

February 27, 2025

Subject : Management Discussion and Analysis for the year ended December 31, 2024

To : President
The Stock Exchange of Thailand

Harn Engineering Solutions Public Company and its subsidiaries ("The Company") would like to provide information on the Company's operating results for the year ended December 31, 2024, which have been audited by our certified public accountant as follows:

1. Overview of Business Operations, Economic Conditions, and Industry Environment Affecting Operations

The overall Thai economy in 2024 is expected to expand at a better pace compared to the previous year, driven by the recovery of the tourism sector and domestic spending. Government expenditure has increased, with a faster disbursement of the budget. However, private sector investment continues to show a downward trend, particularly in the residential construction sector. Additionally, overdue debt in the private sector has risen. The Thai baht remains volatile, and logistics costs remain high due to the political conflicts. Overall, the global economy remains in a sluggish state.

The competition in the industrial sector, which impacts businesses, remains intense both domestically and internationally, particularly from budget imported goods entering the market and being competitive to high standard products which the company is an authorized dealer. This has led to the need for businesses to employ various strategies and marketing efforts to maintain existing customer bases and attract new ones. As a result of the above factors, the company's revenue from sales and services, as well as gross profit margin, decreased by 4.66% and 2.08%, respectively. Other income increased, distribution cost and administrative expenses decreased. The company also recognized an impairment loss of goodwill for the refrigeration business unit amounting to 18.70 million baht, as further explained in the section on significant events and performance summary. This led to a 23.19% decrease in net profit attributable to the parent company compared to the previous year. However, excluding the impairment loss, which is a non-cash item, the net profit attributable to the parent company would have decreased by 6.79%.

2. Summary of Key Events and Developments

The company's business operations across all business units continue as usual, with the following significant events:

1. The management of the company has prepared financial projections for the refrigeration and digital printing business units to test for impairment of goodwill. In assessing the value in use, the present value of the expected future free cash flows (DCF) over a 5-year period (from January 1, 2025, to December 31, 2029) was used, applying the discount rate derived from the calculation of the weighted average cost of capital (WACC) for the business units. After careful consideration, the management believes that there is no impairment of goodwill for the digital printing business unit. However, the refrigeration business unit experienced impairment, which has been recognized as an expense of 18.70 million baht in 2024.
2. On February 13, 2025, the company successfully registered the establishment of a new subsidiary with the Department of Business Development, Ministry of Commerce (as per the resolution of the 6/2024 Board of Directors meeting on November 13, 2024). The company holds 100% of the registered capital, which amounts to 3 million baht. The subsidiary's primary business activities include the trade of medical instruments, manufacturing, assembly, or fabrication of medical instruments, packaging or repackaging medical instruments, sterilizing medical instruments, as well as the production and trade of synthetic rubber, prosthetics, and related raw materials or products.

3. Summary of Business Performance

Consolidated Income Statements (MB.)	Y2024	Y2023	Change	
			MB.	%
Revenues from sales and services	1,239.04	1,299.62	(60.58)	(4.66%)
Other revenues	32.46	26.61	5.85	21.98%
Total revenues	1,271.50	1,326.23	(54.73)	(4.13%)
Costs of sales and services	891.98	908.61	(16.63)	(1.83%)
Distribution costs	114.90	118.28	(3.38)	(2.86%)
Administrative expenses	130.81	151.63	(20.82)	(13.73%)
Loss from impairment of goodwill	18.70	-	18.70	#DIV/0!
Finance costs	2.77	2.92	(0.15)	(5.14%)
Expected credit loss	0.97	2.76	(1.79)	(64.86%)
Total cost and operating expenses	1,160.13	1,184.20	(24.07)	(2.03%)
Profit before income tax	111.37	142.03	(30.66)	(21.59%)
Tax expense	24.85	28.86	(4.01)	(13.89%)
Profit for the period	86.52	113.17	(26.65)	(23.55%)
Sub Non-Controlling Interests	(1.08)	(0.87)	(0.21)	24.14%
Profit attributable to parent company	87.60	114.04	(26.44)	(23.19%)
Gross profit margin (%)	28.01%	30.09%		(2.08%)
Net profit margin (%)	6.80%	8.53%		(1.73%)

Revenues from sales and services

The company operates five business units: 1. Fire Protection Products and Projects, 2. Air-conditioning & Sanitary Products, 3. Refrigeration Systems, 4. Digital Printing Products and 5. Building IoT Solutions.

