

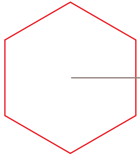


Annual Registration Statement
Annual Report 2021
(Form 56-1 One Report)



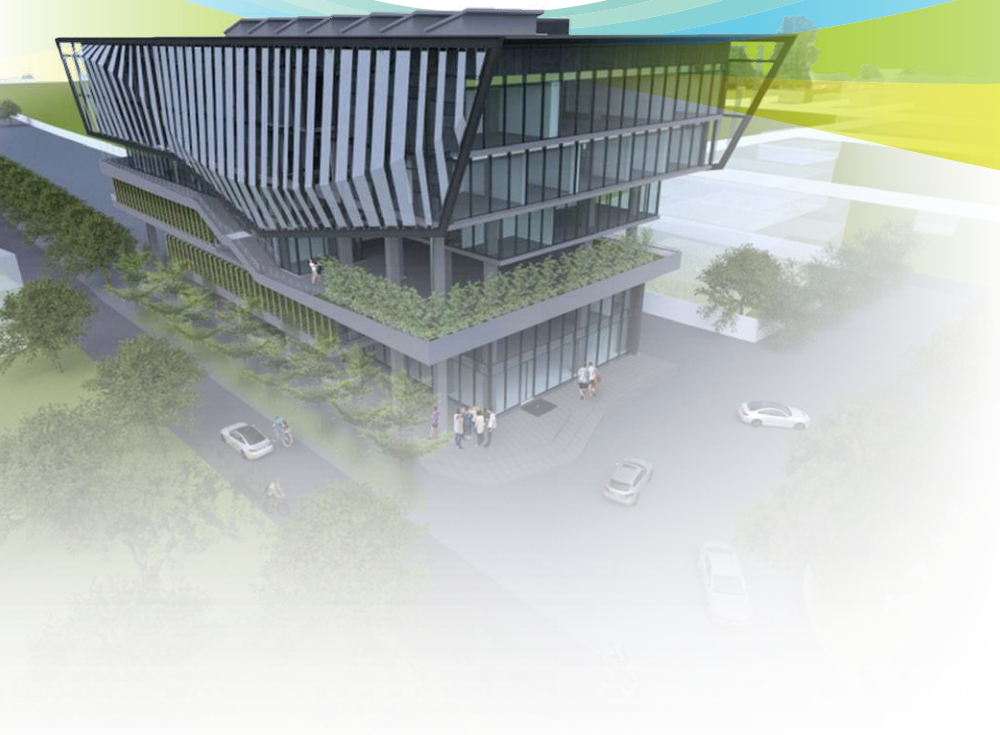
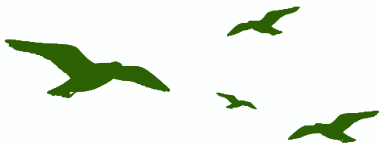
HARN
Engineering Solutions

Harn Engineering Solutions Public Company Limited



Quality Living Through Sustainable Engineering

- Fire Protection & Safety
- Air Conditioning & Sanitary
- Refrigeration
- Digital Printing
- Harn 3DMed



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In case this Annual Registration Statement / Annual Report (Form 56-1 One Report) references information disclosed on the HARN's website, the disclosed information shall be deemed to be part of Form 56-1 One Report. The Board of Directors certifies the correctness and completeness of disclosed information and annual information disclosure in Form 56-1 One Report.

Message from the Board of Directors



Mr. Thakol Nunthirapakorn

Chairman of the Board

In the past year, HARN Engineering Solutions Public Company Limited, with its stock symbol as “HARN”, operated a business of selling products and providing services in a wide range of engineering systems, including fire suppression products, air conditioning products, cooling system products, digital printing products, as well as its affiliated companies, moved its head office to a new building. HARN has invested in the installation of its equipment, including building a learning lobby for product learning, which is open to customers visiting HARN. Although HARN was affected by the COVID-19 pandemic that resulted in a two-year economic slowdown, HARN had been continuing to expand its business by bringing in new products to sell more. Yet, it could not generate enough income due to the adverse economic situation. Therefore, the performance of HARN did not reach the expected target in the past year. However, the Board of Directors and employees have been committed to conducting business with caution and conciseness in order to reduce the impact of such conditions. Thus, HARN has had profitable business operations despite the decreased amount. HARN is still determined to expand the business by finding new products to enter into the potential market. For example, HARN has established a subsidiary that operates businesses related to IoT, and expanded the digital printing business in Vietnam. HARN has also expanded its business to provide more services in each business unit, such as a refrigeration assembly plant and a fire extinguishing compound that meet international standards initially used in the middle of last year in order for HARN to generate more revenue from the services. In addition, in the past year, HARN opened a Digital Center of Excellence showroom for both domestic and international customers to visit and try the digital printer demonstration. HARN has a stable financial position, enabling us to find new business opportunities in



Mr. Wirat Sukchai

Chief Executive Officer

the future. We are sure that after the COVID-19 problems are solved, HARN will definitely make good business profits and be able to create stable and continuous business growth.

As for the operation under the good corporate governance policy, HARN has consistently given importance to the practice of good corporate governance principles. Has an action with responsibility to customers, employees, shareholders and all stakeholders fairly. Transparent and can be inspected, which can be seen in a concrete of receiving the highest level of good corporate governance scores (CG Score 5 stars) continuously for 3 years and been certified as a member of the Collective Action Coalition against Corruption. It has prepared a handbook and instituted policy and procedure with objectives declared and process put in place for the employees, trade partners and the public to inspect and inform of any incidents suspicious of corruption. Training and procedure are also provided to ensure commitment to anti-corruption with a view to grow business sustainably with trust from employees, trade partners and investors at large.

On behalf of the Board of Directors, we would like to express our gratitude to the shareholders, customers, trade partners, business partners, as well as the Board members, executives and all staff that has always trusted and supported the operation of HARN and please be assured of the dedication and commitment overcome various obstacles of all the Board, management and staff members to jointly drive the development of HARN towards sustainable business growth under good corporate governance for the maximum benefits of all stakeholders and contributes to the development and positively affects the overall economy and society.

Section 1

Business Operations and Performance

1. Structure and Business Operations

1.1 Business Policy and Overview

Background

Harn Engineering Solutions Public Company Limited (“HARN”) previously known as Fire Victor Public Company Limited was set up as a section of Harn Engineering Company Limited (“Harn Company”). Later on May 9, 2001, HARN was incorporated as a juristic entity named “Fire Victor Company Limited” by Charnnarong Group¹ and Mr. Wirat Sukchai, former executive of Harn Company overseeing sales of valves and equipment for firefighting system, following a corporate restructuring from family business management to professional management. With an initial registered capital of Baht 1 million, HARN was established to engage in import and distribution of valves and equipment for fire protection system and valves and equipment for sanitary system and air-conditioning system, including fire protection system installation services. On February 21, 2003, July 24, 2006 and October 10, 2012 HARN increased its registered capital to Baht 3 million, Baht 4 million and Baht 65 million respectively, for use as working capital in its business operation.

In November 2016, has changed name from Fire Victor Public Company Limited after entering in a joint venture with Chillmatch Company Limited and Q II S Company Limited. The three companies were originally business units of Harn Company, with a long history of being a distributor and consulting, designing engineering systems since 1965, with more than 60 years of experience and reputation. This time, the company is ready to focus on being the leading provider of sustainable solutions of safety engineering systems, cooling system, air conditioning system, and digital printing systems in Thailand and neighboring countries.

For safety engineering system solutions in 2001, started the business of importing and distributing valves, fire extinguishing systems, sanitary equipment, and air conditioning, along with providing fire extinguishing system installation services for projects. Later In 2003, expanded its business by adding Project Sales Division to provide consultation services, designing and installation services of all types of fire protection system such as Automatic sprinkler system, Foam fire protection, Fire alarm systems and Close circuit television system, all of which are to be carried out by a skillful, specialized engineering team, with focus on not so large projects, i.e. small- and medium-sized factories, and in 2005, added carbon dioxide (CO₂) system and extinguishing system FM200². Until now, has been added product NOVEC 1230 Fire Suppression System, Inert Gas System, Wet Chemical Fire Suppression System.

In 2007, received an Outstanding Distributor Award presented by NIBCO Inc., USA. Currently HARN expanded into fire suppression systems for petrochemical industry with security systems.

For more than 60 years, HARN has experience in providing high quality refrigeration solutions for industrial and agricultural products by a team of engineers with expertise in designing a cooling system that is suitable for product preservation in order to maintain the highest quality, weight and freshness. Since 2002, there have been many energy crises, leading HARN to develop its expertise in developing energy-efficient solutions that have been widely accepted. Currently HARN is the leader in refrigeration technology in Thailand and continue to grow progressively.

¹ The Charnnarong Group consisting of Mrs. Prayoonsri Charnnarong, Mrs. Sirima Iamsakulrut and Mr. Jain Charnnarong

² FM 200 firefighting system is a clean agent fire protection system with UL/FM standard certification for using substances that cause no harm to computers, electronics equipment and human beings, hence being safe for installation in server rooms, data centers and UPS rooms.

In terms of digital printing systems, HARN started a business about printers and printing equipment, date of manufacture / expiration since 1965, with a commitment conduct a distribution business and provide after-sales service based on speed and quality in order to ensure highest customer satisfaction. Today, HARN is the leader in digital printing technology for production lines in Thailand and has gained the trust of leading companies nationwide. In 2015, expanded into 3D printing solutions until it was able to drive rapid prototyping and digital manufacturing in education, dentistry, medical and packaging and manufacturing industries. In 2019, focuses on being a leader in neighboring countries by registered the establishment of Han Vietnam Company Limited (“subsidiary”), Vietnam, with a registered capital of 800,000,000 Vietnamese dong or approximately Baht 1,057,444, HARN holds 100% of the subsidiary's shares in the registered capital on 30 July 2019.

HARN has implemented international quality. Presently has been awarded ISO 9001:2015 by UKAS (United Kingdom Accreditation Service), UK-based world-class certification

body with quality inspection and verification conducted by SGS (Thailand) Company Limited. Certified ISO 9001:2004 since 2006 and migrated ISO 9001:2008 since 2009. Presently migrated certified ISO 9001:2015 in 2017.

In 2021, HARN continues to target a service leading sustainable solution through business diversification, while being able to deliver sustainable returns and better quality of life to all stakeholders and to achieve Vision, Mission and Target of business.

To efficiently achieve of HARN's strategy, the Board of Directors has a review of vision, mission, business direction and has approved of strategy 3 targets for effective execution for the next 3 years: namely,

- 1) SMART Business, by make a good investment return to shareholders and maximize our customer satisfaction;
- 2) SMART People, by committed to build a happy of work for employee; and
- 3) SMART Environment, by create long term values and enhance quality of life for all stakeholders.

Long-Term Targets				
Generate sales more than 1,500 MB.	Payment of no less than 40% of net profit after income tax and legally required reserves.	Maintain customer satisfaction more than 90%	maintain employee satisfaction more than 85%	Taking of the environment, society, and governance in made business 100%

Also, optimizing current knowledge and business platforms to enhance competitiveness. In addition, HARN and Subsidiaries value stewardship of the environment, society, and corporate governance to ensure the achievement of truly becoming a sustainable organization. The Top Executive has

passed the plan to executives and employees at all levels for their acknowledgement and continues to monitor the implementation of strategies to ensure that the set goals are met. The progress shall be reported to the Board of Directors every quarter.

1.1.1 Vision, Mission and Target

Vision, Mission and Target



We are committed to be a leading sustainable solution provider of engineering systems in safety, refrigeration and digital printing in Thailand and neighbor countries

Mission



1 1

We will maximize our **customer** satisfaction through high quality products and services, leading technology and excellent business practice.

2 2

We believe in our **employees'** value and potential and are committed to build a happy, energetic, innovative and dynamic workplace of competent teamwork with integrity, positivity and professional responsibility.

3 3

We will make a good investment return to **shareholders** and continually grow our business in a sustainable way.

4 4

We will create long term values and enhance quality of life for all our **stakeholders** under prudent management and good corporate governance.

Core Values



Target



1



Strengthen good relationship with major customers consistently and continuously.

2



Increase the presence of distributors in safety engineering systems, refrigeration system and digital printing to the support the needs of all customers standard product group.

3



Expand the customer base to neighboring countries such as Myanmar, Vietnam, Cambodia, etc.

4



Upkeep international standard of business practice and continuous development of business processes.

8



Expand the customer increase base to project contractors, industrial sectors, and end-users.

7



Focus on customers care in project, increase distribution of products under HARN brand and products under distributorship.

6



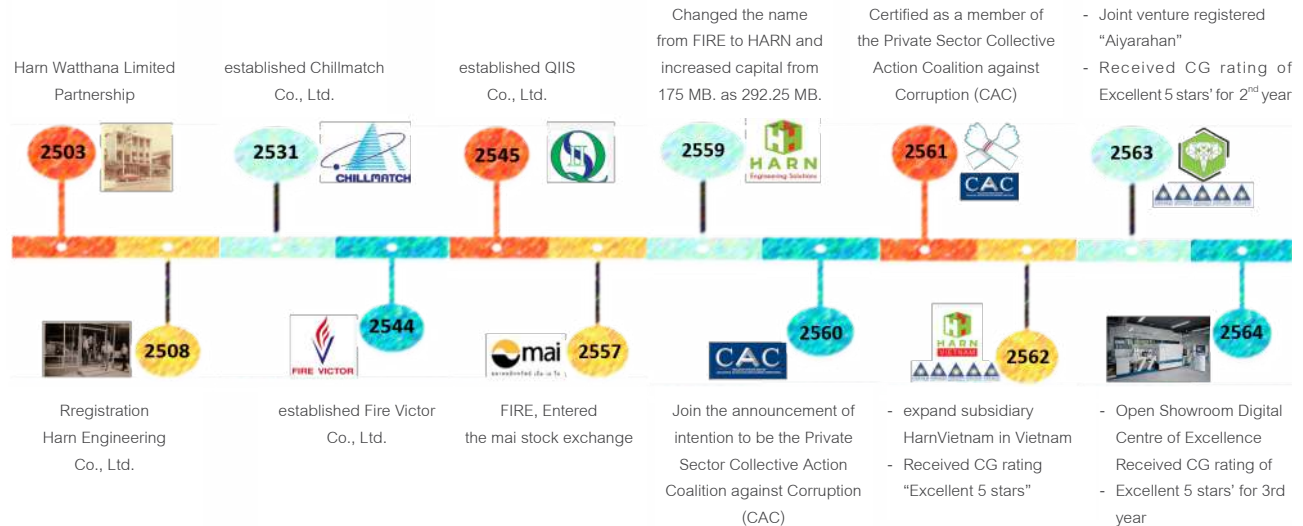
Create shared values in the organization to foster good corporate culture.

5



Foster learning organization to enhance competitiveness for success.

1.1.2 Significant Changes and Developments



During 2017-2021, there are several milestones and transformation as below

2021

- HARN was certified with CG Score as having good corporate governance principles for listed companies at a 5-star "Excellent" for the 3rd consecutive year on October 30, 2021.
- HARN and Domino jointly launched an online showroom "Digital Center of Excellence" on June 16, 2021 by Domino has press releases in international media, making it 1 of Domino's 3 Centers of Excellence together with Europe and America.



2020

- HARN joins hands with Ayarafun Group signed a joint venture for digital business development to build IoT Products and Solutions system to operate smart building development service under the name "Aiyarahan" on June 24, 2020.
- HARN has been listed as one of the 20 companies that Thaipat Institute has selected as the ESG Emerging List of Sustainable Way Companies, based on the environmental, social and governance (ESG) trends of start-up companies or in the process of working that has the opportunity to generate more long-term returns for investors.
- HARN was certified with CG Score as having good corporate governance principles for listed companies at a 5-star "Excellent" rating for the second consecutive year on November 19, 2020.
- Harn Vietnam ("Subsidiary") has successfully sold 1UV Digital Inkjet label printer and can be installed successfully by a team of Vietnamese engineers without requiring engineers from abroad to support due to the COVID-19 situation that does not allow foreigners to enter the country during that time.
- HARN has expanded cooperation with Domino UK Ltd., a manufacturer and distributor of UV Digital Inkjet label printer system, to establish a 120 square meter showroom, set up the printer on the first floor of a new office building. It is expected to be completed in Q1/2021, which will be used to support sales, training, and customer visits to the showroom, including online visitation by customers in Thailand and Asean countries. Domino agrees to pay the rental fee and sells machines to the company at a special discount price along with a payment term of up to 1 year or when the device is sold to the customer.

2019

- HARN received the honor from Prof. Dr. Bundhit Eua-arporn, the president of Chulalongkorn University, to join the opening of '3D printing service Harn - Chula' at Chulalongkorn University on January 8, 2019 as a part of project for community and society. The company was pleased to facilitate faculty and students to access to the 3D printing technology at a price below the market cost.
- HARN registered the establishment of Harn Vietnam Company Limited ("an affiliated company") in Vietnam with a registered capital of 800,000,000 Vietnamese dong or about 1,057,444 Thai baht. The company held shares in the affiliated company amounted to 100% of a registered capital on July 30, 2019.

2018

- HARN was sponsored by the National Innovation Agency (Public Organization) in the project HARN 3DMed: creating the human organ models with the advanced 3D printing technology for effective medical diagnosis and treatment planning' in transforming technology into capital on May 15, 2018
- HARN was certified as a member of the Private Sector Collective Action Coalition against Corruption in the round quarter 3/2018 on November 5, 2018.

2017

- HARN participated in the declaration as a member of the Private Sector Collective Action Coalition Against Corruption (CAC) on March 21, 2017.
- HARN supported International Packaging and Printing Exhibition for Asia (PACKPRINT INTERNATIONAL 2017) at Bangkok International Trade & Exhibition Center (BITEC) during September 20-23, 2017 and received Certificate from Thai Printing Association, Thai Packaging Association, and Messes Dusseldorf Asia.
- HARN participated in the innovation capability promotion scheme for innovative public organizations in the Stock Exchange of Thailand (SET) and Market for Alternative Investment (MAI) and earned Total Innovation Management Awards 2017 on October 6, 2017.
- HARN received ISO 9001:2015 certification from SGS (Thailand) Ltd. on November 23, 2017.
- HARN won the Highest Revenue Growth in Asia-Pacific Awards 2016 from Domino Printing, a leading provider of printing solutions in the UK, for the third straight year for its digital printing business, and licensed as Domino's distributor in Thailand, Myanmar and Cambodia, with business value generated ranking the 4th in Asia following Japan, South Korea and Taiwan.
- HARN was appointed as distributor of kitchen fire suppression system, i.e. Lehavot wet chemical system from Israel.
- HARN was appointed as distributor of EVAPCO evaporative condensers from the USA.
- HARN was appointed as distributor of DANFOSS refrigeration condensing units from Denmark.

1.1.3 Use of Proceeds

- None -

1.1.4 Obligations According to Bond Issuance

- None -

1.2 Nature of Business

HARN perates of importing and distributing products in Fire Protection system, Air-Conditioning system, Sanitary system, Refrigeration system, Digital Printing system, Development services for IOT Products and Solutions, including the provision of consulting, designing services in projects and provision

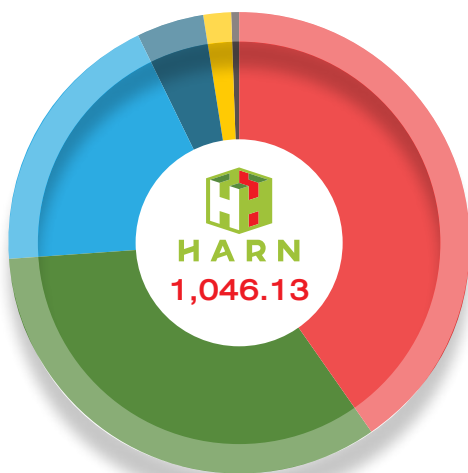
of engineering solutions complete. In addition, HARN's as provider for installing various system projects such as Foam Fire Protection System, Fire Suppression and Alarm Systems with expert engineering team.

1.2.1 Revenue Structure

Type of Revenue	% Shareholding	2021 ¹⁾		2020		2019	
		MB.	%	MB.	%	MB.	%
Revenues from sales and services							
• Fire suppression products and firefighting system installation services	100.00	423.94	40.53	534.18	45.68	644.12	46.21
• Air-conditioning and sanitary products	100.00	47.85	4.57	63.82	5.46	81.10	5.82
• Refrigeration products	100.00	197.35	18.86	202.83	17.34	262.00	18.80
• Digital printing products	100.00	351.90	33.64	349.07	29.85	379.66	27.24
• Internet of Think products (Aiyaraharn)	65.00	4.94	0.47	2.43	0.21	-	-
Total revenues from sales and services		1,025.98	98.07	1,152.33	98.54	1,366.88	98.07
Other revenues ²⁾		20.15	1.93	17.10	1.46	27.09	1.93
Total revenues		1,046.13	100.00	1,169.43	100.00	1,393.97	100.00

Notes : ¹⁾ Referring to Harn Engineering Solutions PCL.'s audited consolidated financial statement

²⁾ Other income included gains/losses on investment in mutual funds and marketable securities, interest receivable, dividend income, and foreign exchange gains/losses, including rental and service income from investment properties etc.



Revenue Structure 2021

40.53%	Fire suppression products etc. 423.94 MB.
33.64%	Digital printing products etc. 351.90 MB.
18.86%	Refrigeration products 197.35 MB.
4.57%	Air-conditioning products etc. 47.85 MB.
1.93%	Other revenues 20.15 MB.
0.47%	Internet of Think products 4.94 MB.

