pioneer in accelerated computing, is tackling challenges that no one else can solve. Founded in 1993 with the vision of bringing 3D graphics to the gaming and multimedia markets, NVIDIA invented the GPU (Graphics Processing Unit) in 1999, establishing itself as an influential company that laid the groundwork for a new era in computing. In 2022, NVIDIA is poised to play a foundational role in building the metaverse, the next stage of the internet, through the development of its NVIDIA Omniverse™ platform.

#### **The Champion of Semiconductors**

NVIDIA currently dominates the artificial intelligence chip market and is also involved in the development of autonomous driving systems, making it the "Champion of Semiconductors." CUDA, developed by NVIDIA in 2006, is essential for complex programming on GPUs, supporting both the hardware and software necessary for AI development that cannot be processed without CUDA, including the construction and optimization of complex algorithms. On May 30, 2023, NVIDIA's market capitalization exceeded \$1 trillion. Previously, only Apple, Microsoft, Amazon, Alphabet, Saudi Aramco, Tesla, and Meta have reached this milestone, marking NVIDIA's entry among the world's top companies.

#### **Accelerating Science**

Researchers across various fields are utilizing NVIDIA technology to solve new challenges. In 2022, Stanford University set a world record in human genome DNA sequencing. The research team dramatically shortened every step of the process, from collecting blood samples to sequencing the entire genome and identifying variants that cause diseases, discovering pathogenic variants and confirming diagnoses in just 5 hours and 2 minutes. This process, which traditionally takes two weeks using genetic panel testing, saw a significant acceleration thanks to NVIDIA's genomics computation application framework.

#### Value Provided: Industrial metaverse application examples

#### **BMW**

Factory replicated directly in the metaverse

**Request for GPU** 

**Supply from Prime** 

**Minister Kishida** 

At BMW, digital twins (digital replicas) are created for each process in the value chain to conduct simulations for efficiency improvement. Given that many of BMW's manufactured vehicles are customized based on customer demands, accurately reflecting these demands on the production line is directly linked to productivity. Therefore, BMW engineers utilize the NVIDIA Omniverse to employ a digital twin of the entire factory, enabling them to quickly understand where and how to improve the production processes for each model.

#### Influence in Japan

On December 4, 2023, NVIDIA's CEO, Jensen Huang, revealed that he met with Prime Minister Fumio Kishida, who requested the provision of "as many GPUs as possible" within Japan. Huang responded that he would make every effort to supply them. According to CEO Huang, the company plans to collaborate with Japanese firms such as SoftBank, Sakura Internet, NEC, and NTT, utilizing NVIDIA's AI semiconductors. He also advocated for leveraging the strengths by combining generative AI with the expertise and experience of Japan's manufacturing industry. Regarding Japanese-language generative AI, he indicated that

as a major market.

Efforts to Permeate Values

Reflection on AchievementsProg ress Status: 90% NVIDIA's operations have numerous achievements in both academic fields and areas of social contribution, and it is now in a situation where the entire world eagerly anticipates further advancements in its technological capabilities. The permeation of values has been sufficiently achieved. To realize even higher corporate value, the focus should be on improving product performance and the efficiency of mass production.

Japan, with its Japanese databases and language models, is expected to take the lead in this area. The significant influence in Japan goes without saying, and it's clear that NVIDIA views Japan

#### Connection

A virtuous cycle of in-house development has been established.Prog ress Status: 90%

The relationship with TSMC is solid

Building relations with India

### Sales of GPU servers for AI development

#### Releasing chips at a speed 3x faster than the industry average

NVIDIA leverages its leadership in the GPU and AI sectors to expand into various fields, continually broadening its own GPU market. This expansion is enabled by its high level of technical expertise and significant investments in research and development. NVIDIA possesses a strong team of chip engineers capable of producing the world's best GPUs ahead of its competitors. This contributes significantly to the company's research and development efforts, creating a virtuous cycle for NVIDIA, a leader in both software and hardware. As a result, NVIDIA can release new chips every six months, compared to the industry average of 18 months, facilitating rapid advancements in graphics technology.

#### **Efficient outsourcing of manufacturing**

NVIDIA's strengths lie in its high level of technical expertise and foresight, as well as a division of labor model facilitated by its fabless management approach (where the company does not own factories and outsources manufacturing). In 1998, NVIDIA formed an alliance with TSMC (Taiwan Semiconductor Manufacturing Company), which would later become the world's largest dedicated independent semiconductor foundry. This partnership remains a significant strength for the company today.