In 2024, the company's revenue from sales and services amounted to 1,239.04 million baht, a decrease of 60.58 million baht or 4.66% compared to the previous year. Revenue from the fire protection systems and project services unit declined due to delays in the delivery of fire protection system installations, lower condominium construction projects due to excess supply conditions, an economic downturn, and payment issues with several main contractors, leading to delays in product delivery. This resulted in a decrease in revenue from sales and services by 47.84 million baht, or 7.43%. The refrigeration systems business unit also saw a decline in revenue due to intense market competition. Some customers' investment plans were delayed, and projects for building cold storage rooms or distribution centers decreased, leading to a revenue reduction of 28.18 million baht, or 11.39%, respectively, as shown in the table below.

Revenue from Sales and Services (MB.)	Y2024	Y2023	Change	
			MB.	%
Fire protection products & projects	595.99	643.83	(47.84)	(7.43%)
Air-conditioning & sanitary products	64.69	59.88	4.81	8.03%
Refrigeration systems	219.14	247.32	(28.18)	(11.39%)
Digital printing systems	357.86	346.55	11.31	3.26%
Building IoT products and solutions	2.15	2.04	0.11	5.39%
Elimination of intersegment sales	(0.79)	-	(0.79)	#DIV/0!
Total	1,239.04	1,299.62	(60.58)	(4.66%)

Other income

The company reported an increase in other income by 5.85 million baht, or 21.98%. Significant items include the recovery of bad debts from trade receivables amounting to 3.21 million baht, which the company collected after pursuing legal action. This type of transaction is not a regular. Additionally, there was an increase in other income from the previous year, such as gains from foreign exchange, rental income from office buildings and warehouses, interest income, and dividend income, among others.

Cost of sales and services and GPM

The cost of sales and services decreased by 16.63 million baht, or 1.83%, which is a smaller reduction compared to the decline in revenue. This resulted in an overall decrease in the gross profit margin by 2.08%. The reduction was primarily due to increased selling prices by suppliers and manufacturers, driven by inflation in the manufacturing countries, as well as higher transportation and import costs. The company was unable to immediately pass on the increased costs of goods and operations to customers, in part due to the need to maintain prices for certain products over a period of time. This, combined with the competitive market conditions, impacted profitability. The gross profit margin of all business units are as follow:-

Gross Profit Margin (%)	Y2024	Y2023	Increase /(Decrease)
Fire protection products and projects	26.82	27.20	(0.38)
Air-conditioning and sanitary products	23.71	26.32	(2.61)
Refrigeration systems	17.54	25.34	(7.80)
Digital printing systems	37.12	39.45	(2.33)
Building IoT products and solutions	40.96	35.58	5.38
Total	28.01	30.09	(2.08)

Distribution costs

The distribution costs decreased by 3.38 million baht, or 2.86%, due to lower sales and service income, which led to a reduction in sales staff and service technician expenses that are variable based on revenue. However, the decrease in selling expenses was lower than the decline in sales and service revenue because a portion of the expenses consists of fixed costs, such as salaries and benefits for sales personnel.

Administrative expenses

Administrative expenses decreased by 20.82 million baht, or 13.73%, mainly due to a reduction of 12.62 million baht in the amortization of customer relationships acquired through entire business transfer, as the full amount was fully amortized according to policy in Q4/2023. Additionally, there was an unrealized loss of 12.31 million baht from investments in property and infrastructure funds, which incurred losses specifically in 2023. However, salary and employee benefit expenses increased by 2.37 million baht.