Note : Referring to Harn Engineering Solutions PCL.'s audited consolidated financial statement

Key Financial Information

			2021 ⁴⁾	2020 ⁴⁾⁵⁾	2019 ⁴⁾
Operating Results					
	Sales and Services Revenues	MB.	1,025.98	1,152.33	1,366.88
	Total Revenues	MB.	1,046.13	1,169.43	1,393.97
	Costs of Sales and Services	MB.	713.71	799.83	948.69
	Gross Profit	MB.	312.27	352.49	418.19
	Net Profit/(Loss) (NCI Excluded)	MB.	72.27	97.98	149.62
	Total Comprehensive Income (NCI Excluded)	MB.	73.52	97.58	147.98
Financial Position					
	Total Assets	MB.	1,685.72	1,658.20	1,596.30
	Total Liabilities	MB.	367.19	339.83	274.64
	Total Shareholders' Equity	MB.	1,317.97	1,317.77	1,321.66
Financial Ratios					
	Return on Equity ¹⁾	%	5.49	7.65	11.56
	Return on Assets ²⁾	%	5.52	7.72	11.89
	Gross Profit Margin	%	30.44	30.59	30.59
	Net Profit Margin ¹⁾	%	6.90	8.37	10.73
	Debt to Equity Ratio	Times	0.28	0.26	0.21
	Total Assets Turnover Ratio	Times	0.63	0.72	0.89
Stock Data Annual Average					
	Par Value per Share	Baht	0.50	0.50	0.50
	Book Value	Baht/Share	2.25	2.25	2.26
	Dividend per Share ³⁾	Baht/Share	0.10	0.13	0.18
	Dividend Payout Ratio	%	83.33	76.47	69.23
	Basic Earnings/(Loss) per Share	Baht/Share	0.12	0.17	0.26

Note : ¹⁾ Net profit/(Loss) used in calculation.

²⁾ Earnings before interest and finance costs used in calculation.






³⁾ Not confirmed until the approved by the 2022 Annual General Meeting of Shareholders.

⁴⁾ Referring to consolidated financial statement.

⁵⁾ Financial data of 2020 was adjusted EJIP to comply with TFRS 2 Share Based Payment

1.2.2 Description of Products and Services

Products and services into 5 categories as follows

				
Fire Suppression Products and Firefighting System Installation Services	Air-Conditioning and Sanitary Products	Refrigeration Products	Digital Printing Products and 3D Medical	Internet of Things Products
Is an importer and distributor of complete fire extinguishing system equipment	Is an importer and distributor of air conditioning equipment	To be the leader in refrigeration equipment sales Specializing in the design and consulting of refrigeration systems	To be a leader in providing engineering solutions. Digital printing and 3D printing	Provide tracking services for basic building systems

Fire suppression products and firefighting system installation services

FIRE PROTECTION & SAFETY 	NOVEC 1230 FM-200 IG-100 FOAM CONCENTRATE 	WATER MIST SYSTEM WET CHEMICAL FIRE ALARM 	PETROCHEMICAL AIR SAMPLING SMOKE DETECTION (ASD) VIDEO IMAGE DETECTION 
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Fire suppression products are part of engineering systems of buildings, small and large factories, power plants, and petrochemical industrial plants, used for prevention, alarming and control of fire and smoke. The products distributed by HARN include valves and fittings that are erected in the fire protection system. Valve is a device used for starting or stopping the flow of water in the fire protection system and is fixed with a pipeline in such system. There are valve for controlling the flow of water, valve for starting or stopping the flow of water during repair and maintenance of the system, valve for preventing reversal of water, and so on. Equipment for fire protection system serves as a component or an auxiliary device applied jointly with the main equipment to allow for complete functioning of the fire protection system, including other firefighting devices such as Fire protection valve, such as Grooved coupling and fitting, Fire hose cabinet including internal equipment, Fire hose, fire extinguisher and sprinkler systems (fire sprinkler head), Flexible sprinkler and fire pump. HARN is the owner of "Guardian" fire extinguishers brand for fire extinguishers.

Firefighting system installation services; HARN also provides consulting, designing and installation services for all types of firefighting systems such as Foam fire protection system, FM-200, NOVEC 1230, CO₂, Inert Gas and Fire Alarm System in both buildings and factories as well as the petrochemical industry and power plants, in which the demand for fire extinguishing system is likely to increase in order to comply with building and factory control laws that requires a renovation on these facilities to be equipped with a standard fire protection system. It has a skillful engineering team to coordinate with customers, introduce HARN's products, and design and offer products and services to customers according to the international fire protection standards, as well as post-installation system test-run service, including fire extinguishing system inspection service in which the installation of fire extinguishing systems, fire valves and equipment will be used together with the equipment involved in various fire extinguishing systems, including foam fire extinguishing system, gas automatic fire extinguishing system, fire alarm system and video fire detection system (VFDS).

Fire suppression system products

1. **Fire Protection Valve**, it is installed in the fire protection system. The valve is UL/FM certified for fire protection system and can withstand a working pressure of not less than 175 psi (pound per square inch). Different types of valves are as follows:

OS&Y Gate Valve



Butterfly Valve



Check Valve



Ball Valve



Globe Valve



2. **Grooved Coupling and Fitting**, it is used for connecting pipes in the fire extinguishing system. It replaces the conventional pipe welding with an electric welding machine and a wire to connect the pipes. Some Grooved Couplings can also support expansion and contraction or the movement of pipes and buildings. It can especially connect the pipes up to 10 times faster than conventional pipe welding.

Coupling



Fitting



3. **Sprinkler**, it is used with the automatic fire suppression system to protect property and life, which is likely caused by fire. It also possesses an automatic fire extinguishing feature without control. It can immediately control while the fire is still small, so it stops expansion with less smoke and in a limited area. Moreover, the automatic fire suppression system gives people in the building more time to evacuate the fire.



4. **Flexible Sprinkler**, it is installed for fire sprinklers, which should be up to 10 times faster than welded installation. It can also be promptly moved, modified or leveled up and down to suit the ceiling level. So, working time is reduced and problems are eliminated.



5. **Fire Hose Cabinet and Equipment**

- Fire Hose Cabinet, it is a red cabinet for fire extinguishers, with glass in front that can be opened or broken to bring assistive devices out in case of an emergency.
- Hose Valve, it is a valve to supply water from the fire hose system to the outside.
- Hose Station, as follow;



Fire Hose Rack



Fire Hose Reel



It is used to extinguish fuels that contain carbon compounds, such as wood, paper, cloth, garbage, etc. It possesses fire extinguishing properties by having the coolness to extract heat from the fuel materials until reaching the point where it can not be ignited.

HARN owns the brand "Spark" for fire hose kits.

- Fire Department Connection, it is a device for receiving water from outside the building or the fire truck to supply into the building's fire suppression system.
- Portable Fire Extinguisher, it is a fire extinguisher installed inside or outside the building, along with other fire extinguishing systems. It can be used for primary extinguishing while the fire is starting. There are 6 main types (according to substance types contained in the fire extinguisher) as follows:



- (1) Multi-Purpose Dry Chemical, it is filled in a red tank with various types of pressurized chemical powder. It can extinguish fires: Class A, B, C, or perhaps Class D if containing special chemical powder. It is cheap and easy to buy for general areas, such as offices and homes.



- (2) Carbon Dioxide (CO₂), it is filled in red tanks. The end of the hose is shaped like a cone. The injected gas is a very cold vapor like dry ice to reduce the heat of a fire, without leaving any stains. It can extinguish fires: Class B and C, suitable for machine rooms, production lines of various industries, electrical equipment room, etc.



- (3) Water, it is filled in a stainless steel tank. It can extinguish fire: Class A, suitable for outdoor without conductive media.



- (4) Foam, it is filled in stainless steel tank. When injected, it forms a foam covering the burning fuel surface. Therefore, it can extinguish Class A and B fires, but not Class C because it is conductive. It is suitable for fire extinguishing in the industrial sector or thinner fuel, and flammable, volatile substances.



- (5) Wet Chemical-Kitchen, it is filled in a stainless steel tank for extinguishing fire: Class K. It is suitable for kitchens to extinguish fire caused by frying oil.



- (6) Halotron-1, it is filled in a red or green tank with clean substances or halotron-1 inside. When injected, it can evaporate by itself without leaving any stains. It can extinguish fire: Class A, B, C, suitable for computer rooms, clean rooms, electrical rooms, and electronic equipment storage rooms.



HARN owns the "Guardian" brand of fire extinguishers.

6. Switch

- Flow Switch, it is a device in the wet pipe fire suppression system. A signal is sent to the control panel of the fire alarm system when the device detects a flow in the pipe caused by the working of a fire sprinkler or fire hose.
- Pressure Switch, it detects pressure in the fire water pipe system. When the pressure changes, it sends a signal to the control room.
- Alarm Gong, it is a sound alarm notification in case of fire. The sound alarm is featured by using water flow as a mechanical drive.

7. Fire Pump, it is for water pumping to extinguish the fire.



Firefighting System Installation Services

HARN provides consulting services for design and installation of various fire suppression systems, such as Foam Fire Protection System, Fire Pump System, Fire Water Pipe System, Gas Automatic Fire Suppression Systems (FM-200, NOVEC 1230, CO₂, Inert Gas), and Fire Alarm System for projects in both buildings and factories, as well as petrochemical industry and power plants, which tend to require more installation of fire suppression systems in compliance with building and factory control laws and the need of renovation towards a standardized fire protection system. HARN has a team of expert engineers to coordinate with customers, recommend products, including designing and presenting products and services according to the international firefighting standards, along with the testing after fire suppression system installation and the system inspection such as using of valves, fittings, and other related devices in the fire suppression systems (Products in item 1). The details of projects for fire suppression systems are as follows:

1. **Foam Fire Protection System**, it is a system that mixes water and foam concentrate to extinguish the fire, using the principle of foaming or creating foam on flammable liquids to block oxygen from the fuel. The foam fire protection has important equipment as follows:

- **Bladder Tank**, it is used to fill foam fire extinguishers which can extinguish the fire caused by oil.



- **Foam Concentrate**

- (1) Aqueous Film Forming Foam, it is a foam solution used for extinguishing fires caused by Hydrocarbon fuels such as crude oil, gasoline, diesel, etc., which are not suitable for extinguishing fires caused by Polar Solvent fuels (a fuel that can combine with water such as thinner, alcohol).
- (2) Alcohol Resistant Aqueous Film Forming Foam, It is a foaming solution for extinguishing fires caused by hydrocarbon fuels and polar solvents.



- **Foam and water mixer and foam injection equipment**

Foam and water mixer



Foam injection equipment



2. **Gas automatic fire suppression system**, it is a fire extinguishing system in which the extinguishing agent is not conductive, with no leaving of stains, and not causing damages to equipment after the injection of a fire extinguishing agent. It is suitable for extinguishing fires: Class A, B, C, especially the electrical/electronic equipment rooms, including:

- **Automatic fire suppression system**

- (1) Carbon dioxide (CO_2)
- (2) Inert gas such as Nitrogen (N_2), Argon (Ar), Inergen ($\text{N}_2 + \text{Ar} + \text{CO}_2$), Argonite $\text{N}_2 + \text{Ar}$



- **Automatic fire suppression system FM-200**



- **Automatic fire suppression system NOVEC 1230**



3. **Fire Alarm System**, it is an alarm system in case of a fire for evacuation and firefighting to reduce the loss of life and property.

Main equipment in the system consists of Control Panel, Detectors, sound or light alarm, Manual switch.



4. **Video Fire Detection System - VFDS as a device** Detectors, It applies the principle of image analysis, whether smoke or a flame, in the detection area. This device is connected to the building's control cabinet. If there is smoke or a flame, the device sends a signal to the control cabinet for a notification.

Main equipment in the system consists of a Camera, VFDS Sever, Device Alarm box, Monitor.



For the operations of various projects, HARN has insurances with insurance companies to protect against damages that may arise from the installation of the system. It considers the nature of work in each job from time to time, such as insurance against damages to the employer's goods/property in case of installing a fire suppression system in the used areas, such as a warehouse where goods are stored, etc. Also, HARN has added protection for bodily injury to employees or agents of the employer. HARN provides regular service by checking the equipment when it expires. If the products or devices are under warranty or in the service contract. In case the products of customers have problems, HARN will coordinate with distributors abroad and consider the causes of damage together to negotiate on product insurance claims according to the product warranty agreement, under the product warranty period of approximately 1-2 years from the date that the products leave the port of the distributing country.

Air-Conditioning and Sanitary Products



Air-conditioning products are devices incorporated to main water-based air-conditioning system of large buildings, used for controlling temperature and air quality at an appropriate level. Meanwhile, sanitary products in the building engineering system include water supply system, water drainage system, ventilation system, etc. HARN distributes products that are devices in air-conditioning and sanitary systems, such as valves which open and close to control and stabilize the flow of cold water to ensure efficient functioning of the air-conditioning system and the sanitary system and are fixed with a pipeline in such system. In the sanitary and air-conditioning system, there are also other major components or auxiliary devices such as Stop valve, Pressure gauge, Thermometer (device to measure the temperature and water pressure in the system), Flow Switch, Aluminum Filter, Grooved Coupling and Fitting, Pump Room Solutions, Copper pipe and Copper fitting And Refrigerant, In addition to importing and distributing well-known international brands, HARN also owns the "Valtec" brand for valves and sanitary and air conditioning products and is the owner of "Koppar" brand for copper pipe products.

1. **Water shut-off valve**, it is used to control the flow of water, whether off-on or water flow adjustment, as follows:

- Gate Valve, it is for on-off water, with a lot of weight and space required for installation. It is suitable for use in the water pumping room and fire pump room, outside the building or general area. It is not suitable for water flow control.



- Butterfly Valve, it is for on-off water, with lightweight, less space for installation in the buildings or general area. It is not suitable for water flow control.



- Ball Valve, is used for turn on-off the water. It is suitable for small pipes and can turn on-off immediately. There is less leakage because of more valve closed contact.



- Globe Valve, it is for controlling the water flow rate to cause the dropping of water pressure between the front and the back of the valve.



- Balancing Valve, it is for balancing water in the air conditioning system to adjust the flow rate to the desired value. According to the designed state, the amount of water is adjusted to flow into the cool air of the air conditioning system.



- Automatic Pressure Independent Control Valve (PICV), it controls the on-off of cool water and the amount of water flow being sent to the cool air in the air conditioning system to send the coolness as specified.



In addition, to importing and distributing well-known foreign brands, HARN also owns the "Valtec" brand for valves and sanitation and air conditioning products.

2. **Pressure Gauge**, it is to display pressure values with its units as pound-force per square inch (PSI) and kilograms per square centimeter (kg/cm²).

- Liquid Filled Gauge, it is suitable for installation in vibration areas to reduce the impact of pressure and make the life-longer use.
- Non-Filled Gauge, it is suitable for general installation.



3. **Thermometer**, it is used to measure temperature or heat level, which can be divided into main types as follows:

- Liquid-in-Glass Thermometer, it is for general temperature measurement, with the property of expanding liquid when heated and contraction when unheated. It is expressed in Fahrenheit (F) and Celsius (C) degrees.
- BiMetal Thermometer, there are expansion properties of 2 types of metals. When heated, both types of metals expand unequally. The temperature generally ranges from -75 °C to 550 °C range.



4. **Flow Switch**, it is used to detect the flow of water, with protective properties of water pump damages due to non-flowing water. It is installed in the same direction as the flowing of water in the pipe.



5. **Aluminum Filter**, it is washable and can filter dust and dirt in the air and make cleaner ventilation. It also prevents dust and dirt from clogging in the air conditioner, with a water-washable feature.



6. **Grooved Coupling and Fitting**, It is used for connecting pipes in the air conditioning system with water to replace the conventional pipe welding, which requires an electric welding machine and a wire to connect the pipes together. Some Grooved Couplings can also accommodate expansion and contraction or the movement of pipes and buildings. It also connects pipes up to 10 times faster than conventional pipe welding.



7. **Pump Room Solutions**

8. **Copper pipes and copper fittings**, it is suitable for all types of refrigeration and air-conditioning applications. The copper pipes that HARN distributes come in many types and sizes, including straight pipes (sizes K, L, M), pancake coil, as well as various types of copper fittings. HARN owns the "Koppar" brand for copper pipe products.

KOPPAR®

KOPPAR®



COPPER TUBE and PANCAKE



COPPER FITTING



BRAZING ROD

9. **Refrigerant**, it acts as a medium for transferring heat out of the passenger compartment by absorbing heat into itself under low temperature and pressure, then transfers heat away from itself at high temperature and pressure.

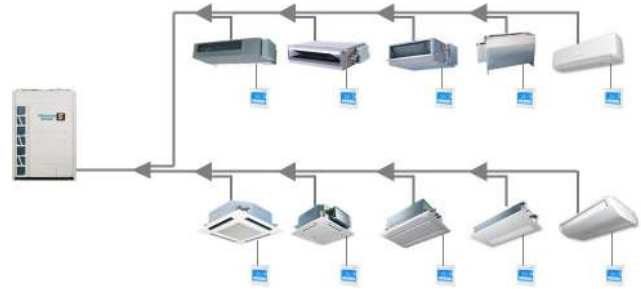
HARN owns the "uki" brand for refrigerant products.



YUKI

YUKI

10. **Refrigeration system: Variable Refrigerant Flow (VRF)**, it is an air conditioning system that can change the amount of refrigerant according to the load of cooling and the number of internal units installed. It is also a commercial air-conditioning system suitably for a limited area of installation with hot coil (outdoor unit) because 1 coil can install multiple evaporators (indoor unit). The evaporators can be separated independently, thus controlling the temperature accurately with the view of an orderly-look building.



Refrigeration Products

Multiple Rack Compressor Assembly

Refrigeration System for Vending Machine

Factory

BITZER Varipack Inverter

New Business

IoT for Refrigeration System

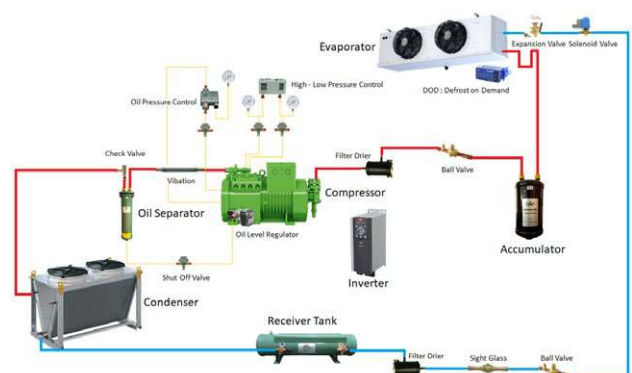
New Business

Kelvion KSC Commercial Unit Cooler

New Product

Refrigeration products are equipment used in cold storage system or goods transport system for freezing or lowering the temperature of products that require a stable temperature control. In general, a cooling system can lower the temperature to between -30°C and $+25^{\circ}\text{C}$., HARN offers a complete range of refrigeration products, consisting of Compressor, Condenser, Evaporator, Customized evaporator, Inverter, Defrost on Demand (DOD) equipment, Invertor for Compressor and valve in the refrigeration system, had available in many types, as Check-Valve, Ball-Valve, Shut off valve, Solenoid valve and Expansion-valve which is an important device used for starting or stopping the liquid flow and the cooling pressure.

HARN has also designed and produced Condensing units, both single and rack forms, by using a piston and screw-type compressor, including design and production of small cooler set for drinks vending machines by integrating all equipment and cooling concepts into one product unit that can be used for prompt installation of a cold storage system or goods transport system. It also distributes small ready-made condensing kits of "Danfos" brand for small cold rooms or convenience stores.



1. **Compressor**, is used for compressing refrigerants in the vaporized state by creating pressure through the reagent copper pipes to the evaporator, hot coil, and expansion valve. The compressor is one of the components in Condensing Unit.



2. **Condenser**, it is a high pressure refrigerant condensing device that changes the liquid state from vapor to liquid and takes the heat out of the liquid by Air Cooled Condenser seen from outside of the evaporator and Watercooled-Condenser, using water to cool the liquid.



3. **Evaporator**, it is a low pressure refrigerant evaporation device that changes the liquid state from liquid to vapor by bringing the cooling in the evaporator into the room to cool the room temperature with a fan, seen as the installed hanging on the ceiling in the room.



4. **Customized Evaporator**, it is an evaporator that can be manufactured and designed to match the application very well and support a wide range of applications from the general refrigeration industry to the specific refrigeration industry that requires durable equipment of the highest safety, such as the industry related to chemicals and flammable materials, with a variety of protection, whether it is chemical corrosion resistant, exploding protection (ATEX), germ protection, etc.



5. **Refrigeration control valves include:**

- Expansion Valve, it is used to reduce the pressure of the refrigerant in the evaporator to control the evaporation temperature in evaporator valves designed for specific applications for temperature work, Air Condition, Cold Room and Freezer Room.



- Electronic Expansion Valve, it is for reducing the pressure of refrigerant in the evaporator, controlled by an electric signal of high accuracy to increase cooling capacity and provide ease of use, with added value for the cooling system that is able to work in all temperature ranges.



- Solenoid Valve, it is designed for specific applications in refrigeration plants with all voltages and frequency ranges. Valves are also be designed according to customer requirements.



- Shut-off Valve, it is a manual on-off valve designed for installation in the refrigerant pipes on the liquid, suction, and hot gas sides of the refrigeration system. Valves can be connected to copper pipes by welding or screwing.



- Ball Valve, it is a manual on-off valve that can be operated in both directions as required. Ball valves are designed for installation in pipes with high gasket density, making less loss of pressure. It has the maximum refrigerant flow when fully opened. Ball Valve is also designed for operations over wide temperature ranges and approved for use with any fluorinated refrigerants. Standard ball valves may be used in high pressure refrigerant applications, including R410A and CO₂ work with pressures up to 90 bar (1300 psig).