#### Measures against the confrontational US-China relationship

NVIDIA has developed GPUs with varying performance levels for the Chinese market, selling large quantities of GPUs to major Chinese IT companies such as BAIdu, Tencent, Alibaba, and Byte Dance for the construction of LLMs and the creation of generative AI. The volume is immense, accounting for approximately 25% of NVIDIA's sales revenue. In October 2023, the United States further tightened export controls, making it difficult to export to China.In contrast, NVIDIA has been accelerating its collaboration with Indian companies. Reliance Industries, a giant in India, announced on September 8th that it is collaborating with NVIDIA in the development of large language models trained in India's diverse languages. Thus, while NVIDIA is a leading global company, it faces risks from international friction but is diligently securing management resources by proactively managing these challenges.

Sales of GPU servers for AI development

## The dominance of ChatGPT and the rapid increase in GPU demand

Upon its release in November 2022, the generative AI "ChatGPT" swiftly swept across the globe. Powering its intellect is the GPU manufactured by NVIDIA. The surge in generative AI sparked a demand for GPUs to the extent that Elon Musk lamented they were "harder to obtain than drugs," leading to a 90% surge in stock prices in the previous quarter. The background to gaining this advantage is as follows: Over a decade ago, both "deep learning" and "inference" processes were handled by CPUs. However, around 2012, several academic papers revealed that deep learning could be processed more efficiently and faster with GPUs, which are better at handling images quickly compared to CPUs. The stock price rocketed from \$3.22 at the close of January 3, 2012, to a peak of \$333.35 at the close of November 29, 2021, approximately a 100-fold increase.

### Market share

#### **Share of the GPU market**

The GPU market is dominated by NVIDIA.

According to a study by Mordor Intelligence Research & Advisory, the GPU market size is expected to grow at a compound annual growth rate (CAGR) of 32.70% during the forecast period (2023-2028), from USD 41.82 billion in 2023 to USD 172.08 billion by 2028. This growth is attributed to the increasing demand for GPUs across various applications, particularly due to the recent surge in demand for high-end personal computing devices and gaming consoles.

## Competitors

NVIDIA is followed by AMD and Intel.

The main players are Intel Corporation, Advanced Micro Devices, Inc., Imagination Technologies Limited, Samsung Electronics Co., Ltd., and Nvidia Corporation (in no particular order). In Amazon's GPU popularity rankings, NVIDIA's GeForce series occupies the first through third places, and beyond that, NVIDIA and AMD are almost in a duopoly situation. Within the top 10, only Intel's Arc series is ranked, coming in at 6th place.

#### Confidence

Explained as a temporary decrease in profits

# Before the increase in GPU production

## Sustainability story

#### Financial sustainability

#### Overview of the previous term's financial results 1

NVIDIA's revenue for January 2023 amounted to approximately 3.8 trillion yen, remaining flat compared to the previous term. Operating profit decreased by 57.9% from the previous term to 591.4 billion yen, and the operating profit margin declined by 21.6 points, indicating less favorable performance. The reasons are as follows: While the Computer & Networking business saw an increase in revenue and profit, the Graphics business experienced a decrease in both. Notably, the profit margin for Graphics significantly dropped. Semiconductor sales for AI to data centers increased, whereas gaming decreased by 27%. This could be due to an increase in semiconductor demand from the AI industry and a potential backlash from a special demand in the gaming market.

#### Overview of the previous term's financial results 2

Continuing with the explanation of changes in the balance sheet, total assets decreased by 420.7 billion yen (6.8%) to about 5.8 trillion yen. There was a significant fluctuation in current assets, especially noticeable in the increase in cash and decrease in marketable securities. Inventory has surged, which is due to a rapid increase in production to meet the growing demand for GPUs, expected to convert into revenue in the coming term. In terms of equity and debt, the proportion of tangible fixed assets is low, reflecting the characteristics of fabless management. The equity ratio is at 53.7%, indicating a virtually debt-free state. While borrowings have increased, net interest-bearing debt is negative when including marketable securities. As for cash flow trends, a decrease in net income has reduced operating CF by 38.1%. Investment CF has seen a cash inflow of 1 trillion yen, mainly due to redemption income from securities. Free CF has turned positive to 1.8 trillion yen, allocated for significant share buybacks and dividend payments.