Loss from impairment of goodwill

On November 29, 2016, the company purchased and acquired the entire business operations of Chillmatch Co., Ltd. and Q2S Co., Ltd. through the issuance of additional shares amounting to 675.36 million baht in exchange for the identifiable net assets of both companies, totaling 340.69 million baht. As a result, goodwill of 334.67 million baht was generated. Upon performing the Purchase Price Allocation (PPA) as of the business combination date, the refrigeration systems business unit had goodwill amounting to 200.07 million baht, while the digital printing systems business unit had goodwill of 134.67 million baht. This goodwill has been regularly tested for impairment in accordance with financial reporting standards each year.

Summary of operating results for the two business units based on cash-generating units that require goodwill impairment testing.

Unit : Million Baht

	Y2024	Y2023	%
Refrigeration system unit			
Revenues from sales and services	219.14	247.31	(11.39%)
Gross profit	38.42	62.65	(38.68%)
Gross profit margin (%)	17.53%	25.33%	(7.80%)
Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) margin (%)	3.88%	8.33%	(4.45%)
Digital printing system unit			
Revenues from sales and services	351.41	340.14	3.31%
Gross profit	130.27	134.75	(3.32%)
Gross profit margin (%)	37.07%	39.62%	(2.55%)
Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) margin (%)	15.89%	17.49%	(1.60%)

At the end of the fiscal year on December 31, 2024, the management prepared financial projections for the refrigeration systems and digital printing systems business units to test the impairment of goodwill. In assessing the value in use, the present value of the expected future free cash flows (DCF) was used, based on financial projections for the next 5 years (from January 1, 2025, to December 31, 2029). The discount rate applied was derived from the weighted average cost of capital (WACC) for the business units, which is 5.81%, and the terminal value growth rate was set at 0%.

The key financial assumptions are summarized as follows:

Key Financial Assumptions	Y2024	Y2023
Risk Free Rate :RF	2.49% referring 15 Year Government Bond Yield <i>(as of 30/12/2024)</i>	2.70% referring 10 Year Government Bond Yield <i>(as of 28/12/2023)</i>
Market Risk :RM	8.22% Referring average SET Total Return Index: SETTRI from investing in Stock Exchange of Thailand for the last 15 years from Y2009 – Y2024	6.94% Referring Thailand's Country Default Spreads and Risk Premiums of Professor Damodaran NYU Model <i>(as of 5/1/2024)</i>
Beta	0.58 Referring average INDUS (MAI) Beta for the last 2 years from Y2023 - Y2024 after adjust to Company's leverage ratio	0.31 Referring to Harn's Beta <i>(as of 28/12/2023)</i>
Corporate Income Tax	20%	20%
WACC	5.81%	4.01%

The management has conducted a sensitivity analysis by changing the Weighted Average Cost of Capital (WACC) by +1.0% and -1.0% from the base case, with the following details:

Unit : Million Baht

Enterprise Value	WACC		
	-1.0%	Base Case	+1.0%
Refrigeration system unit	36.69	182.48	(25.93)
Digital printing system unit	172.51	830.73	(121.82)

The management has exercised caution in preparing the data by using the best estimates based on past circumstances and future business strategies. The financial data has been reviewed for the appropriateness of the assumptions used in the preparation by the company's certified public accountants. The opinions of the Board of Directors and the Audit Committee have confirmed that the management has made projections based on reasonable assumptions. They believe that the recording of the group's losses has been completed and accurately reflected in accordance with the relevant financial reporting standards.

The management has reviewed and believes that there was no impairment of goodwill for the digital printing systems business unit. However, the refrigeration systems business unit experienced an impairment of goodwill as of December 31, 2024, amounting to 18.70 million baht. As a result, the goodwill value as of December 31, 2024, is recorded at 315.97 million baht, reflecting a decrease of 5.59%.

If the impairment of goodwill had not been recognized, the net profit attributable to the parent company would have been 106.30 million baht, compared to 114.04 million baht in 2023, representing a decrease of 7.74 million baht or 6.79%.