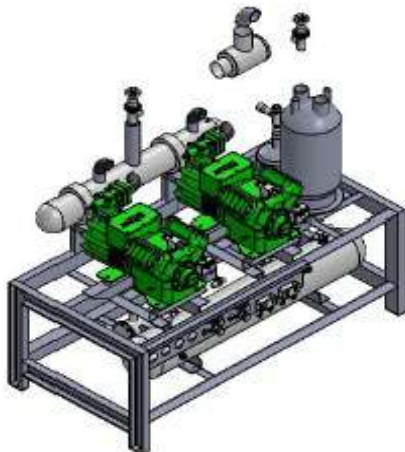
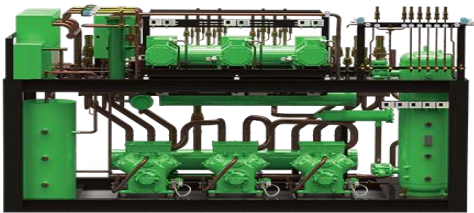


HARN owns the “Blue Ice” brand for its refrigeration equipment products, including refrigeration valves, cooling devices, desiccant devices, pressure gauges, etc.



6. **Condensing units**, HARN designs and manufactures condensing units according to European standards for long-lasting durability, ease of service, and easy installation, which can be chosen in a variety of temperatures. Ideally for freezer rooms, cold storage rooms, hypermarkets, supermarkets, convenience stores, refrigeration industry, air conditioning system, or areas for economical and efficient room temperatures, available from -30°C to +25°C and with cooling capacities from 4 to 112 kW or 2 to 50 hp, while moving towards data systems with Industrial Internet of Thing (IIOT) as follow:

- Multi Compressor Rack (Screw and Piston Compressor), it is a combination of several compressors in the same set to reduce energy costs, save installation expenses and time, lower maintenance costs, and increase longer life of use, and have the greater cooling capacity with a wide range of temperatures. It is suitable for industrial and commercial businesses, such as department stores, distribution centers, etc.



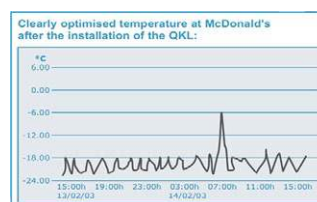
- Control equipment unit, it is for protection and energy saving to reduce electricity costs, as well as remind and prevent problems in the cooling system, lower maintenance costs, and create added value.



- The IOT communication system connection kit connects the entire system to know the working status. It alerts and displays the system status via Bluetooth wireless system, speeding up problem analysis, reducing maintenance costs, and creating added value.



7. **Defrost on Demand (DOD)**, it is suitable for all kinds of cold rooms to store products. The microprocessor in the DOD helps to control the temperature with power management and humidity level in the air, including the defrosting frequency in accordance with the actual working conditions without any adjustments with difficulties just as other brands of control devices, making it easy to implement with a precise intelligent defrosting control system, as well as the use of the remaining energy in defrosting (Latent Energy) for usefulness. This results in savings of 15 - 25% in energy costs.



8. **INVERTER**, it helps to control the speed of the compressor to work continuously according to actual cooling load conditions with continuous work control to improve cooling efficiency and help reduce temperature changes in the cooling areas, as well as make the temperature at the cooling point accurate.

As a result, the set temperature is consistent to make the goods stored in good quality and maintain freshness for a long time, while saving up to 40% and extending the life-long use of the compressor. While working, the compressor does not suffer any vibrations.



- Reduce the amount of refrigerant filling up to 35%
- Able to be installed both indoors and outdoors
- Use several refrigerants in one model
- Work at outdoor temperature up to 48 degrees Celsius
- Reduce time for service and maintenance
- Corrosion resistant of Micro channel coil and panel

9. **Danfoss Condensing units**, It is a small prefabricated condensing unit, with a cooling capacity from 0.7 to 11 kW in the temperature range of +15 to -15°C and 0.6 to 6 kW in the temperature range of -10 to -40°C. It is suitable for small cold rooms, prefabricated cold rooms, and freezer rooms in restaurants with limited space. It is designed with maximum cooling efficiency, compact shape, low noise, lightweight, and is easy for installation and maintenance.



10. **Small refrigeration kit for beverage vending machines**, it is compact and can be used with a small refrigerator or automatic beverage vending machine. It is designed to provide maximum cooling efficiency, with durability to cover all functions and energy saving as important in the design.



Digital Printing Products and 3D Medical System



HARN distributes Digital Printing Products and 3D Medical System such as Continuous InkJet Printer (CIJ), laser printer, Thermal Transfer printer and Label Sticker Printer, Digital UV Inkjet, Packaging printer and other packaging equipment, Printer equipment and various types of consumables including 3D Printer etc. Details are as follows:

- **Digital printing product group for printing of manufacture/ expiry dates and lot number**, consists of machine for printer texts on packages, feeder, printing equipment, various types of supplies, etc. HARN's products are coding printers for printer manufacture/expiry dates and texts such as lot numbers as well as graphics, barcode, 2D Datamatrix, QR code, prize drawing code numbers on such surfaces as plastic bottle packaging, glass bottle, metal/aluminum can, paper box, glossy paper, plastic envelope, aluminum foil, plastic cup and others. It employs technologies such as inkless laser coding, non-contact inkjet printing, printing with ink ribbon, printing with ink cartridge, etc.
- **Digital printing product group for 3D printing**, distributes and provides digital file printing service and packaging. For the Thailand 4.0 medical industry, i.e., conversion of MRI/CT scan file into 3D PDF file to have higher quality images that enable users to have comprehensive views of normal and abnormal spots and printing of organ model from MRI/CT scan which can well support education, diagnose, preoperative planning, included medical research and development with digital technology.
- **Digital UV inkjet printer product group**, for printer of label stickers with digital technology to generate clear, sharp, bright-colored, superior quality texts and images with high speed and at lower cost for label sticker manufacturers.
- **After-sales services**, for all product groups distributed to end-users encompass advice and consultancy for selection of product specifications that meet requirements, installation of the machines, training, and repair and maintenance, as well as insurance, etc.

Digital Printing Products

1. **Continuous InkJet Printer (CIJ)**, it is used to print the manufacture date, expiration date, and lot number. It can also be applied to almost all surfaces such as plastic, metal, glass, mirror, aluminum, film, paper, wood, and synthetic wood, including smooth, rough, or curved surfaces, making it a highly popular and multipurpose printing technology. It is suitable for automated production lines, semi-automatic or installed with other machines particularly, the printer has a system to prevent clogged nozzles, which can be adaptable to all formats with many ink colors to choose, various properties, low printing costs, energy saving, and environmental friendly.



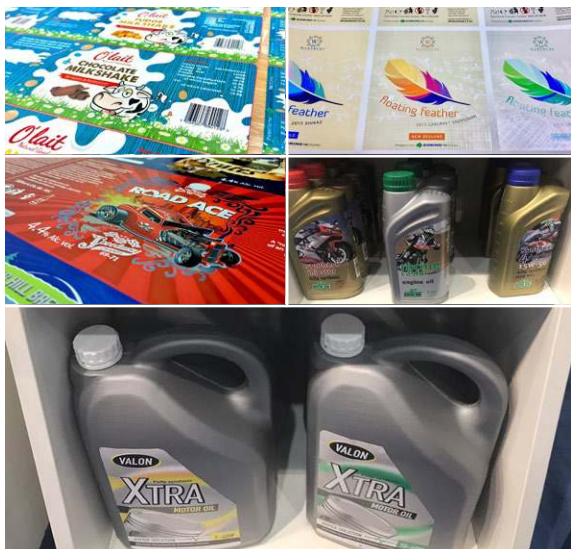
2. **Laser Printer**, it is used to print the date of manufacture. Expiration date, and lot number, etc. on plastic, glass, paper, and sticker products. It is a laser light system using heat to react with printing surfaces as numbers / letters without using ink. It can work automatically by entering the numbers or letters on the control screen and updated according to the real date and time. It has the advantage of saving costs, high speed, production efficiency, less burden of care and maintenance.



3. **Thermal Transfer Printer**, It is used to print the date of manufacture, expiration date, lot number, logo, barcode, 2D Datamatrix, QR Code, etc., onto film, plastic, paper of smooth surface. Thermal Transfer printer uses the heat of the print head to melt ink for printing numbers, letters on the area size up to 128 mm. with detailed text accurately and clearly. It can also specify the text to be printed on the control screen and update it according to the real-time and date. Moreover, it can be installed for all types of sachet packing machines. Particularly, it is a clean technology, no volatile matters, and high quality, sharp, easy to read, and beautiful. It is suitable for large volumes of data with cost-effectiveness and high speed.



4. **Digital UV Inkjet Printer**, label stickers can be printed with the digital technology of high quality, sharp, beautiful, and bright colors at high speed on various materials, such as paper, plastic, foil, and laminate on standard materials from the factory, with good adhesion performance. Color is durable, not easy to fade, which can help to reduce costs for label sticker manufacturers. It can also add special patterns to draw attention to the products, such as embossing on the surface, variable Information printing in numbers, letters, graphics, Barcode, QR Code, 2D Datamatrix, etc.

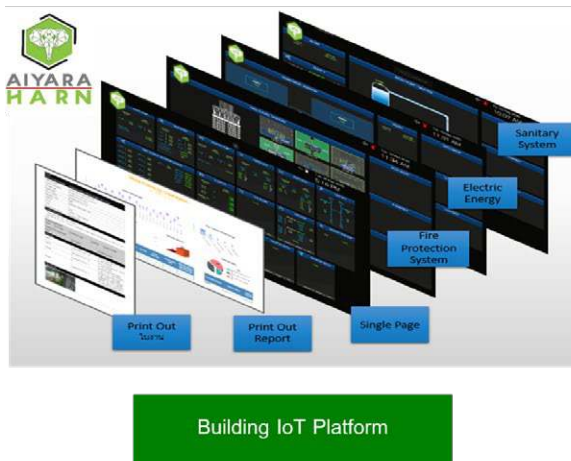


5. **3D Printer**, it is a printer for creating models or forming parts according to the customer's specific designs by printing the workpieces with high-efficiency and high-quality resin to create a model. The workpiece surface is smooth and sharp at every point. It is suitable for printing applications, such as product packaging design, dental, hearing aids, jewelry, and automotive, etc. HARN currently sells and provides 3D printing services for industrial and general customers who want to create prototypes that they need. It has also added a new service for the medical industry in the 4.0 era to convert files from a scanner type of MRI/CT to a 3D PDF file to display high-quality images to clearly indicate normal or abnormal areas. It also includes printing organ models from MRI/CT files to support education, diagnosis, preoperative planning, and digital medical research and development.



6. **Packaging printers and other packaging equipment**, such as letter stencils for printing on the sides of large packages which are not suitable for the conveying belts, Hot Foil Printer, roller type printer, high speed labeling machine, Print & Apply Labeler, and a set of date stamps, etc.
7. **Printing equipment and various types of consumables**, including printing ink, ink mixture, ink remover, ink ribbon, resin solution, filter kit, equipment spare parts for manual printer, roller and foil sets to print production date, etc.

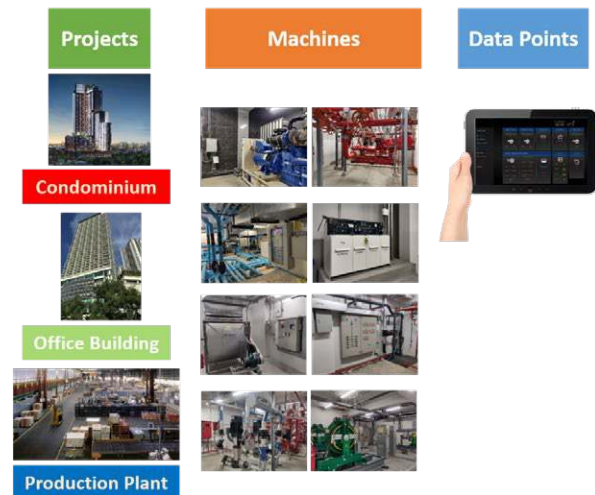
Internet of Things Products (IoT)



Aiyarahan Company Limited (“Subsidiary”) operates an online utility tracking system business to help building technicians and project managers monitor their operations of the building assembly system and the historical data so they can reduce their travel time and contact with the job site. In the past year, Aiyarahan installed a total of 8 locations in Bangkok and other provinces. Also, it continually builds new business related to Building Automation System (BAS) for the intelligence building control system to connect between users and the outside world. The main customers include those in real estate and condominium businesses, as well as factories. Before its joint venture with HARN, it used to develop IoT solutions for condominiums, office buildings, middle-class manufacturing plants, with tools and equipment for processing into large amounts of data.

Aiyarahan has witnessed a high level of technological advances in Thailand. The Internet of Things (IoT) is one of the keys to getting information automatically. Thailand has begun to apply it as the quality monitoring systems and the data analysis for any trends. The accurate information can help the business and the industrial sectors to analyze, plan, and forecast in advance. Aiyarahan expects that the Internet of Things will reach a higher demand this year.

In the past, the online utility tracking system consisted of many involved working systems, which can cause the installation to take a long time and high costs. The system is therefore not suitable for finished buildings. For the trend in 2022, Aiyarahan is committed to developing a specific utility tracking system and increasing the ability to communicate wirelessly with easy installation and reasonable prices to reach more customers.



Products Insurance

HARN ensures the damages or defectives of products following the insurance conditions of the products that HARN distributes or installs for the customers for 1 year or 6 months for the machines and the spare parts, respectively. The products of HARN had been insured already by the suppliers for at least 1 year and 6 months as well.

For project sales, after completion of installation work, HARN ensures the installed products under the conditions for 1 year where the suppliers also ensure the products to HARN for 1 year as well and may consider purchasing additional warranty from the seller in case the customer wants a longer warranty.

Warehouses and Distributions

HARN has three warehouses: as follow;

The main warehouse, is located at 888/14-16 Moo.21, Bang Phli Yai, Bang Phli, Samut Prakan 10540. The rental area covers 6,374.23 square meters which HARN owns the ownership to store valve products and other products in Fire protection system, Air-Conditioning system, Sanitary system, Refrigeration system and Digital printing system. This place is also used to assembly equipment's on a made to order basic.

The 2nd warehouse, is located at 509, Soi Soonvijai 4, Bang Kapi, Huay Kwang, Bangkok 10310. Is rented from a person related with HARN to store products, assembly and maintenance of printers and equipment in digital printing system. This place is also used to assembly equipment's on a made to order basic.

The 3rd warehouse, is located at 38/43, Moo 4, Lam Luk Ka Road, Lam Luk Ka, Lam Luk Ka, Pathum Thani 12150. This place covers 80 square meters and is rented from an outsider who provides the warehouse service and is not involved with HARN. It is used to keep hazardous chemicals that purchased from manufacturer and wait to distribute to customer or use to install the fire protection system for customer.

HARN distributes products from warehouses to customers (shipping cost included in product price) by HARN trucks and other delivery trucks hired from the transportation operators outside who are not involved with HARN. Now, operators are selected and registered as the approved vendor list (AVL) by our HARN. We also have insurance for products kept at warehouses to prevent damage or accident during storing and operating in case of fire, lightning strikes, earthquake, storm, flood, and other accidents in warehouses. Now, the insurance covers assets at the Head Office and products at warehouses. As of 31 December, 2021³⁾ our HARN have insurance on product shipping domestically for high value purchasing to prevent loss or damage from accident, during lifting product to the delivery truck and transporting on truck. HARN is an only beneficiary and from 2012 until present we never claim damage from a serious accident except for some minor accidents from moving products at warehouses, costing less than 10,000 Baht in each time.

Processes of storing products in warehouses and distributing to customers

Processes of receiving products from manufacturers

1. When receives an inspection and acceptance note from a purchasing division, a warehouse staff will prepare a bar code and space to store product.
2. When product reaches warehouse, the staff will inspect product as specified by the purchasing division, then attach a bar code, and make an acknowledgement receipt.
3. The warehouse staff who works for storing products will inspect product type, quality, quantity, bar code, and acknowledgement receipt to check correctness. Then, the staff will store products in warehouse, placing products came first outside and products came later inside for convenience in next distribution, record product stocks and send other details to the relating divisions including the purchasing and accounting divisions.

4. In case of incorrect purchasing and product defect/damage, the warehouse staff will report to the purchasing division in order to examine as well as inform manufactures, and/or the insurance company.

Processes of withdrawing products to deliver to customers

1. A delivery staff makes a picking list and submits to the warehouse staff, and later prepares to deliver products to customers. The staff also check list of customers, product quantity, and delivery place to plan a logistic route and coordinate with the financial division to obtain a delivery document.
2. The delivery staff makes a delivery control note to record lists in each logistic route within 9.00 a.m. of every working day. So, the sales division will have data to inform customer about the estimated delivery time.
3. In case of emergency delivery or appointment for advanced shipping, the staff will receive a delivery note from salesperson and coordinate with the transportation operators approved by the company. The staff will inform the transportation operators about time to collect products at warehouses, time and route to deliver products to customers and make a delivery control note.
4. The delivery staff will submit the delivery documents and delivery control note to the truck driver/ delivery man who will check products type, product quantity, and details as specified in the delivery documents. If it is correct, the truck driver/ delivery man will sign their names as a recipient on a copy. Then, the products will be moved to the delivery truck and distributed along the logistic route. The delivery man will clarify products and submit the shipping documents to customer. The customer signs as a recipient on delivery documents. The staff will take documents including an original invoice and tax invoice back from customer and later return to the delivery staff who compiles all documents and later submit to the financial division to monitor payment complying with financial and accounting regulation.

³⁾ The company will determine a sum assured in each year according to asset values from the latest financial budget before having insurance.

Quality and standard of the products

HARN emphasizes on the quality and the standard of the distributed products so that the customers can be confident in the quality and the safety of the products that follows the terms and conditions agreed upon with HARN. The products sold by HARN are mostly certified by the UL (Underwriters Laboratories)⁴⁾ and/or FM (Factory Mutual)⁵⁾ and/or BS (British Standard)⁶⁾ and/or TIS (Thai Industrial Standards)⁷⁾ and/or EN (European Standard) and/or Vds Standard⁸⁾. As for the Company's OEM, these are produced under BS or ASTM International, including all aspects of the Company's operation is certified by the ISO 9001:2015.

1.2.3 Marketing and Competition

HARN has engaged in import and distribution of Fire Suppression products, Air-conditioning and Sanitary products, Refrigeration products and Digital Printing products for industrial use, as well as provision of consulting, designing and installation services for fire protection systems in projects. Most of its products, which are relevant to building engineering such as fire protection, air-conditioning, sanitary and cooling systems and account for more than 50% of its total sales revenues, are supplied mainly to contractors of building construction projects, government sector projects or factory buildings, including office buildings, condominiums, hospitals, shopping malls, electric trains, industrial plants, cold storages, and so on. As such, the Company's business operation relates directly to the construction industry which grows in tandem with the country's economy, or gross domestic product (GDP), but is prone to more volatility. That is, when the economy begins to recover, construction of various properties will expand at a greater and more rapid pace, but in the wake of economic slowdown it will decelerate faster and in line with the permitted areas of construction in each year. Nevertheless, HARN has the ability to distribute business risks, which is demonstrated by the Refrigeration business and Digital Printing business being correlated to the food and packaging industry, which is different from the fire extinguishing system business and the air-conditioning business.

Thai Economy in 2021

The Thai economy in the 3rd quarter of 2021 adapt declined by 0.3% compared to the expansion in the previous quarter by 7.6% (%YoY). When the results of the quarter are adjusted, the Thai economy in the 3rd quarter of 2021 decreased by 1.1 percent from the 2nd quarter of 2021 (QoQ_SA). In the first 9 months of 2021, the Thai economy expanded by 1.3%.

The area of expenditures, private consumption while the public investment declined. Whereas exporting goods, private investment, and government expenditures expanded.

The area of production, industrial production, accommodation and food service sectors, construction, transportation and storage, and electricity and gas sectors declined. The wholesale, retail, and repair sectors expanded. Also, the agricultural sectors expanded at an accelerated rate.

The trend of the Thai economy in 2021; is expected to expansion by 1.2%, improving slowly from a 6.1 percent declined in 2020, inflation rate is at 1.2% and the current account deficit is at 2.5% of GDP.

Thai trend economy in 2022

is expected to expand between 3.5-4.5% with the support from:

- 1) the recovery of domestic demand and the manufacturing sector according to the Covid-19 outbreak with a tendency to gradually decrease;
- 2) the slow recovery of the international tourism sector under the government's open country policy;
- 3) the desirable expansion of exported products;
- 4) the drive of the government's budget disbursement; and
- 5) the low level of the expansion.

Regarding the value of merchandise exports in US dollars, the Electronic Government Agency is expected to grow by 4.9 percent. Consumption and private investment are expected to grow by 4.3 percent and 4.2 percent, respectively. The average general inflation is expected to be in the range of 0.9 - 1.9 percent, and the current account is expected to surplus at 1.0 percent of GDP. The economic policy management issues in 2022 should focus on:

⁴⁾ Underwriters Laboratories (UL), safety standards by the Underwriters' Laboratories Inc. (UL), non-profit independent organization from the USA. Responsible in testing and prepares the safety standards and safety insurance of the products.

⁵⁾ Factory Mutual (FM), responsible in testing protective and fire extinguisher equipment of the insurance group in the USA.

⁶⁾ British Standard (BS), safety standards by the British Standard Institution (BSI)

⁷⁾ Thai Industrial Standards (TIS), industrial standards, products guaranteed by the Thai Industrial Standard Institute.