### **Cross SWOT analysis**

	·	Strength	Weekness
		•Diversified product portfolio	·High R&D costs
Opportun ities	Opportunities	established itself as a leader in graphics processing units (GPUs) and artificial intelligence (AI) technology. The company's GPUs are known for their high performance and efficiency and have an overwhelming following	autonomous vehicles, cloud computing, and data centers, where
Threats	Threats	Strategic Partnerships: Nvidia has established strategic partnerships with leading technology companies such as IBM, Microsoft, and Amazon to win	They invest significant resources in R&D to stay at the forefront of technological advances, and the continued need for R&D investment may put pressure on their financial resources in the long run.

#### **ESG**

Improvement in energy efficiency: NVIDIA is conducting research at each stage of design, construction, and operation to improve the energy efficiency of data centers. Sustainability criteria are evaluated when procuring new sites. Major data centers are certified to the ISO 50001 energy management standard, with a goal to source 65% of energy from renewable sources by 2025.

- Social impact: NVIDIA recognizes that AI brings profound technological changes in our era and affects nearly every industry. Therefore, it considers the social impact, including negative effects, of AI on our lives.
- •Talent development: NVIDIA focuses on initiatives for staff, such as professional development courses, tuition assistance, career services programs, employee stock purchase plans, and partnerships with organizations to build talent pipelines.
- · Creation of sustainable growth: NVIDIA creates sustainable growth by attracting excellent talent and establishing an environment and culture where they can fulfill their life's work.

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## **Appendix 3: Directors (Excluding Audit Officer)**

<del>-</del>	1	
Representative Director	Mark Pink	Joined Hio Shoji Co., Ltd. Joined Pieroth Group Co., Ltd. Joined Nova Group Co., Ltd. Tokyo. Joined NatWest Markets Ltd. Appointed Vice President of Pacifica Consultants Co., Ltd. Managing Director, TMJ Net Search, TMJ Net Media Y.K. Experis TMJ Y.K., Manpower Group Corporation, appointed COO. President, TMJ Partners. Chief strategist of our company. Representative Director of the Company (current position)
Director	Shao Jing	Joined Kari Construction Shanghai Co., Ltd. (Kelly Property). Joined Rissho Koseikai. Joined Shanghai International Theme Paradise Co., Ltd., Shanghai Dishiuni University District. Joined Madison Lab Limited. Vice President and Head of Corporate Planning Office, BITOCEAN Co., Ltd. Director, Madison Securities Co., Ltd. Representative Director of the Company, Representative Director of Bit One Co., Ltd. (current position), Representative Director of Cross One Co., Ltd. (current position). Director, Quantum FOMM Limited (current position). Director of the Company (current position).
Director	TUNG CHUN FAI	CAF Securities, joined.DBS Bank, joined.Piper Jaffray, joined.Credit Venture Partners, joined.BIT ONE HONG KONG LIMITED (now Quantum Automotive Limited), Director (current).FASTEPS SINGAPORE PTE. LTD., Director (current).Choice Ace Holdings Limited, Director (current).Director of our company (current).Quantum FOMM Limited, Director (current).
Director	NEIL ADAM NASTANSK	Joined Endeavor Trading LLC. Joined Alphabit Trading / M&N Trading. Joined CANTOR FITZGERALD HK LTD. Joined USA FAMILY OFFICE, Portfolio Manager. Founder and CIO of Woodlands Investment Partners, Limited (current). Director of the Company (current).
Director	Sammu Bozhi	Joined Sanyoyo Securities Co., Ltd. Representative director of Toyo Securities Co., Ltd., Europe. Representative Director of Toyo Securities Co., Ltd. Asia. Representative director of Japan Asia Securities Co., Ltd. Joined CVP Financial Group (Hong Kong). Representative director of Yamagen Holdings Co., Ltd. (currently Madison Holdings Japan Co., Ltd.). Director, Madison Securities Co., Ltd. Executive Officer and Vice President of BITOCEAN Co., Ltd. Rejoined Madison Securities Co., Ltd.
Director	Hajime Tabata	Joined Tecmo Corporation. Joined Square Enix Co., Ltd. He is COO and studio head of Luminous Productions Inc. Established JP GAMES Co., Ltd. in 2019, Representative Director (current). Member of the Keidanren Web3 Task Force, Digital Agency Web3.0 Study Group external expert, and advisor to our company (current).
Director	Yushi Fukuda	Joined ITOCHU Corporation in April 2009. Managing Executive Officer, Representative Director and Managing Executive Officer, Representative Director and Senior Managing Executive Officer, Representative Director and Vice President Executive Officer, and Director. Takiron CI Co., Ltd. Representative Director, Vice President Executive Officer, Representative Director and President (current)