Strategy for Revitalizing the Refrigeration System Business Unit

The Refrigeration System Business Unit faces intense competition as a distributor of foreign products, with no proprietary innovations of its own. However, the refrigeration market still holds significant growth potential. The company, as an authorized distributor of leading global refrigeration product manufacturers, benefits from a team of engineers who possess expertise and have received direct training from the manufacturers. This enables them to design and propose solutions that meet customer needs, improve operational efficiency, and reduce operational costs for clients.

In 2024, the business unit successfully developed the Cold Storage IoT smart cold room system, which is now fully operational. This system helps monitor and track the performance of refrigeration

systems and uses the collected data to optimize energy usage, ensuring energy efficiency and cost-effectiveness. This represents a key milestone in the success of the IoT solution. The company is committed to driving the integration of IoT systems into its refrigeration offerings, presenting them to customers as energy-saving solutions. Furthermore, this initiative also contributes to the company's long-term sustainability efforts.

Expected Credit Losses

For the years ended December 31, 2024, and 2023, the company has recognized expected credit losses as follows:

Unit : Million Baht

	Y2024	Y2023	Increase (decrease)
Parent Company	0.31	2.43	(2.12)
Subsidiaries			
Harn Vietnam Co., Ltd.	-	-	-
Aiyaraharn Co., Ltd.	0.66	0.33	0.33
Total expected credit losses	0.97	2.76	(1.79)

For the year ended December 31, 2024, the company recognized a decrease in expected credit losses amounting to 0.97 million Baht, a reduction of 1.79 million Baht or 64.86% compared to the previous year, which is attributable to the parent company. The decrease in expenses was 2.12 million Baht from efficient acceleration and monitoring of payment collection., while the subsidiary, Aiyaraharn Co., Ltd., saw an increase of 0.33 million Baht. This was due to clients not accepting certain projects, resulting in uncertainty regarding debt collection. The management therefore deemed it necessary to recognize the expected credit loss.

Net Profit

For the year 2024, the net profit attributable to the shareholders of the parent company amounted to 87.60 million Baht, a decrease of 26.44 million Baht or 23.19% compared to the previous year. This decrease was mainly due to lower sales and service revenue, a decrease in gross profit margin, fixed employee-related expenses included in distribution costs and administrative expenses, as well as the recognition of impairment loss on goodwill. However, excluding the impairment loss on goodwill, which is a non-cash expense, the net profit attributable to the shareholders of the parent company was 106.30 million Baht, a decrease of 7.74 million Baht or 6.79% compared to the previous year.

4. Summary of Financial Position

Balance sheet	Y2024	Y2023	Change	
			MB.	%
Total Assets	1,799.75	1,754.01	45.74	2.61%
Total Liabilities	421.74	370.83	50.91	13.73%
Equity attributable to the parent company shareholders	1,379.32	1,383.42	(4.10)	(0.30%)

Assets

As of December 31, 2024, the company had total assets amounting to 1,799.75 million Baht, an increase of 45.74 million Baht or 2.61% compared to the previous year. This increase was attributed to the company's operating results and strong working capital management and liquidity during the year 2024. The company utilized its excess liquidity by investing in short-term returns through government bonds, property funds, infrastructure mutual funds, and term deposits, which increased by 65.23 million Baht and were reflected under the "Other Current Financial Assets" category. Additionally, trade receivables and other receivables increased by 34.53 million Baht. Moreover, the right-of-use assets from office building and warehouse lease contracts increased by 22.82 million Baht as a result of lease renewals for periods ranging from 3 to 10 years. Consequently, lease liabilities under finance leases also increased.

Liabilities

As of December 31, 2024, the company had total liabilities amounting to 421.74 million Baht, an increase of 50.91 million Baht or 13.73% compared to December 31, 2023. This increase was primarily due to the rise in lease liabilities following the increase in right-of-use assets, as explained in the "Assets" section. Additionally, trade payables and other payables increased by 16.87 million Baht.

Equity attributable to the parent company shareholders

As of December 31, 2024, the company's equity attributable to the parent company amounted to 1,379.32 million Baht, a decrease of 4.10 million Baht or 0.30% compared to the balance as of December 31, 2023. Additionally, a dividend payment of 87.67 million Baht was made from the 2023 financial performance.