⁸⁾ VdS is an independent institution that tests fire prevention and extinguishing equipment That guarantees safety And reliability in the field of fire protection and safety Germany



- 1) Preventing and controlling the pandemic situation in the country to be within a limited range by:
 - Implementing preventive and control measures;
 - Expediting the distribution of vaccines for sufficient and widespread vaccines;
 - Controlling risk activities of spreading the disease; and
 - Preparing a plan for the return of the pandemic.
- 2) Supporting the recovery of the business sectors along with taking care of the economic sectors that still has limitations in recovery by:
 - Accelerating and following up different measures, both the fiscal and financial aspects that have already been carried out, in order to reach the target group effectively and consider additional measures for groups that still have limited access to aid measures;
 - Considering additional labor aid measures for the economic sectors that still have limitations in recovery; and
 - Carrying out public relations activities to publicize government measures for people and businesses to understand and be able to use them effectively.
- 3) Maintaining the momentum of household spending and domestic tourism by:
 - Monitoring and evaluating various measures that have already been done and are in the process along with adjusting the measures and taking additional measures appropriately to the economic situation, taking into account the risks that still exist in the future;
 - Overseeing and solving household debt problems; and
 - Taking care of farmers' income.
- 4) Driving the merchandise exports by:
 - Driving exports of key products to major markets that have an obvious economic recovery. and creating new markets for potential products;
 - Developing agricultural products, food and industrial products;
 - Solving problems that hinder the transportation and logistics system;
 - Taking advantage of the Regional Comprehensive Economic Partnership (RCEP) framework, coupled with expediting the current FTA negotiations; and
 - Preventing the risk from the exchange rate fluctuations and rising production costs.
- 5) Promoting private investment by:
 - Boosting the confidence among investors to control the spread of the disease within the country;
 - Accelerating the process for entrepreneurs who have been

approved and issuing BOI certificates during 2018-2020 to encourage investments;

- Solving any problems that foreign investors and entrepreneurs that they are obstacles to investment and business operation such as labor shortage in manufacturing;
 - Implementing proactive and facilitating investment promotion measures to attract investors in the targeted industries;
 - Promoting investment in the Eastern Economic Corridor (EEC) in various special economic development zones;
 - Driving investment in developing economic areas and important transportation infrastructure; and
 - Developing high-skilled labor force to accommodate industries with a strong focus on technology and innovation, especially in new targeted industries, forming an important transportation base; and
- 6) Driving public spending and investment; and
 - 7) Monitoring and surveillance the volatility of the foreign economic sectors that tend to affect the economy's stability and maintain political stability.

Fire Extinguisher, Air-conditioning and Sanitary Business Marketing

The market condition of the fire extinguishing and air conditioning system business, in 2021, there is still a drop in sales about 17% from last year. Since the covid-19 has been continually mutating making, customers have no confidence and are not certain when they will be able to return to normal. In addition, there has been an increase in the price of construction materials such as steel, wires, copper pipes, causing many project contractors to appraise their costs lower than the actual trading price in the current market. As a result, the projects have been delayed more than last year and impacted the overall economy of the construction market. Many customers who are contractors for fire suppression and air-conditioning systems encounter more problems as mentioned above with a decrease in sales number from the previous years. However, in 2021, the company still has products delivered to many large projects. There is a push to sell products and new innovation that responds to the contractors' work of installation projects to be able to work faster and easier with fewer workers. Moreover, the company has added products in the air conditioning system, a VRF system product, to help increase sales. According to the COVID-19 mutation to omicron, we can see that it is less violent. It is, therefore, expected that the situation in 2022 will begin to improve accordingly.

Air Conditioning System and Fire Extinguisher Equipment

The overall image of 2021, the total revenue of both systems reduced from 2020 about 17% because the Covid-19 has not improved, The overall image of 2021, the total revenue of both systems reduced from 2020 about 17% because the Covid-19 has not improved, as a result, the construction of many projects was delayed, especially the construction of condominiums and factories, thus reducing the demand for fire-fighting equipment. However, we notice that some products have increased the sales number. For example, the Flexible Sprinkler, a product in the fire suppression system, has increased sales by 40% due to the COVID-19 situation where customers need faster installation and fewer people to install. Therefore, such product is popular and has increased sales. As for the air conditioning system, we have added more VRF products to sell. In 2021, we had sales from VRF products of more than 4 million baht. In this regard, we have forecast the market in 2022 that the public utility sector, hospital sector, and industrial plant sector are likely to return to expansion, and from the market trend towards the end of 2021, it was found that there were more shipments than the middle of the year and there was an increase in purchase orders. Therefore, it is a good sign that the situation in 2022 will be better than 2021. In addition, HARN has introduced new products very often to the market, such as the Flexible Sprinkler and VRF products, etc., which help customers who are contractors to install work faster and save labor costs. However, we need to monitor the COVID-19 situation closely as it is the main factor that will affect the overall industry in the future. However, the monitoring of COVID-19, which be the main factor affects the industry, should be continued.

Extinguisher System for Industrial Projects

Overall, in 2021, sales decreased about 2.4% compared to the previous year, due to the Covid-19 cause a break event, postpone projects and delivery from many customers

It is expected that the sales will increase in 2022 from the accrued revenue of about 90 million baht from 2021, which the revenue recognition is expected to be about 65-70 million baht in 2022 and there is a high chance that there will be many more jobs from auctions. The fire suppression inspection services have good growth prospects from the existing customer base in 2021. The sales performance has increased by 33% from 2020, and new service customers that will increase after the end of the project warranty period that HARN has installed.

Extinguisher System for Petrochemical and Power Plant Projects

The overall sales of Petrochemical and Power Plant Projects decreased by 44% in 2021 due to the extension of the construction period causing a delay in revenue recognition due to the COVID-19. The proportion of sales in the part that the products have not yet been delivered is approximately 46 million baht. There is also project work in progress to be

completed within the 1st quarter. It is also expected that the large-scale project auctioned in 2021 will be announced in 2022, which HARN has a high chance to win the auction. The total work value is approximately 50-60 million baht from the petrochemical industry, including improvements, additions and expansions of the power plant section of the additional fire suppression system in the next phase.

Competition

Importing and distributing fire extinguisher products

Has medium level of competition from existing competitors. This is because the products are concerned with safety; therefore, the equipment must be of good quality with certified international standards and reliable distributors. The core competitors of the Company are companies that distributes the products from overseas in which the numbers are not extremely high due to limited recognition of the brands at the global level. Also, most of the producers have the policy of dealing with only one distributor or appoint few representatives in order to prevent inside competitions between the distributors. However, there are about 4-5 direct competitor who imports fire extinguisher products for the buildings and factories market. In some cases of the business operation, the competitors may become the trade partners in buying products from HARN as well. When considering the market share of HARN by comparing with the revenue of the 3 main competitors who holds approximately 80% of the market share, HARN owns about 25% of the market share. Our fire protection product sales presumably occupy 10% of total industrial market share of fire protection products in general.

Servicing contract projects, designing, supplying, installing and testing the fire extinguisher system

Has few competitors. This is because installing the fire extinguisher system requires specialize skills of design engineer. The main competitors are the group that distributes and contract the fire engineering projects. This business still has the potential to grow since the government had issued the stricter law to prevent fire including the renovation of buildings and factories in accordance with the Thailand Building Control Act B.E. 2535 (1992), resulting in higher demands for goods and services relating to the fire extinguisher system.

Importing and distributing products for sanitary and air conditioning system

In the past year, the competition remains fierce. However, due to the large market size and the large diversity of HARN products as well as product acceptance by customers, as well as there is an increase in the searches for products in the group of sanitary and air-conditioning system, therefore a continued growth is anticipated with greater distribution channels to the customers. HARN has the advantage of selling various products that are well known in the market and can reach both general customers and contractors equally.

Refrigeration System Business

Marketing

As for the refrigeration market in 2021, the overall competition in the cooling system business showed high competitions in terms of prices, product quality and the availability of the products for distribution. The products that were sold the most in the past year were namely small, condensing units, rack compressor and small refrigeration kit, which the customers have confidence in the design and manufacture of products from HARN in the current refrigeration market. In the midst of high competition domestic and abroad and in a situation where there are not many large projects nowadays, many distributors have turned to focus on prefabricated condensing units that can meet the needs of small to medium sized cold rooms since they can be delivered and installed quickly, include import cheaper and better-quality products to compete in the market, which intensifies the competition. Expansion projects on the production capacity of various industrial factory operators do not show plans to invest but instead turned to increasing the efficiency of earning from existing resources. The key markets and relevant to the refrigeration business are.

1. Processed Meat Industry

Thailand's chicken meat production ranks at the 8th highest of the world in 2020 which the production was at 2.50 million tons, increase of about 6% from 2019, due to domestic and international consumer demand. The domestic consumption of chicken meat is 1.6 million tons, or about 62% of the total broiler production. It is mainly consumed in the form of fresh slaughtered chicken. The remaining broiler production will be used as raw material in the processed and frozen chicken industry. The main market is the export market. Thailand has the 4th largest export value of such products in the world. In 2021, the export value of chicken from Thailand decreased slightly from the previous year due to the COVID-19 crisis and the container shortage, including the cost of feed and labor costs which have risen a lot. The main export markets are still Japan, the United Kingdom, China, the Netherlands and South Korea, accounting for 86.4 percent of the total export value.

Important export market

Country	Value : Million Baht		Rate of Expansion : %		Proportion : %	
	2020	2021	2020	2021	2020	2021
	(Jan.-Dec.)	(Jan.-Nov.)	(Jan.-Dec.)	(Jan.-Nov.)	(Jan.-Dec.)	(Jan.-Nov.)
1. Japan	54,152.97	48,618.90	-0.78	-3.09	52.12	52.45
2. United Kingdom	16,842.94	13,912.19	-12.19	-11.19	16.21	15.01
3. China	11,100.90	9,550.86	61.69	-8.15	10.68	10.30
4. Netherlands	3,901.88	4,308.79	-21.05	21.70	3.76	4.65
5. South Korea	3,905.13	3,693.56	-20.69	4.68	3.76	3.98
6. Singapore	3,399.22	2,615.50	33.09	-18.16	3.27	2.82
7. Malaysia	2,478.01	2,554.94	0.25	13.12	2.39	2.76
8. Hong Kong	2,457.39	2,177.31	21.28	-2.45	2.37	2.35
9. Germany	1,474.09	1,124.16	-16.13	-17.78	1.42	1.21
10. Ireland	909.44	1,085.92	-8.54	31.94	0.88	1.17
Total 10 Country	100,621.97	89,642.13	0.32	-3.79	96.85	96.71
Other	3,272.60	3,052.98	-30.83	1.88	3.15	3.29
Total value	103.89457	92,695.11	-1.08	-3.62	100.00	100.00

Source: Information and Communication Technology Center Office of the Permanent Secretary, Ministry of Commerce with cooperation from the Customs Department

The amount of chilled, frozen, and processed chicken meat between 2021 - 2023 has a growth tendency at 3 - 5% per year according to the purchasing power that is slowly recovering. The supporting factor for the demand increases on chicken meat domestically is due to the low-fat content in chicken meat and the price is lower than other types of meat. While the growth of export market for chicken meat is due to the strong customer base such as Japan and China, when combined with the confidence of foreigners to the standard of Thailand's chicken production including the Free Trade Agreement (FTA) between Thailand and trading partner countries which contributes to Thailand having the advantage which enhances the competitive edge of this product on the global market.

From 2021 to 2023, the global demand for chicken meat is expected to increase by 1.0% per year to 135 million tons from 131 million tons in 2020, partly due to the health-conscious trend that has led to increased demand for chicken meat, because it contains lower fat than pork and beef. The periodic epidemic of bird flu and African swine cholera caused the affected chicken meat producing and exporting countries (such as China, Brazil, Europe, and the US) to delay their economic recovery time. The African swine cholera in China and Vietnam took more than three years for the producers to be able to reach the supply level of the pre-epidemic time. While the production process of Thai chicken products meets international standards and free from contamination of epidemic both from human (Covid-19) and animal disease (HPAI and ASF) and therefore recognized for its quality. As a result, the demand for imported chicken from Thailand is likely to increase. The Free Trade Agreement (FTA) between Thailand and the trading partner countries also contributes to Thailand having the advantage and increased competitive edge. As in 2019, Thailand has total exports of livestock products to FTA counterparties of 3.3 billion dollar accounted for up to 82% of total livestock exports. The export value of fresh and processed chicken meat under the FTA increased by 15% and 7%, respectively. In the next phase, the Thai Department of Trade Negotiations said it would negotiate the FTA to open additional markets for livestock products such as Turkey, Pakistan, Sri Lanka, UK, and the European Union. Therefore, it is expected that the export value of Thai chicken products will continue to grow.

2. Retailing business

The overall image of Thai retail trade in 2021 is not optimistic. According to the purchasing power of consumers that have not yet recovered from the impact of the widespread epidemic as well as the high burden of household debt, the access to COVID-19-related vaccines have been increased. The number of infections is tended to decline at the end of last year although the retail business faces a lot of pressure from the government disease control standards. As a result, the government an to loosen the Covid-19 restrictions, causing the consumers to start spending more money but still in limited categories focusing on consumer products necessary in daily life, such as food and beverages and necessary personal items.

The strategy of retailers in the past year focuses on continual adjustment to expand customer base by accelerating business expansion into online platforms, including expanding branches in neighboring countries to create additional customer groups in the future.

Discount store / Hypermarket: ypermarkets and discounts stores that offer a collection of multiple product categories in one place has been greatly affected in the past year. Most of the target customers are middle-class or less. The price competition within the industry is still intense. We also have to compete with other retailers, such as convenience stores and supermarkets. The number of consumers using the services at the hypermarkets had declined markedly at the beginning of 2021 due to the situation of the epidemic of Covid-19 and the concerns of consumers who will use the service. As a result, the sales of these business groups are greatly reduced. However, at the end of 2021, after the restrictions were loosened, the sales of these businesses gradually improved from the sale of consumer goods that are essential to the household.

Supermarket: The supermarket business, where most of the target customers have moderate to high incomes in 2021, there is a decrease rate of about 6% and the products that generate sales for this group of businesses are limited to products that are necessary for daily living only. This is because the consumers still buy only necessities to save costs. Therefore, the sales of luxury goods have significantly been reduced. The necessary products are still close to their normal state but the frequency that consumers buy products has decreased due to the concerns about the pandemic and deteriorating purchasing power. Moreover, it is also affected by a sharp drop in the number of foreign tourists due to the inability to travel, causing the sales of those types of souvenirs to miss. However, many entrepreneurs have accelerated their strategy to offer online ordering and pre-ordering and self-pickup to create convenience and safety for the customers.

Convenience store / Minimart: In 2021, there is a lower growth rate of about 6.6%. In the past, these convenience stores have been directly affected by the situation of Covid-19 and by the government's restrictions which had prevented the stores from opening 24 hours a day. This directly affects the sales but still, there are more branches opening to reach the community for easier access for the consumers. Yet, at the same time, the expansion of branches also resulted in higher competition. This is because convenience store entrepreneurs tend to sell the same products. Thus, there is not much difference. In addition, many entrepreneurs have offered delivery services directly to the customers' houses to respond to the changing consumer behaviors.

3. Compact refrigeration business group

To distribute products to the consumer's hand, and with the advancement of technology, the distribution of products is not limited to general stores only. Vending machines are one of the channels developed from technology, which the automatic kiosk can distribute products to make it easier to reach consumers and able to meet the needs of both consumers and business owners with low investment, lower rental fee and requires less space. It can be easily added into high-priced locations, making it accessible to all areas. It transforms small space into a valuable retail space that can distribute product quickly, conveniently and round the clock.

Many types of products in a vending machine must be stored in a low temperature cabinet so that the products can remain their freshness, thus a small cooler is required to maintain the product temperature. This is the market opportunity to expand the refrigeration business in the vending machine group, which the trend is currently growing. There are around 21,100 machines presently and it is expected that from now on, the level of expansion will skyrocket from the ability to provide greater convenience. In particular, the payment for the products is not limited to coins or banknotes, but various types of payments are accepted such as QR code, e-wallet, and credit-debit card. Such factor contributes to the expansion of compact refrigeration business into vending machine market as the new market that has a potential to continue growing

Competition

Importing and distributing products for refrigeration system

In 2021, the overall domestic market was still highly competitive in terms of product prices and speed of delivery. However, many distributors have increased the product price, but also imported lower-priced goods from China to add more options for the customers to be able to reduce the cost of building a cold room. In addition, the products related to IoT systems have also begun to be sold in order to create distinctive features and added value for each product brand because today's young entrepreneurs are more interested in controlling and communicating in the form of digital data. As a result, the cold storage industry has to adapt to the times, whether it is the introduction of wireless cold storage temperature and working status monitoring technology to meet the needs of this group of business owners. In the past year, most of the project work has been postponed since the beginning of the year due to the ongoing pandemic, including uncertain economic conditions. This affects the business entrepreneurs in foods, delivery, and retail industries in a wide range from the consumers' purchasing power that has not recovered much. As a result, many projects cannot be delivered, including some projects that have postponed their improvement plans.

For the competitive environment of the refrigeration business overall, there is still pressure from many aspects, either from the cost of the main raw materials used in the production of chiller parts that have increased considerably in the past, such as copper pipes and steel, which are the main raw materials used in producing the parts of the refrigeration system. In addition, the cost of transportation and freight continued to increase in the past year, causing the cost of importing goods to increase. However, in the cooling system sales segment, there are still advantages of preparing stock in advance and the availability of services in unusual situations to meet the needs of the customers quickly and without defects. In addition, in the past year, we can produce the condensing units and compressor racks and release them to the market in large numbers and receive satisfaction from the customers in terms of product quality and good after-sales services.

Digital Printing Business

Marketing

The main target groups of the Company's digital printing products are industrial factories and end-users. Printing on packages is one of the crucial steps in manufacturing process of industrial plants, encompassing the printing of Date of manufacture / expiration or lot numbers or texts on products and packages before distribution. The target customers also include newly opened factories, factories with production line expansion, and factories needing to replace the existing system and products that have depreciated according to their useful life. The Company currently sells digital printing products to a broad variety of industries since there is demand for such products in all industry sectors. The industries that are major end-users of its products are food and beverages, consumer products, construction, electrical appliances and electronics, etc. Hence, the trend of digital printing products relates closely to the private sector investment index and the industrial factory construction value, which could mirror the overall situation of all industries.

Competition

Importing and distributing digital printing system

Has seen medium level of competition. This is because the customers emphasize more on good after sales services and the readiness of after sales staffs, inventories, and spare parts that the customers need to use regularly. Most of the goods sold are well known brand with high quality and had been appointed to solely be the distributor. The revenue structure can be divided into 3 categories:

- 1) The revenue from selling the machines
- 2) The revenue from selling supplies
- 3) Revenue from spare parts, services, and servicing contracts.

The main competitors are companies that are the distributors of the products from foreign countries which there are not many since the brands that are accepted worldwide are extremely limited. Therefore, the customers in the medium and large size factories will mainly choose the brands with the international standards. When comparing the revenue of the digital printing business with 5 other competitors for the total of 6 companies, representing a total sale of 1,527 million baht, accounted 60% of total market value Digital Printing System Business is among the top 3 in the market with approximately 21.11% market share and decrease sales 5.15% compared to the total sales of 6 companies at decrease 2.09% (Source: Department of Business Development, sales in 2020).

Marketing Policy

HARN focuses on selling high quality products, offering services to customers with products of quality, the availability of consultation by expert engineers, swift and professional after sales service team under administration policy which enhances product knowledge and expertise in order to provide customers with instantaneous service and create utmost satisfaction with competitive strategy as follows;

Selling quality products with recognized standards

Focus on selling quality products with globally recognized standards where HARN shall select quality products especially building engineering system products such as firefighting system, air-conditioning system, sanitary system and cooling system, including digital printing system products which greatly relate to safety, product storage process and the continuity of production process. Therefore, it is crucial to select good quality products which are certified by international standards and suitable to the customers' needs, well known products which are popular and widely accepted in the market, to build trust, confidence and customer satisfaction continuously.

Expand range of dealership

HARN plans to expand the range of dealership in building engineering products which include firefighting system, air-conditioning system, sanitary system and cooling system as well as digital printing system where the products will be ordered gradually in order to increase customers' choices whereby the customers' needs will be supported in all groups of product standards. Furthermore, HARN shall increase the number of personnel to be sufficient with the business expansion, especially in the work in firefighting system installation projects and other building engineering system work. HARN wishes to have adequate number engineers to support works in projects which are increasing in amount and value.

Offers a variety of products in complete range with sufficient stock to meet the customers' demands without leaving the customers to spend much time waiting for the products

HARN is one of the distributors of complete range of building engineering products by being the leader in business of importing and selling products in firefighting system, cooling system, air-conditioning system and sanitary system including digital printing system, with a large selection of products. Most of the products sold are imported from other countries which takes time in ordering and waiting for the products to be transported into the country. HARN therefore

must do a sales projection, make plans for product orders and keep an appropriate amount of stock in order to have sufficient current products to meet the customers' demands and able to deliver the products to the customer in a timely manner without delay which may damage the sales and the opportunity of a return customer. At the same time, HARN should not hold too many products in stock that it would contribute to a high cost of stock keeping.

Organize promotional activities to boost sales

HARN organizes promotional activities on a regular basis such as participation in trade shows to create awareness and reach the target customers directly. There are product seminars for project designers and clients to create product familiarity for them to choose the products that HARN sells. There are advertisements in the various magazines which relate to the business of HARN as well as sending invitations to project designers to join activities in visiting the factories of producers in foreign countries, who are famous in global market, in order to study the technology and gain new perspectives on the concepts of building industry to elevate the standards of construction in Thailand, which is one of HARN CSR policies, and building confidence in the products imported by the company to be sold leading to their choosing of HARN products to be used in the various projects with confidence.

This year, due to the outbreak of the COVID-19 in Thailand, which the spread more widely, HARN has adjust method sold through the phone or video call instead to prevent the spread of COVID-19 of Participants.