[Source] JPR

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#### TSE Quantum Solutions Co., Ltd. [2338] Issued date: March 4, 2024

## **Appendix 4: Shareholder Composition**

Shareholder name	ratio(%)	Number of shares
First Link Inc. Limited	21.4	3,111
Liu Yang /Central Capital Advisory/	11.5	1,672
Sharp Edge Ventures Ltd.	9.33	1,357
Chang Ali	8.87	1,290
Zhang Yusan	6.83	994
Apec China Development Limited	6.68	971
Kingdom Capital Resources Ltd.	6.21	902
DING LU	4.42	642
Mad Enterprises Ltd.	1.55	225
Quantum Solutions Co.,Ltd.	0.26	39

(Source) Created JPR from data obtained on January 22, 2024 from FactSet

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## Reference 1. For those new to JPR reports

## GCC Management™ Analysis

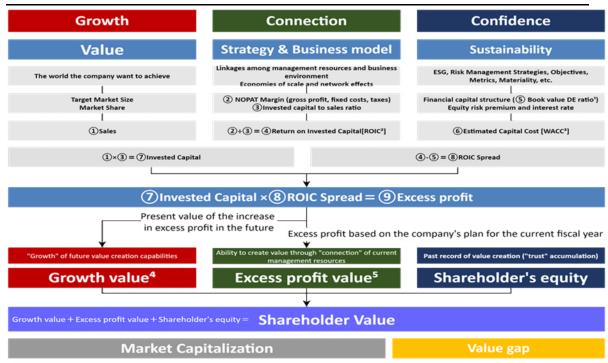
Analyze by the three elements of Growth, Connection, and Confidence.

A framework for directly linking qualitative stories to shareholder value

Visualize the value gap between theoretical shareholder value and market capitalization

This report analyzes corporate value from the perspective of GCC Management ™, a framework developed by J-Phoenix Research Corporation ("JPR"), emphasizing three elements: Growth (sales growth), Connection (improved human and business connections = higher return on capital), and Confidence (improved trust = lower business risk). The following chart shows the overall picture of the GCC Management ™ framework. The following diagram shows the overall picture. The qualitative future story is linked to financial indicators, which are finally integrated to estimate shareholder value. Using the excess profit method (see "Appendix 3. Basis of Calculation" at the end of this report), JPR estimates the final theoretical shareholder value and visualize the value gap by comparing it with the market capitalization.

#### GCC Management™ Analysis Framework



[Source: JPR] [Notes] 1. Book value DE ratio: Ratio of interest-bearing debt to shareholders' equity.
2. ROIC: Return on Invested Capital, See "Appendix 3." at the end of this document. 3. WACC: Weighted Cost of Capital, see "Appendix 3." at the end of this document. 4. growth value = cumulative present value of the perpetuity value of the excess profit increment through year X. The perpetuity value is calculated as the excess profit increment divided by WACC. The present value of that amount is discounted by the WACC. Cumulative future value up to year X as assumed by the growth scenario. 5. Excess profit value = the perpetual value of excess profit based on the current year's company plan. The excess profit value is estimated by dividing the excess profit calculated from the current year's company plan and the invested capital at the beginning of the period by the WACC.

Source: JPR

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## GCC Management™ Evaluation System

Evaluate the feasibility of the Growth and Connection story of the value creation process from three perspectives

## **Evaluation of Growth and Connection**

## Evaluate the feasibility of qualitative stories from three perspectives

JPR evaluates the feasibility of the value creation process based on GCC analysis from three perspectives: conceptual design, implementation design, and actual performance. "Conceptual design" is defined as "conceptualizing the concept of the value creation process" and "implementation design" is defined as "creating and operating a system to systematize and implement the management resources necessary to realize the concept of the value creation process. Value creation becomes an "achievement" only when "conceptual design" becomes "implementation design. JPR conducts subjective evaluations of "conceptual design," "implementation design," and "performance," which are then rated in an easy-to-understand manner at 90%, 70%, 50%, 30%, and 10%. Specifics are described below.