Cash Flow Analysis

Description (MB.)	For the year ended December 31,		
	Y2024	Y2023	Increase /(Decrease)
Net Cash Flow from Operating Activities	117.18	197.61	(80.43)
Net Cash Flow from (Used in) Investing Activities	(63.75)	27.42	(91.17)
Net Cash Flow from (Used in) Financing Activities	(99.81)	(87.48)	(12.33)
Effect of translation adjustment on foreign currency financial statements	(0.34)	(0.22)	(0.12)
Net Increase (Decrease) in Cash and Cash Equivalents	(46.72)	137.33	(184.05)
Cash and Cash Equivalents - B/F	340.19	202.86	137.33
Cash and Cash Equivalents - C/F	293.47	340.19	(46.72)

The net cash flow from operating activities for the year 2024 was 117.18 million Baht, a decrease of 80.43 million Baht compared to the previous year. The main reasons for the decrease were a reduction in profit before income tax by 30.66 million Baht, an increase in trade receivables and other current receivables by 24.63 million Baht, an increase in inventories by 14.27 million Baht, an increase in trade payables and other payables by 16.70 million Baht, and income tax payments amounting to 24.17 million Baht.

The cash flow used in investing activities was 63.75 million Baht, from investments made for short-term returns in government bonds, property funds, infrastructure funds, and fixed deposits totaling 64.44 million Baht. The company also received dividend income and interest income totaling 6.29 million Baht.

The net cash flow used in financing activities was due to dividend payments at the rate of 0.15 Baht per share, amounting to 87.61 million Baht. And cash payment for office and warehouse financial leases amounting 12.37 million Baht.

Key Financial Ratios

Key Financial Ratio	Unit	Y2024	Y2023
Current ratio	Times	4.17	4.18
Debt to equity (D/E ratio)	Times	0.31	0.27
Return of asset (ROA)	%	6.42	8.20
Return on equity (ROE)	%	6.34	8.35

5. Factors That Could Impact Future Operations or Growth

The trend and risks related to global climate change are important issues that may impact the company's operations or future growth. Therefore, the company has made these factors a key consideration in determining its strategic direction and risk management. The company has integrated

these important issues into its strategic planning and risk assessment processes for 2024, aligning with the organization's new vision and mission. This is evident from the continuous commitment to driving operations in line with the sustainability strategy, particularly in environmental aspects, with a focus on "Go Green" under the BCG (Bio-Circular-Green) economic model. This model emphasizes the development of a low-carbon society alongside environmentally friendly business operations. The company has set a target for carbon neutrality by 2040 and aims to achieve net-zero greenhouse gas emissions by 2050.

6. Sustainability Developments

The company is committed to operating and fostering sustainable growth across all four dimensions: economy, environment, society, and governance, to support its vision: "We strive to be the leader in providing sustainable engineering services that meet customer needs in improving quality of life, society, and the environment." This vision is integrated into every step of business operations under the principles of good governance and business ethics, considering the impact on stakeholders and the value chain. As such, the company has established a policy for sustainable organizational development according to two main business strategies : Business and Sustainability (B+S), driving sustainability initiatives across each dimension, aligning with long-term operational goals. The company also emphasizes readiness to face potential future crises, focusing on developing employee skills and incorporating technology to enhance work processes, boosting competitiveness, and ensuring sustainable growth. This information is disclosed on the company's website at www.harn.co.th.

Additionally, the company has been consistently rated "Excellent" with a 5-star governance rating for six consecutive years and has been evaluated with an "A" in the 2024 "SET ESG Ratings" for sustainability. Furthermore, the company has introduced environmentally friendly products to customers.

By integrating environmental awareness into its product offerings, the company not only enhances the sustainability of its operations but also contributes to broader efforts in protecting the planet and addressing global environmental challenges. Through these efforts, the company continues to demonstrate its commitment to good governance and sustainable growth, ensuring that its operations benefit not only shareholders but also society and the environment as a whole.

Please be informed accordingly.

Sincerely Yours,

(Mr. Thammanoon Tripetchr)
Chief Executive Officer