Invest in business expansion into Asean countries

HARN plans to expand the business into Asean countries such as Cambodia and Vietnam, as examples, as these are countries which have high growth rates in the infrastructures and other construction work, by bringing products in which HARN is the dealer to sell in the aforementioned countries in similar fashion as the ones sold in Thailand, or hire a local staff to work on marketing activities until the volume of sales reaches a satisfactory level before processing to invest and source the office location along with other necessities in the next phase. In this regard, as HARN is one of the distributors of integrated building engineering products, this results in HARN having the advantage in presenting products and services to the target countries also being able to efficiently administrate the cost of business expansion into the target countries.

Pricing Policy

HARN policy on pricing is Cost Plus Pricing whereby the determination of HARN products selling price must be flexible and suitable to the characteristics of each product, distribution channel, target customers, volume and value of the orders as well as taking in consideration the market price of that product, which in some instance, a discount may be given in accordance with the market conditions and the competition in that moment in order to remain competitive in the market. At the same time, the gross profit margin must be maintained at a level that can support the cost of sales, administration and other operations.

Regarding pricing for project works, HARN mainly determines the service charges in accordance with the customer's budget and the cost of each project where there shall be flexibility in the quotations given in order to compete with other competitors in the market, while at the same time, importance must be given to the quality of service as well as the products and equipment used in the task, in order to build continuous credibility and trust from the customers. Moreover, in offering quotations, HARN must achieve adequate level of gross profit margin to support the cost of sales, administration and other operations.

Customers' Characteristics and Target Customers Groups

HARN main target customers are customers in building construction projects, government sector or industrial plants such as shopping malls, office buildings, condominiums, BTS skytrain projects, underground subway projects, government buildings, factory buildings, cold storage buildings and warehouses, including international contractors from Korea, Japan and USA for large petrochemical and power plants, as examples, that require an installation of building engineering system such as firefighting system for safety in accordance with building control laws, sanitary and air-conditioning system in buildings or factories, cooling system in cold storage or system room. HARN clients may be direct clients who hold the ownership of the construction project, or project contractors

who purchase HARN products to install in their projects, as well as stores or distributors of products related to the various systems who purchase HARN products to resell to project contractors or direct users, in which HARN has always have a good relationship the mentioned group of clientele. Moreover, there are groups of clients who regularly order HARN products because of their confidence in the quality and the safely of the products, in which most of them have received international standards certification, combining with excellence service by the sales team who possess great knowledge about the various products. However, in 2020 and 2021, HARN does not have any clients whose spending exceed 30% of total revenue from sales and services.



Sales and Distribution Channels

HARN sells all products in the country by HARN Sales & Marketing team which currently there are 165 employees with sales responsibilities divided by each type of product including the sales of project works. The Sales & Marketing team are responsible for customers' contact, attending to the customers' needs and product presentation to the customers as well as continuously coordinating with the producers or business partners to recognize the current customers' demands and future demand trends including the products' detail, trends of products' quantity and price from the producers in the market for the benefit of effective planning, sales and product pricing.

HARN receives advance orders from the customers for most of the products sold where there is a time period to prepare the purchase and delivery to the customers as per the agreement, in which most of the time the customers will inform their specific requirements to HARN including the products' standards, the source or the producers, in order for HARN to be able to offer the products as per the customers' needs along with quotation and other sales conditions. Most of the products distributed are from producers whom the customers trust and in compliance with the standards used in the works of firefighting system, air-conditioning system, cooling system and digital printing system, customers therefore continuously trust in the Company's products. In this regard, HARN distribution channels are divided into 3 main channels as follows;

1) Main building contractors or system contractors

HARN sells products to the main construction contractors or system contractors of building projects, government projects or industrial factory projects and cold storage contractors, as examples, in which the contractors shall source the products or install HARN products in the various projects in accordance with the specification that the project designer has outlined. Most of HARN sales are through this distribution channel or calculated at 53.58% and 49.10% of the total revenue from sales and service in 2020 and 2021 respectively.

2) Retail or related product suppliers

HARN may not have access to small-sized contractors or customers who are project owners thoroughly, distribution through this channel enables HARN to distribute the products more widely. The sales ratio through this channel is calculated at 6.61% and 8.19% of total revenue from sales and service in 2020 and 2021 respectively. Additionally, in some cases the aforementioned retail or distributor are also HARN business partner that sells some products to the Company in order to install in a project according to the customers' request or to resell to the contractors who have ordered products from HARN in which the mentioned product may be a product from other producers that the Company does not distribute or is a product that doesn't have such a high demand in the market and HARN does not keep it in stock, for example.

3) End user

is a distribution directly to the owner of the building, industrial factory or general users where it is a sale of digital printing system that includes products and/or service in a form of installation project work on firefighting system and other various engineering system that HARN is equipped the aspect of engineering and manpower, design, installation, inspection and maintenance service for the firefighting system as well as being distributed to the general retail users, however, the quantity is not significant and the volume of order per transaction is not of high value. The ratio of distribution through this channel is calculated at 39.82% and 42.71% of total revenue from sales and service in 2020 and 2021 respectively.

1.2.4 Procurement of Products or Services

Most of the products sold by HARN, approximately 70%, are ordered from many producers from foreign countries, which most of them are producers of leading products related to firefighting system, sanitary system, air-conditioning system, cooling system products and world class digital printing system products. HARN has a policy which focuses on selling quality products and with standards that match with the customers' requirements with procurement and selection procedure to obtain quality products, certified by various credible departments or institutions.

In ordering products to sell to the customers, HARN has an advance ordering plan in the appropriate quantity, taking into consideration the market trends, the customers' demands in each time period including the inventory quantity in order to prepare sufficient number of products for distribution, reducing the damage from opportunity loss due to lacking product in the inventory or the inability to source the products on time and enough to satisfy the customers' demands. At the same time, the inventory quantity must be controlled to an appropriate level not allowing the products to be left in the inventory for too long until they become a burden to HARN.

There are over 13,000 categories of products sold by HARN under over 60 famous brands. Within this number HARN owns 7 brands and 45 brands that the Company has been appointed as a distributor in Thailand for 5 producer's brands including 2 US producers' brands which are Potter Electric and Weiss, 3 German producers' brands which are KUBA DOD, ESK SCHULTZE and DOD defrost on demand, as well as producers from other countries which are DOMINO (UK), KORTHOFAH (Netherlands) and EDM (Japan). In this regard, HARN is the importer and distributor of each product category as follows;

Product group	Manufacturer	Brand country
<ul style="list-style-type: none"> Valves and firefighting equipment which includes piping system equipment, groove coupling, fire extinguish valve, automatic sprinkler, fire hose set, fire line, fire hose rack, portable fire extinguisher, chemicals, firefighting foam, firefighting foam equipment, automatic fire suppression system, smoke detection system, clean fire suppressant system, fire and smoke detection camera, etc. 	<ul style="list-style-type: none"> POTTER ELECTRIC VICTAULIC MOYNE ROBERTS BADGER GIACOMINI HYGOOD 5-ELEM NIBCO CHEMGUARD WAGNER SIEMENS SRI GKB RELIABLE 	<ul style="list-style-type: none"> USA. USA. Ireland USA. Italy United Kingdom China USA. USA. Germany Germany Malaysia Taiwan USA.
<ul style="list-style-type: none"> Valves and sanitary system equipment which includes gate valve, butterfly valve, check valve, air vent, strainer, pipe and piping system equipment, pipe connector, pressure and temperature measuring devices, etc. 	<ul style="list-style-type: none"> WEISS VICTAULIC HONEYWELL 	<ul style="list-style-type: none"> USA. USA. USA.
<ul style="list-style-type: none"> Balancing valve, PIVC 	<ul style="list-style-type: none"> OVENTROP 	<ul style="list-style-type: none"> Germany
<ul style="list-style-type: none"> Cooling equipment which includes copper pipe and copper pipe connector, cooling agent, compressor, cooling coil, automatic defrost control equipment, energy saving equipment, pressure control device etc. 	<ul style="list-style-type: none"> KUBA DOD ESK SCHULTZE BITZER ABB DANFOSS O&F ZEILABEGG EBM PAPST BVA 9 LIFE NARA 3Q EVAPCO 	<ul style="list-style-type: none"> Germany Germany Germany Germany Finland Denmark China Germany Germany China Taiwan South Korea Thailand USA.
<ul style="list-style-type: none"> Digital printing equipment for packaging system which includes expiry date printer package label printer, workpiece feeder for 3D printing and color sticker label printing including printing equipment and various types of consumables etc. 	<ul style="list-style-type: none"> Domino Korthofah EDM MSSC United RIBtype EnvisionTEC Materialise 	<ul style="list-style-type: none"> United Kingdom Netherlands Japan USA. USA. Germany Belgium

HARN selects a manufacturer in order for HARN selects a contract manufacturer to produce HARN branded products by taking into consideration the capability of the manufacturer and the capability of the factory. For each of the brand, HARN chooses to use the same producer who has been a business partner over an extended period, which is a production contract from time-to -time, no long-term production contract is made.

In the past, the distribution ratio of products under HARN own brand is considered small in comparison to the imported products from foreign countries. The sales ratio in 2020 and 2021 is calculated at 4.99% and 3.05% of the total revenue.

In this regard, in 2020 and 2021, the Company did not receive order from any one of the manufacturers exceeding 30% of the total order value.

1.2.5 Business Assets

HARN's core business assets consist of investment properties, land, buildings and structures, tools and equipment, furniture and office equipment, vehicle, assets for rent and demonstration, assets under construction, improvement to buildings and structures. The net book values as of December 31, 2021, were as follows:

Unit: THB million

Investment properties	Net book values as of December 31, 2021	Proprietary nature	Obligation
1. Land	135.29	Owner	None
2. Buildings and structures	17.86	Owner	None
3. Buildings and structures improvements	0.66	Owner	None
4. Tools and equipment	0.13	Owner	None
Total	153.94		

Unit: THB million

Fixed assets	Net book values as of December 31, 2021	Proprietary nature	Obligation
1. Land	37.36	Owner	None
2. Buildings and structures	33.54	Owner	None
3. Tools and equipment	4.40	Owner	None
4. Furniture and office equipment	26.14	Owner	None
5. Vehicle	8.55	Owner	None
6. Assets for rent and demonstration	25.17	Owner	None
7. Assets under construction	0.62	Owner	None
Less Impairment allowance	-		
Total	135.78		

Long-Term Leases

HARN entered into a lease agreement for building and warehouse space to be used as a headquarter location and to store goods, including renting out buildings and warehouse buildings by entering into a lease agreement with the third-party companies and persons related to HARN with details as follows:

Counterparties	Place			Rental period		Area (sq.m.)
	No.	Floor	Road / Sub-District / District / Province	Term of lease	Contract start	Contract end
Building						
1. Lessor: Jainnopsiri Co., Ltd. Renter: HARN	559 ^{1/}	1 - 6	Rama 9 soi 13, Bangkapi, Huaykwang, Bangkok	3 year ^{1/}	January 1, 2021	December 31, 2023
Warehouse buildings and racks						
2. Lessor: Phraboriban Co., Ltd. Renter: HARN	509		Soi Soonviai 4 Bangkapi, Huaykwang, Bangkok	36 month	November 1, 2020	October 31, 2023
Warehouse						
3. Lessor: Phattararit 1997 Co., Ltd. Renter: HARN	38/43		Moo 4, Lamlukka Road, Lamlukka, Pathumtani	60 month	March 2, 2020	March 2, 2025

Note : ^{1/} On January 1, 2021, HARN entered into a new office building lease agreement with Gennopasiri Co., Ltd. and has moved in since January 4, 2021.

Property Insurance Policy Contract

HARN has insured 2 policies of all risk insurance and Southeast Insurance Public Company Limited has been chosen as the insurer for both policies. Details are as follows:

Type insurance	Company Insured	Property Insured	Capital (MB.)	Period assured	Assured
<u>insured no.1</u>					
All Risk Insurance (In process of transferring to Indara Insurance PLC.)	Southeast Insurance PLC.	<ul style="list-style-type: none"> 559 Soi Soonvial 4 Bangkapi, Huaykwang, Bangkok <p><u>The insured property, includes:</u></p> <p>1.1) Stock, consists; all kinds, various raw materials including all packaging, and including all assets belonging to the insured and/or under the care of the Insured as a keeper.</p> <p>1.2) property consists; renovations, additions, furniture, fixtures, office equipment, computer systems, tools, appliances, demonstrations, all kinds of related machinery and equipment, raw materials, packaging, including all kinds of assets, belonging to the insured and/or under the care of HARN and third party liability insurance.</p> <p>Limit of liability: For flood disaster, not more than Baht 70 million per time and throughout the insurance period.</p> <p><u>Extending protection:</u></p> <ul style="list-style-type: none"> Theft <ul style="list-style-type: none"> (Chor Ror.3) limit: not more than Baht 30 million (Chor Ror.2) limit: full sum insured Insurance for electrical appliances limit: not more than Baht 30 million per time and throughout the insured period Glass insurance limit: not more than Baht 30 million per time and throughout the insured period Machine insurance limit: not more than Baht 30 million per time and throughout the insured period Money insurance (Por Ngor.2) limit: not more than Baht 2 million per time and throughout the insured period Cover damage to real estate limit: not more than Baht 10 million per time and throughout the insurance period Protection of electronic equipment, computers and processing equipment limit: not more than Baht 20 million per accident and throughout the insurance period Loss or damage to documents such as plans, cheques, bills, credit limit: not more than Baht 20 million accident and throughout the insurance period 	44.27	October 30, 2021 to September 18, 2022	HARN
<u>insured no. 2</u>					
Property All Risk Insurance (In process of transferring to Indara Insurance PLC.)	Southeast Insurance PLC.	<ul style="list-style-type: none"> According to location of branch offices namely; 2.1) Office and Warehouse, 888/14-16 (branch no. 11) <p><u>The insured property</u>, includes: buildings, furniture, fixtures, affixed and stock</p> <ul style="list-style-type: none"> Building No. 888/14 - 16 Moo 21, Bang Phli Yai Sub-District, Bang Phli District, Samut Prakan (excluding foundation), including renovations, additions, fences, gates, utilities such as air-conditioning systems, water systems, electrical systems and other systems. Decorations, renovations, additions, furniture, fixtures, office equipment, computer systems, computers, tools, appliances, demonstrations, all kinds of related machinery and equipment, forklifts, and all kinds of assets belonging to the insured and/or under the care of the insured as a keeper and all kinds of products various raw materials including all kinds of products, goods, raw materials including all kinds of packaging. 	323.60	September 18, 2021 to September 18, 2022	HARN

Type insurance	Company Insured	Property Insured	Capital (MB.)	Period assured	Assured
		<ul style="list-style-type: none"> All kinds' products, raw materials, including all packaging and including all property belonging to the insured and/or under the care of the Insured as a keeper. ***Exceptions for prohibited dangerous goods, according to attached. <p>2.2) 100 Years Building, 1st Floor Faculty of Engineering Chulalongkorn University (branch no. 10)</p> <p><u>The insured property</u>, includes: furniture, fixtures and products stock.</p> <p>2.3) Warehouse, 38/43 Moo 4, Lam Luk Ka Road, Lam Luk Ka Sub-district, Lam Luk Ka District, Pathum Thani.</p> <p><u>The insured property</u>, includes: products stock</p> <p>2.4) Warehouse, 509 Soi Soonvijai (branch no.8)</p> <p><u>The insured property</u>, includes: furniture, fixtures and products stock</p> <p>Limit of liability: Flood disaster, not more than Baht 70 million per time and throughout the insurance period</p> <p>Extending protection against theft:</p> <ul style="list-style-type: none"> (Chor Ror.3) limit: not more than Baht 30 million and throughout the insured period (not cover all types of inventory and stock) (Chor Ror.2) limit: full sum insured Insurance for electrical appliances limit: not more than Baht 30 million per time and throughout the insured period Glass insurance limit: not more than Baht 30 million per time and throughout the insured period Machine insurance limit: not more than Baht 30 million per time and throughout the insured period Money insurance (Por Ngor.2) limit: not more than Baht 2 million per time and throughout the insured period Cover damage to real estate limit: not more than Baht 10 million per time and throughout the insurance period Protection of electronic equipment, equipment limit: not more than Baht 20 million per accident and throughout the insurance period Loss or damage to documents such as plans, cheques, bills, credit limit: no more than Baht 10 million per accident and throughout the insurance period 			

Intangible Asset

HARN's intangible assets include computer software, goodwill, customer relationships, and trademarks. The details as of December 31, 2021 are as follows:

- Computer software which has a net book value of Baht 15.99 million, with amortization by the straight-line method over the asset's useful life of 5-10 years
- Goodwills with a total value of Baht 334.67 million, unamortized and impairment testing in complying of TAS36 "Impairment of Asset"

- Relationship with net customers with a total value of Baht 26.48 million by amortization using the straight-line method over the useful life of the assets of 7 years
- Trademarks/service marks which have developed their own brand of 7 brands, namely HARN, VALTEC, Spark, GuardiaN, BLUEICE, KOPPAR, YUKI. Details are as follows:

No.	trademark	Owner	Registration	For Products / Services	Period
1.		HARN	201120438	For the administration of sales, design, installation and service of firefighting system equipment, air-conditioning system and sanitary, administration of sales and the assemble of industrial cooling system equipment, administration of sales, installation and service of machines, equipment, spare parts, consumables of digital printing system on the package, packet, labels including workpiece creation from digital file.	March 28, 2018 to March 27, 2028
2. ^{1/}		HARN	Kor162287	For the metal water pipe valve products	October 18, 2021 to October 18, 2031
3. ^{1/}		HARN	Kor381341	For the fire hose set, fire hose, fire hose connector products	October 30, 2012 to October 29, 2022
4. ^{1/}		HARN	Kor62121	For the fire extinguisher products	June 20, 2016 to June 19, 2026
5. ^{1/}		HARN	171127993 171127974	For the compressor lubricant products For the <ul style="list-style-type: none"> oil separators as part of the compressor pressure regulators as part of the compressor an emergency device of the compressor to stop the operation of the compressor when the lubricant is lower than the limit Anti-vibration devices of the compressor 	April 4, 2016 to April 3, 2026
6. ^{1/}		HARN	171127981 171127990	For the copper pipes, copper joints, copper welding wires For the insulations	April 4, 2016 to April 3, 2026
7. ^{1/}		HARN	181101901	For the refrigerant products	April 4, 2016 to April 3, 2026

Note : ^{1/} Products under the trademark of HARN (No. 2 - 7) are contracted products with domestic or foreign manufacturers.

Investment Policy in Subsidiaries and Associates

HARN's investment policy on existing businesses and consideration for new schemes, capacity growth, and acquisition of shares or businesses, HARN has consideration into business growth trends, investment capable of adding value and economic viability, enhanced competitiveness for HARN. Investment subject to suitability and the potential of the affiliates important.

Environmental Impacts

- None -

1.2.6 Undelivered Project

As of December 31, 2021, there were backlog order total about 397.36 million baht (excluding subsidiaries), comprising the installation works of fire protection system, e.g. Installation of fire extinguishing system for gas, installation of fire extinguishing system for power plant, installation of sprinkler, system foam fire protection system and petrochemical system total about 289.30 million baht, Refrigeration products total about 75 million baht and Digital Printing products total about 33.06 million baht. PO have been awarded by customers and wait to be delivered in 2022.

1.3 Shareholding Structure of HARN

1.3.1 Shareholding Structure of HARN

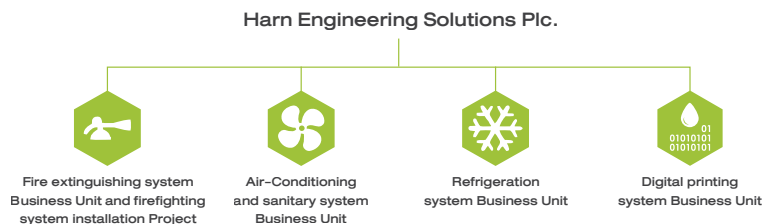
HARN operations with an emphasis on value added to its businesses as well as creating innovation, HARN has mission maximize our customer satisfaction, maximize potential employee, make a good investment return to shareholders, make grow our business in a sustainable, create long term values for stakeholders

with taking care of the environment to be strong, has a clear and transparent shareholding structure and there is no pyramid shareholding structure in the group of HARN Therefore does not cause a conflict of interest to any party the following structure illustrates the integration of business operations: as follow;

Business Structure of HARN and Subsidiary

HARN became an import and distribution of products, fire suppression system, air-conditioning system and sanitary system, refrigeration system, digital printing system, provide development IOT Products and Solutions, including the provision of consulting, designing services in projects and provision of engineering solutions complete

HARN registered the establishment of Harn Vietnam Company Limited ("subsidiary"), Vietnam. With a registered capital of 800,000,000 Vietnamese dong or approximately 1,057,444 baht. HARN holds 100% of the subsidiary's shares in the registered capital on 30 July 2019.



AIYARAHARN CO., LTD.

HARN collaborated with Aiyarafun Group by a joint venture agreement signing between Mr. Prasertsak Detudom and Mr. Satit Wanitchaikit to operate a business on producing, trading, servicing, and developing of "IOT Products and Solutions" system. The business is to provide services on the development of Smart Building under the name Aiyaraharn Co., Ltd ("subsidiary") address 559 Soi soonvijai 4, Rama 9 Road, Bangkok, Huaykwang, Bangkok 10310 with registered capital at 2,000,000 million baht. The shares that HARN holds 65% of the subsidiary's shares of the registered capital on June 24, 2020.

1.3.2 Parties with Conflict of Interest

- None -

1.3.3 Relations with Major Shareholders' Business Group

HARN has mission make a good investment return to shareholders, make grow our business in a sustainable, create long term values for stakeholders, under the supervision of the guidelines of the Stock Exchange of Thailand (SET) and the Office of the Securities and Exchange Commission (SEC),

including the provisions of the Public Limited Companies Act B.E. 2535 (including those amended), has a clear and transparent shareholding structure without cross-holding with major shareholders. Therefore does not cause a conflict of interest to any party.