#### Conceptual Design," "Implementation Design," and "Performance" Evaluation Framework

% indication	% indication 90%		50%	30%	10%
"Conceptual design"	Conceptual design is very logically organized	Conceptual design is approximately logically organized	Conceptual design is about halfway organized	Conceptual design is organized to a certain degree	Conceptual design is organized to a certain degree
"Implementation design"	Conceptual design is almost implemented	Conceptual design is almost implemented	Conceptual design is about half implemented	Conceptual design is implemented to a certain degree	Conceptual design has been implemented, albeit marginally.
"Performance"	Targeted outcomes are observed as actual results almost exactly as intended by the conceptual design	Targeted outcomes are observed as actual results almost exactly as intended by the conceptual design	Targeted outcomes are observed as actual results as intended by the conceptual design about half way through	Targeted outcomes are observed as actual results to a certain degree, as intended by the design	Targeted outcomes are observed as achievements, albeit slight, as intended by the conceptual design

Source: JPR

## **Evaluation of Confidence**

#### Evaluation of financial stability and social contribution

Credibility of the value creation process

JPR evaluates the feasibility of the value creation process based on GCC analysis from three perspectives: "Conceptual Design", "Implementation Design", and "Actual Performance." "Conceptual Design" is defined as "conceptualizing the concept of the value creation process" and "Implementation Design" is defined as "creating and operating a system to systematize and implement the management resources necessary to realize the concept of the value creation process." Value creation becomes an "Actual Performance" only when "Conceptual Design" becomes "Implementation Design." JPR conducts subjective evaluations of "Conceptual Design," "Implementation Design," and "Actual Performance," which are then rated in an easy-to-understand manner at 90%, 70%, 50%, 30%, and 10%. Specifics are described below.

### "Conceptual Design," "Implementation Design," and " Actual performance" Evaluation Framework

% indication	90%	70%	50%	30%	10%
Financial Stability  The evaluation is based on a five- point scale from the viewpoint of sufficient experience in the value creation process, differentiated value creation capabilities that are difficult to imitate, low risk of fluctuations such as economic and seasonal fluctuations due to stockholding, and an optimized capital-liability structure.	Very Highly commendabl e	Highly commendabl e	Can be evaluated as a listed company on average	Can be commendabl e to a certain degree	Partially commendab e
Social Contribution  The social issues addressed are generally of great importance to society, the path to their solution is not yet clear, and they are tackling a challenging task that requires both the creation of a new concept and the systematic creation of the optimal governance structure for its implementation.	Very Highly commendab le	Highly commendab le	Can be evaluated as a listed company on average	Can be commendab le to a certain degree	Partially commendal le

## **Reference 1. Basis of Calculation**

Corporate value estimated by use of ROIC and excess return

## Excess return analysis framework

Excess profit or economic value added is globally used as an indicator to estimate corporate value, evidenced by its adoption by Kao Corporation, a Grand Prix winner of the Tokyo Stock Exchange Fifth Corporate Value Improvement Award (FY2016). In the calculation of excess return, corporate value can be broken down into four elements: invested capital, excess return value, growth value, and non-business assets. This facilitates a better understanding of the structure that creates corporate value. A company might be overvalued or undervalued when its market cap is higher or is lower than its theoretical corporate value, respectively. The contribution of each year's corporate value can be visualized in the following figure, wherein shareholders' equity is simply represented as a sum of invested capital and non-business asset, subtracting interest-bearing debts. The figure below allows us to estimate how many years of growth might be incorporated into the stock price.

#### Breakdown of corporate value using excess return



[source] JPR

Estimated excess return is profit that exceeds investors' return expectations against invested capital. Its present value is "excess return value," while a potentially growing portion of excess return is "growth value." Moreover, assets not used in business are added as non-business asset value in estimating a theoretical corporate value. Theoretically, the estimated corporate value using excess return should be the same as the value estimated using the discount cash flow (DCF) model. This report calculates excess return by using the following figures in a simplified manner.

☑Invested capital = Total assets - Non-business assets - Current liabilities excluding Interest-bearing debt
☑Non-business assets = Cash and deposits exceeding 10% of sales + Short-term investment securities +
Investment securities + Deferred gains or losses on hedges + Land revaluation difference + Foreign currency translation adjustments

 $\square$ Weighted average cost of capital (WACC) = After-tax interest rate of interest-bearing debt X(D/(E+D)+Cost of shareholders' equity X(E/D+E)

②Cost of shareholders' equity=0.5%+5%Xβ

☐β = Slope of a linear regression line of five-year daily returns of TOPIX and the stock price of the target company

②E = Market cap at the time of calculation

D = Short-term interest-bearing debt + Long-term liabilities + Minority interests in the latest financial

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