1.3.4 Shareholders

HARN had shareholding structure as of December 31, 2021, the record date for the year as follows:

No. of shareholders		No. of Shares held	%	Juristic person			Individual person		
				shareholders	shares	%	shareholders	shares	%
Thai shareholders	4,122	510,583,525	87.35	7	3,010,023	0.51	4,115	507,573,502	86.84
Foreign shareholders	2	73,916,475	12.65	1	73,316,475	12.55	1	600,000	0.10
Total	4,124	584,500,000	100.00	8	76,326,498	13.06	4,116	508,173,502	86.94

Top 10 shareholders of HARN as of December 31, 2021 are as follows: (There are 161,742,998 minor shareholders representing 27.672% of the total shares)

No.	Names		Shares	% shares
1.	Mr. Wirat	Sukchai	87,775,858	15.017
2.	Mrs. Sirima	Iamsakulrat	84,234,151	14.411
3.	Nice Noble Limited		73,316,475	12.543
4.	Mr. Jain	Charnnarong	72,319,130	12.373
5.	Miss Nopporn	Charnnarong	26,257,444	4.492
6.	Mr. Thammanoon	Tripetchr	22,373,795	3.828
7.	Mr. Chaiwat	Taepaisitpong	15,920,000	2.724
8.	Miss Panatda	Thongliam	14,832,149	2.538
9.	Mrs. Nopparat	Sukchai	13,000,000	2.224
10.	Mr. Wasan	Nantakwang	12,728,000	2.178
Total top 10 shareholders			422,757,002	72.328

Note :

- Number 3 are nominee accounts, exercise no influence over HARN's management policy formulation, including director nomination.
- Number 1, 2, 3 and 6 are ineligible for voting at shareholders' meetings in any agenda has conflict of interest and exercise no influence over HARN's management policy formulation, including other shareholders.

1.4 Registered and Paid-up Capital

1.4.1 Authorized Capital/ Paid-up Capital / Shares

HARN became a listed company on the Market for Alternative Investment (mai) as of December 31, 2021 has authorized capital totaled Baht 292,250,000, consisting of 584,500,000 common shares at Baht 0.50 per share. These shares represented Baht 292,250,000 in paid-up capital, or 584,500,000 common shares.

1.4.2 Other Shares with Different Terms or Rights from Common Shares

- None -

1.4.3 HARN's Shares or Convertible Securities as Underlying Securities for Issuing Mutual Funds for Foreign Investors

- None -

1.5 Issuance of Other Securities

1.5.1 Convertible Securities

- None -

1.5.2 Debt Securities

- None -

1.6 Dividend Policy

HARN's Dividend Policy

HARN pays out as dividends no less than 40% of its net profit after deducting all reserves required by law and according to the separate financial statements. However dividend payment is subject to future investment plans, necessities, and suitability. Once the Board has decided on annual dividend payment, it must seek approval from the shareholders' meeting. An exception is for interim dividend payment, which the Board can approve and report to the next shareholders' meeting.

Dividend payment	2021	2020	2019	2018
Interim dividend payment (Baht per share)	-	-	0.18	-
Annual dividend payment (Baht per share)	0.10	0.13	-	0.16
Stock dividend (Baht per share)	-	-	-	-
Earnings per share (Baht)	0.12	0.17	0.26	0.23
Dividend payout ratio (%)	83.33	76.47	69.23	69.57
Par Value (Baht per share)	0.50	0.50	0.50	0.50
Outstanding ordinary shares (Share)	584,000,000	584,500,000	584,500,000	584,500,000

Note :

- The 2021 dividend payment of Baht 0.10 per share paid being submitted to approval at the 2022 Annual General Meeting of shareholders.
- Ordinary person shareholders may request a tax credit at rate of 20/80 of the dividend payment pursuant to the guidelines set forth in Section 47bis of the Revenue Code.

Subsidiary's Dividend Policy

Each subsidiary may proceed with dividend payment by taking into account its remaining cash flow in comparison with the investment capital. If the cash flow is substantial enough after legal provisions, the subsidiary may consider to proceed with dividend payment on a case-by-case basis.



2. Risk Management

2.1 Risk Management Policy and Plans

Recognizing the value of risk management under changing circumstances that may affect businesses due to internal and external factors, HARN relentlessly complied with the principles and approach of COSO, an international standard on risk management. Regards risk management as a critical component of all its business processes that must be comprehensively connected, so it has risk management policy for everyone to observe. The Risk Management Committee were thus appointed to steer overall risk management for maximum efficiency.

Risk Management Structure

Corporate risks are systematically managed through risk management committees to give risk management plans effectiveness and efficiency in line with corporate goals and strategies. Operational risks fall under the supervision of executives responsible for a given function. All units are responsible for managing and controlling risks to manageable levels and this has been spelled out in the job descriptions of all units.

However, HARN has investigated and applied various risk management tools, including adopted Risk & Control Self-Assessment (RCSA) to help analyze the risk factors and prioritized to assess the level of impact of the major risks and Key Risk Indicators (KRI), to indicate the impact on operating results in the form of the existing control level, as well to define measures, prevent and monitor. In addition, it monitors key changes in external factors and emerging risks to develop proactive risk management measures before such risks harm business.

Risk Management Culture

HARN cultivates risk management awareness among all its employees along with nurturing risk management ambience and culture, focusing on due resource allocation and provision of assorted support by integrating risk management with key processes to promote effective risk management.

2.2 Risk Factors Facing HARN's Businesses

HARN analyzes internal and external circumstances as well as various trends (economic, social, political, technological, industrial, competitor, and others) to arrive at corporate risk factors, grouped as follows:

2.2.1 Risks Facing Businesses of HARN

Risk from Loss of Distributorship Status

HARN is a distributor of Fire Suppression products Air-conditioning and Sanitary products, Refrigeration products, and Digital Printing products with a diverse range of products under world-class brands. The top three brands with highest sales volume altogether made up about 37.87% and 40.63% of its total sales in 2020 and 2021 respectively. As such, a loss of its distributorship right to the significant brands could affect its sales.

Having distributorship authorization is highly essential to HARN's business. There are two types of distribution authorization, i.e., with expiration and without expiration. However, for most of the brands distributed by HARN, it has not yet officially entered into distributorship contract with the brand owners, is thus exposed to risk if its distributorship is revoked or its distributorship contract has been terminated under whatever circumstances, for example, trade partner entering joint venture with another company or trade partner discontinuing business, etc. In whichever case, there may be negative impact on HARN's sales. Which, since 2011, HARN's brands had never been revoked since being authorized as the distributor. However, in view of our experience in this business and longstanding relationship with brand owners, its distribution coverage of over 60 brands, good service quality, and good relationship with customers, as well as a large customer base of over 5,400 customers, HARN is confident that if it loses distribution authorization of any brand, it will be able to secure alternative brand to satisfy the market demand. In 2019, HARN was appointed as a distributor of one additional brand. Also, HARN has also developed its house brands for some product items to mitigate risk of dependence on other brands.

In addition, throughout the past years, HARN has honored all trade terms and conditions as agreed upon and as trusted for being distributor of the respective brands. This can be witnessed from its continuously rising growth of sales. Coupled with its efficient distribution channels, a strong sales team and distributorship of brands that allows it to achieve ongoing growth of sales, HARN is confident that brand owners will continue to assign HARN as their distributor through the years ahead, it is therefore classified as assessment the risk control at a satisfactory level.

Risk from Brand Owners Implementing Marketing by Themselves

If a foreign brand owner wishes to operate business in Thailand without dependence on HARN, could risk losing its distribution authorization for any such brand and may otherwise have to compete with that brand owner.

Nonetheless, HARN believes that there is a slim chance for such risk to occur, considering that it is not worthwhile for the brand owner to make such investment and implement the marketing by itself. In the distribution of valves and equipment for fire protection system, air-conditioning system and sanitary system, Refrigeration system, and Digital Printing system, the distributor must be able to offer a broad variety of products and comprehensive solutions to satisfy customers' requirements. Customers prefer convenience in ordering products from the distributor who has all products to completely serve their needs. Over the past years, some brand owners from abroad assigned their subsidiaries to directly operate on their behalf, but they failed, so they have switched back to the original distribution method through distributors, it is therefore classified as assessment the risk control at a satisfactory level.

Regulation Risks

Changes in the government's policies focusing on economic growth in parallel with development of society, communities, and the environment do not affect current businesses, however HARN has therefore monitored and investigated laws and regulations to ensure that HARN's operation complies with the laws, regulations, announcements, rules, and the public sector's directives that bind businesses by systematically monitoring public policy changes and emerging legislation to promptly cope with changes. The efforts include cultivating awareness of the importance of legal compliance among employees.

In addition, HARN also attention on the Personal Data Protection Act (PDPA) to supervise and steer personal data management in line with the PDPA Act B.E.2562 (2019) to assure data owners of the Company's data security. Actions taken included training and counseling for corporate personnel and development of information systems and personal data management of higher efficiency.

Exchange Rate Risk

The products distributed by HARN are mainly imported from abroad. Its import volume in 2020 and 2021 made up 72.80% and 74.08% of total volume of product procurement respectively. Tender offer and payment for products are primarily denominated in US dollar, Pound Sterling and Euro currency totally 99.37% and 99.02% respectively of the foreign purchase volume, while most products are almost entirely for local distribution in Thai baht. In some cases, HARN is unable to promptly adjust product prices upward in line with the rising cost and is thus vulnerable to foreign exchange fluctuation, which will further affect its costs of products and gross profits. However, there are agreements for some customers to pay in USD, EUR and GBP.

HARN well aware of such impact, has the exchange rate management policy as the follow:

- Required executed forward contracts with financial institutions to provide hedging against such risk. The contract value covers all existing foreign trade account payables. In addition, HARN has opened foreign currency deposit accounts in USD, GBP, EUR, JPY and AUD in order to receive payments from customers in foreign currency. And is another way to reduce exchange rate risk.
- Also continuously monitor the trend in the change of the currency for evaluation and to manage the risks from the exchange rate closely

In 2020 and 2021, HARN bought foreign currency in advance totaling Baht 432.54 million and Baht 455.02 million, or 85.97% and 88.38% of its import volume. Furthermore, the Company managed its exchange rate risk by always keeping abreast of foreign exchange movement, resulting in only not much risk exposure as can be seen from its exchange risk management outcome. In 2020 and 2021 which recorded foreign exchange gains of Baht 1.94 million and Baht 3.61 million, respectively, it is therefore classified as assessment the risk control at a satisfactory level.



In addition, if foreign exchange rates change to the level that leads to sharp increase in its cost, HARN will revise its selling prices based on market conditions with prior notice thereof to its customers. HARN also keeps a stock of products to accommodate product distribution in advance. Therefore, foreign exchange volatility does not have any significant impact on the revenues and costs of HARN.

Risk from Impairment of Goodwill

HARN has to record goodwill from a fair value of the consideration for the purchase and acceptance of entire business transfer of net assets of Chillmatch Co., Ltd. and subsidiary, which is higher than a fair value of Chillmatch Co., Ltd. and subsidiary as of the date of issuance of newly ordinary shares as a consideration for the said entire business transfer. In this respect, the executive of HARN will conduct an impairment test in every year and set aside an allowance for impairment loss (if any). HARN may therefore be exposed to risk in case the auditor considers that the goodwill is impaired and such impairment will then affect its income statement with regard to net profit, equity and debt to equity ratio as a whole according to the value in use.

The executive conducted the impairment test of goodwill consists of Refrigeration Business and Digital Printing Business. The management estimated the expected free cash flow sometimes called "Realizable Value" of the two business. Those cash flow is consisted of forecasted sales, cost of goods sold, selling and administrative expenses (depreciation and amortization excluded), income tax, capital budgeting necessary to operate and also the changes in relevant working capital such as accounts receivable, inventory and accounts payable. Those annual free cash flows were discounted into present value to determine the realizable value. The discount rate used is a pre-tax rate that reflects the specific risk of HARN as whole according to the Value in Use criteria.

The free cash flow valuation based on reasonably business assumptions and most likely possibility according to the current economic circumstances. As the result the realizable value is greater than the carrying amount of the fixed assets used in the operation of the business unit, goodwill and customer relationship it arrives from entire business transfer from Chillmatch Co., Ltd and Q II S Co., Ltd. Therefore, there is no indication of impairment of goodwill as of December 31, 2021. Also, complied the financial reporting standards was audit by the certified public accountant.

Manpower and Competency Capacity Risks are Insufficient for Business Growth.

HARN is aware of the adequacy of manpower which corresponds to the strategic expansion. therefore manages the risk through the following measures:

- Reviewed its organization structure and required human resource plan.
- Improved our recruiting effectiveness by enhancing the recruiting channels.
- Identified human resource development plan according to grown of business, has Discussing succession to executives, it also stimulated talented employees to see management of the future goals growth and continually accelerate self-development.
- The personnel retention with strengthen cordial relationships through activities, such as new employee orientation, annual tour, new year's Party and sports day activities, including an employee satisfaction survey annually for the improvement of work processes and work environment.

In 2021, the evaluation was 81.49%, compared with 76.70% in 2020, Increase 4.79%. HARN has analyzed the results and recommendations and assigned the relevant department to make a revised plan in 2022.

In 2021, the resignation of employees was 8.15%, increase of 8.00% compared to 2020, but lower from target of 14%, and the rate of recruitment to fill the vacancies was 22.31%, which was better than the set target of 18%, because the Circumstance of COVID-19 to hold in recruiting employees. However, HARN has still reviewing to the qualifications and remuneration structure by comparing in the labor market at the same level annually.

HARN assesses the results of risk control are at a controlled level, but still not satisfactory. However, in 2022 still focus great emphasis to accelerating the implementation of Guidelines for Sustainable Development in the Smart People Dimension.

Risk from Corruption

The products sold by HARN are imported from abroad, which are sold to government and private sectors. In accordance to these processes may cause corruption, therefore, to prevent that HARN does not follow the procedure, such as importing goods, customs clearance, offerings & auctions product sales and/or installation high-value projects, such internal processes may be caused by non-compliance with the work practices of procurement, control of goods or assets, disbursement of improper expenses, paying or being called payments to accept from government or incorrect accounting records, therefore, measures as follows:

- Established a Risk Management Committee, analyze and determine measures manage business risks, prevent and monitor risks of corruption both at the organization and operation levels, by provide an internal audit from efficient auditors external and have internal monitor to quality standards ISO 9001:2015.
- Declaration of intent to be member of the Thai Private Sector Collective Action Coalition Against Corruption (CAC) since 2017 and certified as member on November 5, 2018 to present, demonstrate its commitment to all anti-corruption, HARN determine anti-corruption policies and guidelines, together with communicated to the board, executives, staffs and all stakeholders to be acknowledged in the specified channels, and report to the Board a quarterly basis.
- Provide complaints channels and whistles.

In 2021, assesses this risk control at a satisfactory level and no fraud or unethical offenses were found.

Business Disruption Risks

The spread of COVID-19, have changes have been caused to the economy and society in Thailand and throughout the world. The demands of goods and services in business sectors delayed the investment in many projects, which directly affected income. HARN has closely monitored the situation to manage risks and issue various measures to plan and manage the crisis, including had adjust the way conduct business by enabling technologies to help core systems allowing work to be performed outside anytime and anywhere considering the safety of employees, but still being able to deliver a continuous flow of products and services to customers, the process as follows.

- Designate the practical guidance of COVID-19 to communicate to employees regarding raising awareness of self-care, visiting customers, overcrowding on site is avoided and Social Distancing etc., provide strictly screened employees every week before outside work and employees in the risky group are quarantined.
- Establish a working group; namely chief executive, building management department and human resource department, in order to assess the situation in the an emergency and coordinate with the appropriate authorities.
- Work from home through a network connection to VPN in across a long, in order to reduce overcrowding at the workplace and the risks while traveling to work.

In 2021, Dealing with new risks emerging, assesses the results of risk control are at a controlled level, but still not satisfactory, because HARN's directly affected income, by the delay of customers purchases or project expansion; and there were infected employees, which have had serious impacts on life and safety of employees and their families a little.

Emerging Risk

Climate change is becoming increasingly critical. This is evident in the 26th (COP26) meeting of member states under the United Nations treaty on climate change, held from November 1-12, 2021, to define new regulations, rules, and work scopes under the agreement on greenhouse gas reduction, Thailand it has stepped up efforts to achieve carbon neutrality targets by 2050, and achieve net zero greenhouse gas emissions targets by 2065, into account that Thailand is 1 of 10 countries impacted by climate change highest in the world, as well as presenting the concept of the BGC economic model of Thailand to a paradigm shift and environmentally friendly economic development and as the main agenda of the APEC meeting that Thailand will host in 2022., the Prime Minister's Office must economic mechanisms conducive for the private sector's reduction of greenhouse gas emissions, must be identified. Moreover, the government has enforced encouraging the change in daily work as part of the climate change solution; for example, mass transit development and promotion, as well as reduction of plastic bag usage. Changes in public policies, laws, and regulations concerning climate change, which have not been clearly defined of mechanism and enforcement, are regarded as the business transition risk.

To Handle this Risk

HARN has plans it covers current business operation and future investments by indirect greenhouse gas emission reduction (scope 1, scope 2 and scope 3) with installing a solar on roof of the office building and has also investigated guidelines and methods of a project entitled Thailand Voluntary Emission Reduction Program (T-VER) to prepare for changes in laws on climate change, by assesses and pursues suitable guidelines in approaching a future low-carbon society, for modifies plans to achieve greenhouse gas reduction goals.

2.2.2 Investment Risks for Shareholders

- None -

2.2.3 Risks Facing Investing in Foreign Securities

- None -

3. Driving Business for Sustainability

3.1 Sustainability Management Policy and Targets

3.1.1 Sustainability Management Policy

HARN Engineering Solutions Public Company Limited (“HARN”), realizes the importance of operating the business based on sustainable development, in line with social responsibility by creating collaboration, trustworthiness, and value for stakeholders, must strive to balance the three dimensions of environmental, social, and governance, and all interested parties involved in the sustainability cycle of HARN. The Board therefore determines HARN Sustainability Management Policy, with regard to the current situations, outlooks, trends, and other factors related to sustainability issues, both internally and externally, as well as all the relevant rules, regulations, and standards with all group of stakeholders in mind. All the aforementioned factors would drive HARN to achieve its vision, mission, core value, strategic directions and targets effectively. Illustrate its determination driving and executing its sustainable business under the management goal for sustainable growth that “Quality Living through Sustainable Engineering”.

3.1.2 Sustainability Management Targets (environmental, social, governance)

HARN adheres to becoming the “to be a leading of one-stop engineering systems in Thailand and neighbor countries”, with the mission to respond to all stakeholders equally through the “POSITIVE” core value, to ensure the strategic direction of sustainability management towards the environment and society, while creating a sustainable growth for all sectors, as follows:

Quality Living through Sustainable Engineering

SMART Business

Create good returns to shareholders and expand the business to continue to grow and sustainably



- High quality products and services
- Develop a complete solution and service
- Add product value through digital technology
- Excellent business management Using modern IT technology and management

SMART People

Create a happy, energetic and innovative work environment and is constantly evolving



Strengthen and develop personnel to be ready in 3 areas: SMART PRO, competence, SMART Care skills, ready body and mind,

- SMART PRO, competence
- SMART Care skills, ready body and mind
- SMART Learning, creating readiness to learn digital technology

SMART Environment

Control business processes that reduce the environmental impact. Promote safety Occupational health and environment in all processes




- Reduce and recycle waste from business processes Correctly dispose of hazardous waste
- Promote awareness of the environment

3.2 Impact Management to Stakeholders in the Business Value Chain

Stakeholder Analysis from the Business Value Chain

HARN has taken into account the utmost importance of the stakeholder management throughout the business value chain, covering those impacted by HARN's business operation or have influences on the company from the past, present and into the future. As a result, puts an emphasis on the value chain management's effectiveness to ensure our mission to balance all groups of stakeholders equally. HARN divides its stakeholders into 7 main groups is executive and employee, customer, trade partners and/or creditors, competitor, Investor, public sector, community, society and environment to find out their views and expectations from business operations. Also devises appropriate methods for regular stakeholder engagement, especially during COVID-19 outbreak where is well aware that supports and viewpoints from all stakeholders will benefit HARN's business operation and sustainable development, Impacts and influence from one stakeholder to another into the following guidelines:

 Employee	Promoting capability building professionally and ensuring that employees' well-being is level with other leading companies in order to strengthen employee engagement.	Channels Expectation Performance	Conference, LINE AD, company announcement, intranet, email <ul style="list-style-type: none"> Have fair working conditions. There is an opportunity to grow and progress. It is safe and hygienic. have suitable welfare <ul style="list-style-type: none"> Labor problems or complaints equal to 0% Compare results with the labor market every year: Central Division In standard Sales and Service Group Above average market Operational accidents equal to 0.40% The number of employees with the criteria metric is 100%. Working satisfaction is 81.49%.
 Customer	Ensuring customers satisfaction and loyalty by delivering world-class quality products and services at fair prices.	Channels Expectation Performance	Visits, LINE AD, FB, Website, Seminar <ul style="list-style-type: none"> Deliver goods and services in accordance with the agreement. Employees have knowledge and understanding of products/ services. Able to provide accurate helpful advice Obtaining on-time after-sales service <ul style="list-style-type: none"> Product / service complaints were 0.009%. The average number of employees who received product / service training is 2 hours. Customer satisfaction is 91.18%
 Trade partners and/or creditors	Conducting fair business practice with all trade partners while promoting trust, good relationship, and cooperation to expand business capability and increase efficiency in long-term business partnerships.	Channels Expectation Performance	Visits, websites, e-mails, conferences, seller evaluation <ul style="list-style-type: none"> Fair, follow the commercial terms Stay informed And complete trading policy Have been aware of the problem and how to fix it honestly. <ul style="list-style-type: none"> Vender evaluation twice a year Domestic Vender evaluation results for 2021 are 96.34% and 96.73%. Foreign Vender evaluation results for 2021 are 96.69% and 95.52%.
 Competitor	Complied with the rules of fair competition and treated business competitors fairly under the Competition Law Framework. Refrained from dishonesty or improperly seeking confidential information on business competitors.		
 Investor	Operating profitable businesses that lead to sustainable growth while generating optimal returns.	Channels Expectation Performance	<ul style="list-style-type: none"> Shareholder meeting Opportunity Day performance conference Investor Relations Website <ul style="list-style-type: none"> Sustainable business growth Continuously receive returns Business operations are transparent. Have good corporate governance <ul style="list-style-type: none"> Developing full range of solutions and services Pay a dividend not less than 40% CG Score "Excellent" level
 Public sector	Support public sector policy, ensuring business to support economic growth of countries.	Channels Expectation Performance	<ul style="list-style-type: none"> Website www.harn.co.th Visiting the staff according to the notification Monthly report submission <ul style="list-style-type: none"> Comply with all applicable laws, rules, regulations and regulations. Operate business responsibly and with transparency. <ul style="list-style-type: none"> There is no penalty for neglecting to comply with the law. Become a affiliate Thailand Private Sector Collective Action Coalition Anti-Corruption (CAC) CG Score "Excellent" level
 Community, Society and Environment	Maintaining an excellent corporate standing in Thai society by exercising environmental stewardship of internationally standards and improving the quality of life for communities and societies.		

3.3 Environmental Sustainability Management

3.3.1 Environmental Policy and Practice


HARN emphasizes on protecting the environment along the demand chains, from the process of products selection which does not harm the natural resources and is environmental friendly, strictly following the laws and regulations instructed by governing bodies, reducing the wastes and leftovers from the operation, save energy in the work place by regulating the use of air conditions, lights and computers by considering the maximum usage in order to lower the costs and raise the awareness of sustainable energy saving for the good of the community and in response to the energy saving policy of the Government. HARN has developed an environmental management system by establishing a policy on the environment, occupational health and safety at work to be a framework for operation as well as building a systematic environmental database to control and reduce impacts and maintain a good environment along with sustainable business growth.

3.3.2 Environmental Performance

In 2021, HARN had revised the training manual used on safety/work environment and environment. The training for 21 new employees. The test results after the training show 89.50% of success, encouraging the staff to be aware of the right way to dispose waste via communication channels in HARN such as email, Line Official and Digital signage.



HARN realized the importance of reducing use of paper in work process with measures and practices set out. All the above activities were 100% completed in 2021, and set to be regular projects held continuously in the following years as below:

 Reduce	 Reuse	 Recycle
1. Use email to send document eg. Gmail/Outlook 2. Store data via Data Center 3. Use e-meeting 4. Change paper-based surveys to Google Form 5. Reduce giving out handouts of seminars to soft copy via email 6. Implement "One Quality Project" to reduce paper by adjusting the working method, develop using digital systems	Print on one side printed paper	Placement of separate bins eg. General waste, used paper, bottles & plastics and sell reusable waste from paper, bottles & plastics.

Climate Change Action

To control and reduce greenhouse gas emissions and to conserve natural resources, has set net zero greenhouse gas emissions targets in 2027, which define strategy focuses on energy efficiency, investment in green business, in a move towards green economy and the goal of Partner for Life. To this end, HARN set targets direct emissions (Scope 1), energy indirect emissions from use of electricity (Scope 2) and other energy indirect emissions, including transport, paper, accommodation, and waste (Scope 3) to be less than 120kWh per square meter per year, which has direct and significant results in greenhouse gas emissions.

In this regard, HARN was used activities data the calculation of greenhouse gas emissions is 2021 using principles and formulas from the Greenhouse Gas Management Organization (Public Organization), which is called in short "TGO." The data has not been verified by TGO experts. Result that the organization carbon footprint of HARN was 785,008 tons of carbon dioxide equivalent (tCO₂e) with Scope 1, Scope 2 and 3 were 184,387 tCO₂e, 347,442 tCO₂e and 253,178 tCO₂e, respectively. Evaluation of organization carbon footprint per capita was 3,298 tCO₂e.

Data the calculation of greenhouse gas emissions for 2021

Carbon source	tons of carbon dioxide equivalent (tCO ₂ e)
electricity	347.4
work trip	409.2
sojourn	8.6
document production	11.8
waste after the event	8.0
Total	785.0

Building and energy management system

HARN chose to learn and establish a building and energy management system by its internal team, together with our affiliates with Internet of Things (IoT) know-how, we aim for energy to be less than 120kWh per square meter per year, which is considered very low for a building in Thailand.

As a result of the use of this building, 330 solar panels installed with a capacity of 0.127 megawatts to generate electricity from solar power instead of using electric power from the Metropolitan Electricity Authority reduce energy consumption by up to 170kWh per year, or approximately 30% of the energy used, or reduce the amount of indirect greenhouse gas emissions of 62,103 tCO₂e. This is therefore a clear target for reducing greenhouse gas emissions.

From the data collected throughout the year 2021, it found that the solar panels generated 124.23MWh, 24.23% of the total used electricity. However, during the first months of the building use, many parts of the system were not fully automated and resulted in inefficiencies. Since June, the team had used automation in conjunction with IoT, making the system more efficient accordingly. It can be seen that the monthly energy consumption dropped from 65MWh in March and only 40MWh in December. In other words, there was a 40% reduction in energy consumption. When considering the energy bill in December, the solar panels produced 11.67MWh of the total energy used (41.51MWh) or equivalent to 28.11%.

The Amount of Solar Power Generation (Blue) and Total Electricity Consumed (Orange) The difference is the electricity that must be purchased from MEA.

Yield **124.23 MWh**

Self-consumption **124.23 MWh**
(100.00%)

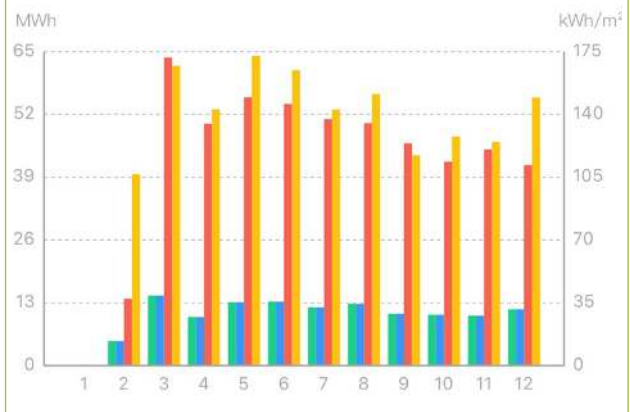
Export **0.49 kWh** (0.00%)

Consumption **513.06 MWh**

Self-sufficiency **124.23 MWh**
(24.21%)

Import **388.83 MWh** (75.79%)

● Yield ● Consumption ● Self-consumption energy ● Irradiation

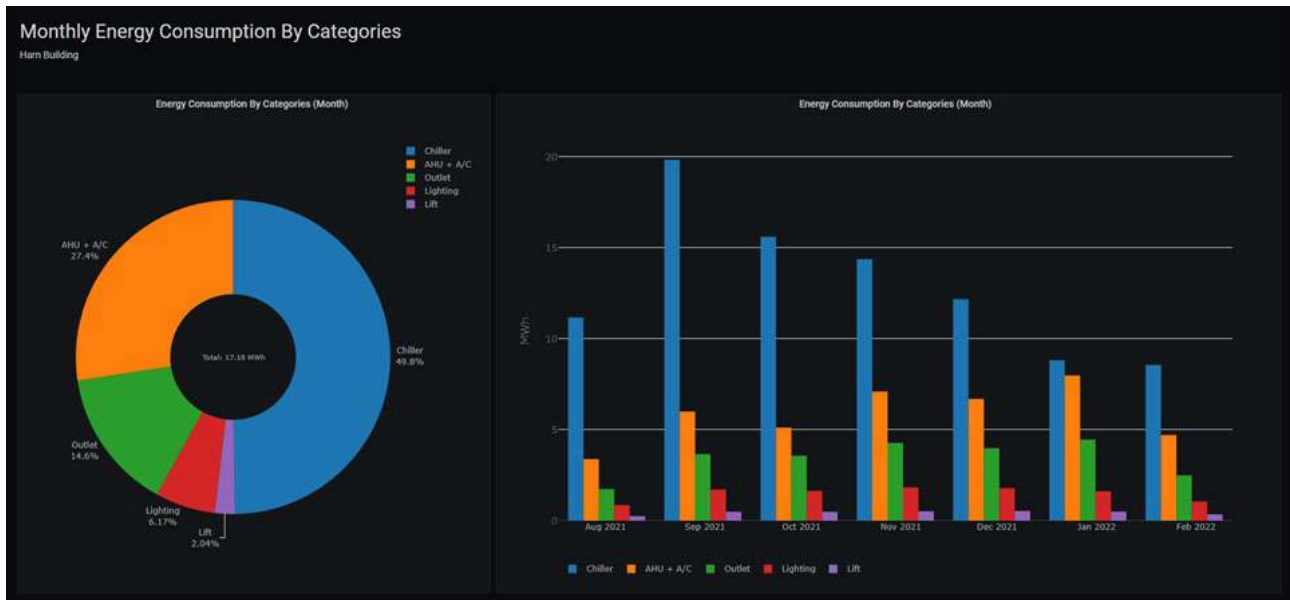


When comparing the year-round energy consumption target to the area using energy estimates for the first 45 days before moving into the office, it is found that the value was 88.84kWh per square meter per year. If the adjusted value of energy consumption in December is estimated, it is expected that the energy consumption in 2022 will be 75.47kWh per square meter per year.

It can be said that HARN has met its annual energy consumption target per square meter per year at 120kWh, and the building is one of Thailand's most energy-efficient buildings per square meter.

The data obtained from the Building Management System developed by HARN and Aiyaraharn Company Limited ("Subsidiary"), it found the proportion of energy consumption in the HARN office during the second half of 2021 is as follows:

System	Power Proportion (%)
Chiller	49.8
Cooling and Air-Conditioning	27.4
Information, communication and outlet	14.6
Light	6.1
Elevator	2.0



It can be seen that chillers and AHU & A/C are the systems that consume energy accounting for 77.2% of the total energy consumption, so modification of the two systems is required to reduce energy consumption. HARN aims to optimize the maintenance of them to reduce the total energy consumption by more than 40%.

For the lighting system, typical buildings consume 25% of the total energy consumption. It can be seen that HARN's office

building has only 6.1% of the energy consumption because HARN uses a PoE lighting system that dims or turns off the lamps according to the intensity of the light and only when they are used.

What HARN has built in this office will become a corporate culture of energy-saving consciousness, and no matter where employees are located, they will always have a sense of reducing energy loss.

3.4 Sustainability Management Social

3.4.1 Social Policy and Practice

1) Human Resource Sustainability

Since HARN conducts a trading business, not only the selection of quality products, but also the existing work systems and services which efficiently meet the changing of customers' demands due to economic conditions, technology or other factors are key to success. HARN realizes that employees are crucial to driving the organization towards success and sustainable growth. However, to achieve that goal, the employees need to be smart, good and happy. The significant HARN missions to drive success as intended are to strengthen and develop employees to be ready in three areas: SMART PRO, the preparedness of competence and skills; SMART Care, the preparedness of physical and mental aspects; and SMART Learning, the preparedness of acquiring digital technology through the human resources administration policy of HARN which designates to "be determined to create

a working atmosphere to be happy, enthusiastic, with initiative and also the development to be well-rounded employees on the principles of accuracy, justice, positivity and professional responsibility." There are five practical guidelines as follow;

1. Human rights respect
2. Fair treatment of employees
3. Strengthen and develop employees' capability; support culture and values of HARN in line with the goals, strategies and direction of business expansion.
4. All executives are responsible for human resource management in accordance with the policy and management guidelines of HARN.
5. Enable information technology to develop human resources in various fields.



Human rights respect

- Has guidelines to promote and motivates the practice based on the principle of basic human rights and equality by disregarding the differences between nationalities, race, skin color, sex, language, religions, political or any other beliefs, ethnicity or social background, wealth, birth or social status.
- Supports and respects the protection of human rights by regularly inspecting its own business so that it does not involve with activities which violates the human rights, for example, not supporting forced labor, or opposing to child labor
- Respects the opinions of the employees which cover the freedom of opinions that is free from outside influences, obtaining information or ideas from various Medias, including providing the communication to freely listen to the opinions of the stakeholders.

Fair treatment of employees

In the year 2021, HARN did not violate the laws regarding labor, consumers, employment, trade competition, environment, the practice guidelines are as follows;

- Strictly comply with the laws and regulations which relate to the employees.
- Provide a good working atmosphere that is safe to the lives and assets of the employees.
- Treat the employees gently, respect their individuality and human dignity.
- Fair remunerations for employees.
- The promotion, relocation, including rewards and disciplinary actions are conducted fairly by considering the knowledge, capabilities and suitability of the employees as the standard.
- Emphasizes on the skills development of the employees by providing regular opportunities and equally.
- Avoid any unfair actions which may affect the stability of the employees' jobs or threaten and create stress to the employees.
- Employees have the rights to appeal when they are treated unfairly according to the process and system in place.
- Listen to suggestions and opinions of the employees from all levels equally and fairly.

2) Community & Social Sustainability

In the course of business operation, HARN is committed business to fair with Guidelines for management according to moral, ethical administration, creating management credibility. HARN promotes fair competition to motivate innovations and improvement of products and services, which will in turn contribute to economic growth and better standard of living in the long run. In addition, HARN also promotes social responsibility in all stages of business chain, takes responsibility for its actions which may affect the society and the environment, and the effect on other businesses due to its procurement activities, in order to avoid or minimize the negative impact, as well as respects the rights in properties and commits no violation of intellectual property, the following guidelines:

Promote fair competition

- Undertake the business activities in compliance with the law and competition regulations, and cooperate with the government authorities.
- Establish the procedure and measure preventing the involvement in or conspiracy with the behavior against fair competition.
- Ensure the employees be aware of fair competition and compliance with applicable competition law.
- Promote fair competition and activities, and support anti-monopoly and anti-dumping.
- Pay attention to social context and not take advantage of natural or social conditions, such as poverty, to unfairly create competitive advantages.

Promote social responsibility in value chain

- Define social and environmental measures in the policy and procedures for procurement and distribution.
- Encourage other relevant companies to accept and apply the similar policy in order to prevent unfair competition.
- Actively participate in elevating awareness of the principles and issues relating to CSR activities in which takes part.
- Promote fair treatment to one another throughout the value chain, both in terms of costs and benefits of implementing CSR activities; that is to say, improve the capability to achieve the CSR targets in all operations of the value chains including appropriate procurement such as creating guarantee for fair price with adequate lead delivery time and an established trade agreement.

Promote respect for assets rights

- Appropriately check to ensure that is legally allowed to use and grant the right to use a certain property.
- Not participate in any activity violating other person's properties, for example, inappropriately using advantageous marketing position, producing fake products, and intellectual property infringement.
- Fairly pay for the use or acquisition of a certain property.

HARN allows for reporting of any possible offence or filing any complaint of any breach of law or ethics through chairman of Audit Committee. HARN has an established procedure for

actions to be taken after getting the report of such issue. The reported matter shall be investigated and then submitted to the Board's.

In addition, HARN also sets a practice guideline for the directors, top executives and employees, including code of ethics and accountability for the stakeholders. The guideline is aimed at creating behavioral standard for the operation of such personnel on an integrity basis. It is also a guideline for the Board members, top executives, and employee's organization-wide to be aware and follow. In this regard, HARN has set a process to monitor such performance on a regular basis.

Responsibility to Consumers

HARN aims to be the leader in services with the Sustainable Solutions' of the engineering system by utilizing the knowledge in products selection and innovations which responds to the customers' demands in order to increase the quality and the safety of the consumers with high quality products, modern technologies, sales and services that are fast, accurate and worth the value. These are the tools which create customer's satisfactions, differentiate the products and increase the ability to compete, including securing the brand loyalty in the long term, gaining value to HARN. HARN always considers investing for the maximum benefits of the consumers as well.

HARN is committed to sharing the engineering knowledge of HARN with its customers and the general public by posting contents on Facebook and HARN's website to provide society with wider knowledge and deeper insights. Moreover, HARN did a project called "Knowledge Sharing" aimed at training interested participants in the South to have the knowledge of how the cooling system works In Surat Thani and Bangkok. In 2021, total on 4 times with adherence to the principle "The giver learns and grows" motto.

HARN develops the responsibility to the consumers through the practical process and the staff activities in various departments, Operations under ISO 9001:2015 have been strictly executed along with continuous improvement of the management system as well as development of an efficient internal system for data collection and review, to minimize any possible error in data transmission and to facilitate data validation. The audit unit is responsible for driving the assessment of compliance with laws and regulations while developing some tools or systems that help enhance work efficiency. In 2021, HARN were reported with zero major non-compliance case, following assessment against laws and regulations by the ISO Certification Institute from SGS (Thailand) Co., Ltd. on December 22-24, 2021.

With realization of the importance of products that enhance quality of life and safety of consumers, HARN has paid great care and attention to all processes on an end-to-end basis until the goods reach the consumers, as follows;



3.4.2 Society Performance

Manpower planning and recruiting

In 2021, the spread of the COVID-19 has caused HARN to slow the recruitment of employees as planned in the manpower plan. Recruitment will be performed only for urgent and important positions to the administration, as well as transferring positions if there is an available position in order to lighten burden. However, HARN still maintains its planned employee-to-workforce ratio of 89% and has a turnover rate of 8.15%.

Performance evaluation

HARN promoted the participation of supervisors and workers to define the goals and Key Performance Indicators (KPIs) altogether which led to the cooperation and good relationship between supervisors and their subordinates. To be successful, it was arranged to conduct the performance appraisal a 2 year, dividing the results into 3 parts as follows;

1. KPI (Assess the performance of the assigned tasks which support the main goal of HARN)
2. API = Appraisal Indicator (Assess work behavior which is consistent with the culture and the values of HARN)
3. ATI = Attendance Indicator (Assess employees discipline at the workplace)

The assessment results will be used for consideration of the annual return and communicated to employees in order to find a mutual solution for improvement between supervisors and employees. In 2021, the assessment was completed at 100% for all.

Remunerations and Benefits for the Employees

- HARN established a welfare committee to control and monitor all levels of employees in the organization to allow employees to fully participate in policy-making through the communication channel designated by HARN.
- HARN participated in the wage surveys and HR Benchmark 2020/2021 to reconsider compensation and welfare which would help HARN in attracting and retaining skilled workers, as well as keeping the cost of HARN to be reasonable. Besides the salary, employees will fairly and appropriately receive welfare and other benefits in various forms. **More details appear in Part 2 “7.5 Information of the Employees”, page 106-107.**

Employees Development

HARN has consistently set to develop personnel at all levels equally, improve their higher performance and prepare them for tough competition. Learning opportunities and training should be provided for them so they can absorb knowledge, develop skills and gain experience that contribute to the growth of HARN. Annual training in and outside HARN, including business trips abroad, are made available for staff so as to develop their skills. Moreover, HARN puts a great emphasis on following up, assessing, applying gained knowledge to the workplace, sharing it with the team and related sectors.

HARN defined its core values as POSITIVE, which is significant in molding the management and employees to team work behavior consist; (P: Professional Responsibility, O: Ownership, S: Sustainable Development, I: Integrity, T: Teamwork, I: Innovation, V: Value Creation, E: Excellence), clearly reflects identity of smart, conscientious and responsible for HARN and the outside society alike.



HARN is determined to execute its human resource development plan as soon as its employees start working at HARN by providing training focused on knowledge and basic skills necessary for the workplace. The training is also focused on developing good attitudes and EQ so they can be productive and successful at work. Motivating them to develop their potential is also necessary for their work and personal lives.

Sales and service which are central to the success of the business so training sales and service staff is necessary in order for them to gain knowledge, develop their skills, build a positive attitude, get motivated, develop a good personality, have a service mind, and boost their confidence in presenting HARN's products and services to meet the needs of customers. So, they can consult, give advice, solve problems professionally and impress customers with successful management fulfilling HARN's vision that says **"We will be the leader in providing sustainable solutions"**, encourage its staff to have business trips and receive training focused on products, working systems and new technology abroad. Knowledge experience gained will be shared with the team and apply to products and services development in the future.

Due to the situation of the COVID-19 that has severely and continuously in 2021, it is unable to fully implement the human resource development plan. However, HARN still realizes the importance of developing the knowledge and necessary skills to perform the job, as well as other activities in order to promote good relationships within the organization. The work plan will be reviewed and updated in line with the changes that have occurred to further develop HARN's competitiveness.

- Training on ISO 9001:2015 Understanding and Implementation: To enhance knowledge and understanding of working principles in accordance with the standards of the requirements of ISO 9001:2015 Internal Audit for internal auditors to have the skills to prepare and plan internal audit work and to ensure that HARN's quality system is effective and can perform its function as an internal auditor completely.
- Training on Storing and Picking Up Products Correctly and Completely According to the Areas and System: To review the guidelines and procedures to be correct and appropriate as well as compliant with the quality system (ISO) where employees can store products in the designated areas and pick up exactly what they need. This results in saving time and building confidence in the work processes in the organization.



- Training on Introduction to Halocarbon Fill Station: In the form of hybrid training by product experts from abroad to provide employees with knowledge and understanding and be able to properly perform the task of filling fire extinguishers by the standard procedures and mainly having awareness of safety.



- Training on Fire Extinguishing, Air Conditioning, and Refrigeration System: In the form of online training to review the basic principles of the work related to the systems of firefighting, air conditioning, and refrigeration; to enhance knowledge and understanding and to be able to apply it in consulting and recommending products to customers correctly and appropriately



- Training on Introduction to Screw Compressor of BITZER Product: To provide knowledge and understanding of the screw compressors that have an opportunity to grow in the future. The trainees can apply their knowledge to give advice and recommendations to customers in order to understand how to use the product properly.



- Training on Introduction to Electricity, Electrical Installation Design and Intelligent System Technology: To provide employees with basic knowledge of electricity and correct electricity design principles, which is a job that requires knowledge and understanding of many components, such as engineering knowledge, product understanding, maintenance and safety, and application and development of the knowledge to intelligent system technology related to the refrigeration system.





In addition, HARN also promoted employee learning through online learning on the website of the organization in the project of "HARN Academy" in which employees are able to learn anytime and anywhere, supports various communication devices. The topics are related to the important policies of HARN,

personal finance, including the review and test understanding on anticorruption, in order to provide the understanding to the correct practice of executives and employee, as well as the awareness of importance, roles and duties, which is a process of the effective prevention and anticorruption in the organization.

Summary of employee development workshops in 2021

Employee development	Unit	2021	2020	2019	2018
The number of total staff	Person	238	244	254	252
The number of training hours	Hour	2,153	871	2,762	3,713
The number of training hours of each staff on average	Hour	9.05	3.57	10.87	14.73
Expenses on training domestic	Baht	125,752	346,650	1,015,707	1,240,609
Expenses on training abroad	Baht	-	-	2,400,000	933,117
Score of bonding experience	% Bonding experience	81.49%	76.70%	74.47%	68.00%

Course	Description	Unit	2021	2020	2019	2018
Basic Training Course	the fundamental knowledge of the business, its policies, its values, its cultures.	% trained staff	100%	95%	17%	45%
		Average of training hour	13.81	2.71	6.00	2.40
Training Course on Preparation for Greatest Strength	The fundamental knowledge the necessary to be able to take their responsibilities, achieve their goals and develop an understanding towards the pros and cons of the tasks they are given.	% trained staff	93%	100%	50%	57%
		Average of training hour	6.56	4.70	9.31	5.20
Training Course on How to Work Effectively	Increase work potential, understanding of factors affecting you or work, and adapt to adapting to change, increasing management efficiency.	% trained staff	45%	48%	54%	97%
		Average of training hour	3.82	3.36	7.26	10.80
Training Course on Effective Management	Management, learning, innovation development and new technology to be more competitive	% trained staff	2%	0%	16%	12%
		Average of training hour	0.44	0.00	6.75	47.60

Occupational Health, Safety and Working Environment

HARN is concerned about all employees' safety in performance of duties and committed to taking measures to enhance safety standards in accordance with the Occupational Health, Safety and Environment Policy B.E. 2554 (2011). It has established Occupational Health, Safety and Environment Committee which meet monthly to report operation results regarding occupational health, safety and environment, follow up and rectify unsafe working conditions, and review as well as update "Safety Handbook" and work regulations and procedures for use as guidelines for safety in work performance. HARN also participated in and implemented the "Drug Problem Prevention and Solution Standards" project by establishing a policy and having a system for preventing and monitoring the problems, providing knowledge and building understanding, and enhancing the health and quality of life of employees that will be extended to the community and society for good economy in the future.

During the past year of the COVID-19, HARN has provided notifications and reports on the infection situation closely, as well as in the case of infected employees. The measures were executed through the announcement of the operation procedure and report of the results to supervisors and other related agencies, foreign travel prohibition, a 14-day self-quarantine for employees or their close relatives after traveling from abroad, as well as the reduction of crowds in the workplace or risks from public transportation. Employees were taking turns going into the office to work and those who work at home are able to work through the systems normally because of the support of technology; for example, working from home through the VPN system, online meeting, and health reports via Google form which can conclude health data and report to executives regularly.

Number of accidents Classified by characteristics of danger and seriousness Between January and December 2021

Types of Accident	Numbers of Accident						Total
	Passed Away	Disability	Compensation of more than 3 days off	Compensation of less than 3 days off	No Day Off	Damage to Assets	
Objects or structures destructive or fell off	0	0	0	0	0	1	1
Being exposed to chemicals	0	0	0	0	0	0	0
Vehicle Accident	0	0	0	0	0	11	11

- Seminars and basic fire drills are held, including the planning and assigning responsible persons so that the practice is carried out correctly and efficiently on Thursday, December 16, 2021. Illustrates Fire Drill and Evacuation Plan. Assessed by Department of Labor Protection and Welfare as 'Good'



- Annual medical check-up was arranged for employees on Wednesday, February 3, 2021, in which 237 employees undergoing medical examinations, 234 were actually examined, representing 98.74%.



Labor Relations Management

Part of HARN policies is to encourage its staff to participate in various activities so they can have a bonding experience, develop a good attitude towards HARN, stay physically and mentally healthy, and have high employee morale, leading to a sustainable growth.

- Happy Buddy: Buddies from Different Departments**

This activity aims to promote the relationship of personnel within the company. It is a medium for getting to know colleagues from different departments through the activity process that helps create a working atmosphere with fun, learning, more compassion to colleagues, and interactive practice, as well as creative expression.



- HARN NO FAT 2nd: Walk Together**

It is a health promotion activity in the form of “walking”. It encourages employees to realize the importance of strong physical health, helping to reduce the risk of various diseases that may occur, and creating a good atmosphere and relationship within the organization. The employees participated in the activity for 1 month with a total of 5,138,108 steps.



- Annual Merit-Making Event**

It is an opportunity for executives and employees to make merit together to enhance morale and prosperity in life.



- HARN GAMES**

It is an activity to strengthen the relationship to encourage employees to participate in expressing their sports skills, strengthen the health, and practice acceptance and respect to the rules. Therefore, winning and losing in sports is not as important as exercising and having a good relationship among them.



Communication with employees

HARN attaches importance to internal communication with employees to acknowledge the policy operational guidelines and various information related to work and understands in the same direction, HARN has arranged communication channels with employees according to the importance of the matter to be communicated as follows:

- The annual staff meeting on Friday, March 16, 2021, to allow Chief Executive Officer and Executives to share vision, mission and corporate strategy in both short and long term for employees at all levels. in order to create an understanding of performance to achieve the same goals, as well as rewarding the employees whose years of experience have passed the criteria for the purpose of raising morale for work performance and being an important power to organizational success.



- Assessment of employees' engagement and work happiness and satisfaction. As HARN believes that career security, good work environment, good health and happiness at work will contribute to enhancement of work efficiency. In 2021, 144 out of the total of 241 employees, representing 59.75%, responded the questionnaire and the result of which was that HARN scored 81.49%.



LINE Official Account

LINE Official Account: As a channel for speedy communication in addition to communication email and Internal network system (internet) and HARN website.

Human Resource Management and Development with Information Technology

To provide accurate and complete information on Human Resources, as well as to effectively apply information in many aspects and reduce errors from operations, in 2021 HARN has implemented the E-business Plus system for the payroll system, leave, overtime request, medical reimbursement, training, data collection and compensation of employees. On the system, employees are able to promptly make request anytime and anywhere which can convenience and quickly, help to reduce the burden of audit and documentation for human resources. Moreover, from the development of assessment through a system instead of paper, training or meeting registration, training evaluation and testing are able to operate through digital technology.

Responsibility to Consumers

HARN is committed to strengthening customer satisfaction and confidence by delivering quality products based on their requirements along with honoring agreements and conditions made with customers on a fair, complete, prompt and factual basis, as well as foster a sustainable relationship between the customers and HARN through various programs in 2021. These programs included the regular customer visits, to foster good relationships and received further suggestions for improvement. Each year, HARN launched customer satisfaction survey and notify with relevant agencies to improve work process improvement, enhance customers' satisfaction, and create greater relationship. In 2021, resulting in high customers satisfaction increasing compare to 2020.

Customers' Satisfaction	2021	2020	2019
Product			
(quality, variety of products)	88.72	89.73	89.98
Sale persons			
(product knowledge, services, problem solving)	92.11	92.92	90.30
Other services			
(management, providing information, contact channels with the company)	92.70	90.47	89.01
Overall average	91.18	91.04	89.76

Social or Community Development

- HARN is aware of its role as a good member of the society by supporting all public activities for social and environmental benefits and encourages the employees to join up and organize social activities is a reward for society when there is an opportunity in the right budget.
- Collection of old desk calendars, for handed over to the agencies that want for use in the production of teaching materials.



Old desk calendar..we request



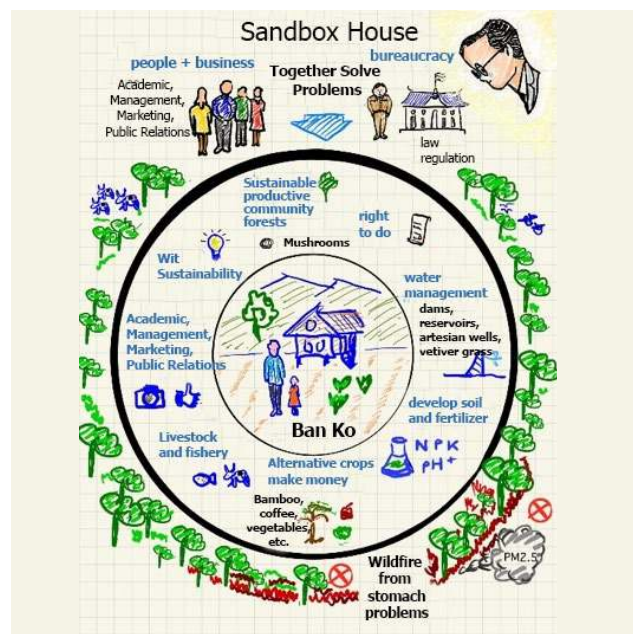
**Invite you to donate old desk calendars.
to make word cards and braille teaching materials
for the School for the Blind, Bangkok**

Donate at Human Resources Department From now until 15 January 2021

- Dr. Jain Charnnarong, the Director, has realized the environmental problems regarding PM 2.5 and begun to study the solutions to reduce forest fires and villagers' poverty which is called "Ban Kor Sandbox," to reduce forest fires and villager's poverty. On behalf of the president of Anandamahidol Foundation Scholarship Recipients' Club, he asked for the cooperation from the civic sector to work with villagers and government officials in solving forest fire problems and reducing the villagers' poverty through water and soil resource managing, reforestation, livestock and fishery, travel, and wisdom creation.

Ban Kor (Kor village), Kor sub-district, Li district, Lamphun province is one of the villages which has suffered the most from forest fires in Thailand. Over the past 22 years, the area of Mae Ping National Park which surrounds Ban Kor has been exposed to forest fires up to 20 times which amounts to burning area between 110,000 -275,000 rai per year.

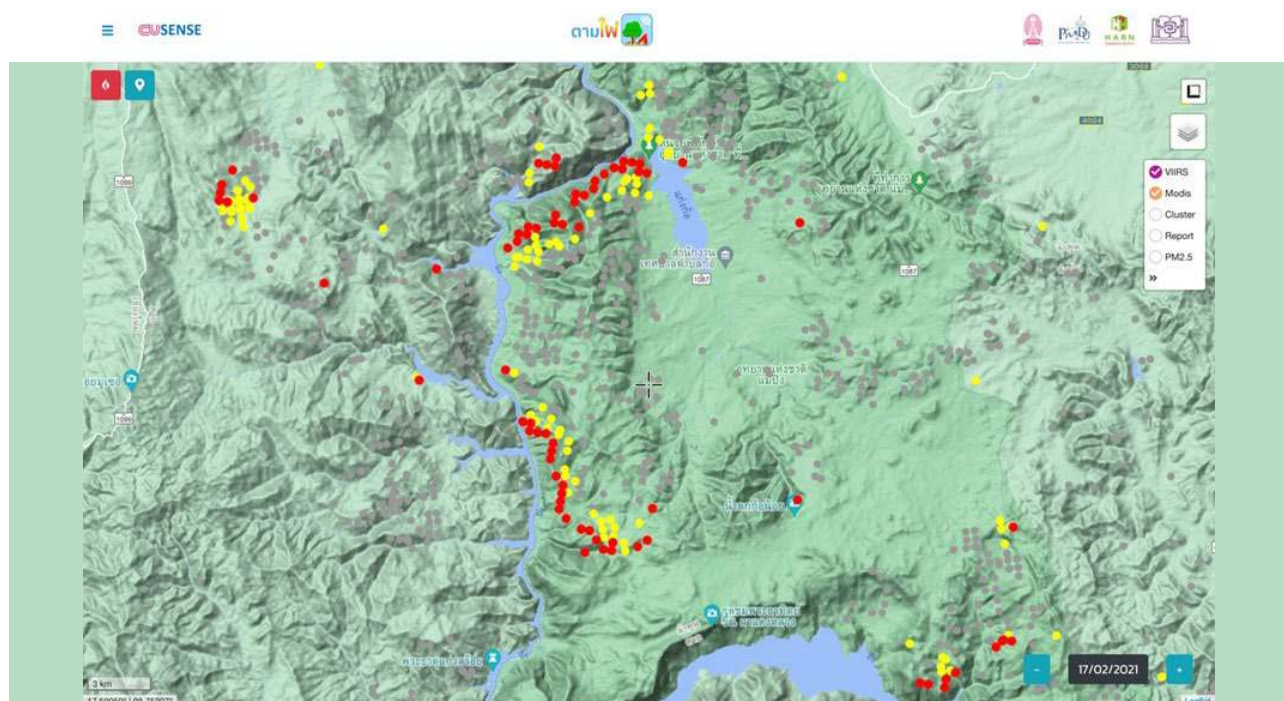
Even the new plants have been recovered after a few months of forest fires, the microorganisms which cannot be seen with the naked eye were also destroyed, especially fungi. The tree roots of the Dipterocarp Family in the Deciduous Dipterocarp forest are colonized by fungi. Such must have fungi provide water and nutrients for plants, and in exchange, the plants will photosynthesize and provide sucrose and glucose to the fungi. The symbiosis relationships bring which will help the abundant trees in the Deciduous Dipterocarp forest, even in dry areas lacking minerals in the soil. But when the forest fires often occur, microorganisms and fungi are destroyed, the Deciduous Dipterocarp forest will dwarf lack the abundant. Moreover, the fires prevent the soil from holding water, which is why Ban Kor had such a long dry season such that other plants could not be grown, except field corn.



To reduce forest fires in the Mae Ping area by raising the quality of life, in 2021 the club encouraged villagers to have the right to make a living in the park area under Section 64. The villagers had a resolution to help the Mae Ping National Park with forest fire prevention, conservation, rehabilitation, and learning to achieve sustainability when they receive the right. The Groundwater Department also initiated a large groundwater supply project to solve the problem of drought caused by the royal initiative to help the people to have water sources for building a tap water supply system in the village in order to solve the water shortage problem, along with using the budget from the Groundwater Fund to develop groundwater for large-scale agriculture of 500 rai, as well as digging over 33 artesian wells in the area under Section 64 to have sufficient water for cultivation for another 500 rai. The addition of groundwater will

help the villagers change their methods from monoculture in the rainy season to mixed crops throughout the year to gain more income and stability and to reduce forest burning according to the objectives.

In addition, in 2021, the company supported the Young Forest Fire Detective Challenge Project, in cooperation with the Office of Policy Administration of the Prime Minister, the Anandamahidol Foundation Scholarship Awardee Association, and Chulalongkorn University, in creating a “Tam Fire” application to display the heat points in a time series, which shows the size and direction of the fire front of wildfires day by day. We will see the behavior of fire from birth until it goes out. When the heat points in a time series are displayed on a map showing things covering the land, it makes us know the motives for incineration to provide long-term protection.



This fire tracking application is open to the public to access and use to analyze forest fires in the area free of charge. From November 13, 2021 to February 11, 2022, it was visited by 10,372 people.

From June 29 to December 31, 2021, an ad hoc academic working group for making recommendations on forest fire management and open burning to support the problem-solving of PM2.5 dust, consisting of Thai and foreign scholars, including representatives from the Geo-Informatics and Space Technology Development Agency (Public Organization) or GISTDA established by the Prime Minister's Policy Administrative Office (Public Organization) with the approval of the Prime Minister, used the Tam Fire application to analyze the occurrence of forest fires by bringing the heat point data to arrange in a daily time series and link it to the map to analyze the direction of movement and time of each fire in an area with

land cover data indicating that it is a forest area. As a result, the working group was able to identify the location and extent of fire in the country's top 4 largest recurring forest fire conservation groups, namely:

- (1) Mae Ping-Omkoi-Mae Tuen Area, amounting to 581,872 rai,
- (2) Pai River Basin - Pai River Basin, Left Bank - Mae Surin Waterfall, amounting to 311,883 rai,
- (3) Salawin - Mae Sariang, amounting to 558,486 rai, and
- (4) Srinakarin Dam, amounting to 166,689 rai

This data set also helped the working group examine the origin and movement of the fire line and lead to the initial assumption of individual bushfire incidents caused by human behavior that vary according to the socio-economic context of each community.

4. Management's Discussion and Analysis (MD&A)

In reading Management's Discussion and Analysis (MD&A), investors are advised to study the supporting documents including the consolidated financial statements, revised financial information, overall past or revised performance, together with note to financial statements and this document.

4.1 Operating Results and Financial Position Analysis of HARN and Subsidiaries

In 2021, the world economic situation started to recover from the COVID-19 pandemic situation as vaccines have been distributed to the people, even if the virus has mutated into new strains that can spread quicker, reduce the vaccine's effectiveness in disease prevention and cause several waves of outbreaks in many countries, including Thailand. The government sector thus set strict measures to control the spread of COVID-19 virus in Thailand, such as closing off the construction sites and temporarily prohibiting labor movement. Relief measures were also issued to assist the private sector and the people to help relieve and reduce the impact from the spread of COVID-19, such as a compensation program for employer and insured employees. As a result of the aforementioned situation, HARN was not able to operate at the construction sites and delivery of the products had to be postponed. In addition, in order to reduce the risk of bad debts of the customers, HARN has reviewed its credit assessment policy towards the customer more carefully. Consequently, in 2021, HARN has revenue recognition from its sales and services with the value of Baht 1,025.98 million, which is a decrease of Baht 126.35 million or equivalent to 10.96%, when compared to that of 2020, in which Harn's sales from revenue and services was Baht 1,152.33 million. Other income in 2021 was Baht 20.15 million, which is an increase of Baht 3.05 million or equivalent to 17.84% from mutual fund investment, earned interests, profit from exchange rates, income from real estate rental and relief compensation from the government sector, etc. Sales and services cost declined to Baht 86.13 million or equivalent to 10.77%. The proportion of the decline in sale and service

costs was at the same rate as the proportion of the decline in revenue. Cost of sale distribution and administrative expense in 2021 were reduced by 1.03% and 4.74%, respectively. The financial cost according to the financial lease increased in value to Baht 2.22 million. There was a net profit in 2021 of Baht 72.23 million, which was a decrease of Baht 25.66 million or equivalent to 26.21% when compared to 2020.

HARN has constantly reviewed estimates used in preparing financial statements. During the year 2021, financial assumptions had been reviewed to be more appropriate and up-to-date. For example, provisions for employee benefits, loss rate from credit sales, calculation of future free cash flow of the refrigeration system and digital print system unit, testing of goodwill impairment, which was an intangible asset from the purchases and the entire business transfer and adjustment of the 2020 financial statement when compared to the new financial statement of 2021, concerning the Employee Joint Investment Program (EJIP), according to the financial report standard of share-based payment valuation criterion, with the details as follows:

1. Review the assumptions in the calculation of employee benefit obligations according to the Actuarial Report regarding the discount rate, turnover rate and rate of salary increase and profit recognition from estimates according to Actuarial Science in the other comprehensive incomes item, with the value of Baht 0.83 million (net from tax income tax)
2. Review calculation results of the loss rate from the credit sale by the Simplified Approach for recognizing allowances for doubtful debts or allowances for expected credit losses of account receivables and other current receivables / assets from revolving contracts that do not have the element of significant financing cost according to the financial report standard no. 9 regarding financial instruments and newly reviewed rates that do not significantly change from 2020.

3. Review the assumptions of goodwill impairment testing as shown in the financial statement with the value of Baht 334.67 million or equivalent to 19.85% of total assets as of December 31, 2021 by hiring an independent appraiser, who has been approved by the Securities and Exchange Commission, for the assessment of business valuation of the refrigeration system and digital printing system according to the report dated October 26, 2021 using the Value in Use approach. By using the Value in Use approach, the present value of the future cash flow (DCF) expected to be received each year from the financial estimates of approximately 5 years (starting from January 1, 2022 until December 31, 2026) with a discount rate based on the calculation of weighted average cost of capital (WACC) appropriate to the risk of the business unit, is measured and the management section considers and views that there is no impairment of the goodwill.
4. Revise financial statement for the year ended December 31, 2020, which is presented and compared with the financial statement of 2021, regarding the Employee Joint Investment Program (hereinafter referred to as EJIP), with the program period starting from May 2020 until April 2025, to be in accordance with the terms of the financial report standard no.2 regarding share-based payment valuation as criterion (TFRS 2). In the aforementioned revision, HARN recognizes the increase in service cost, distribution cost and administrative expenses and the decrease in expenditures on related corporate income tax, which results in having the gross profit and net profit in 2020 to be reduced in the value of Baht 0.55 million and Baht 2.99 million, respectively.
- However, HARN can still maintain similar gross profit rates, namely 30.59%, 30.59% and 30.44% for the years 2019-2021, respectively.

Overall Performance of HARN and Subsidiaries

Revenues from Sales and Services

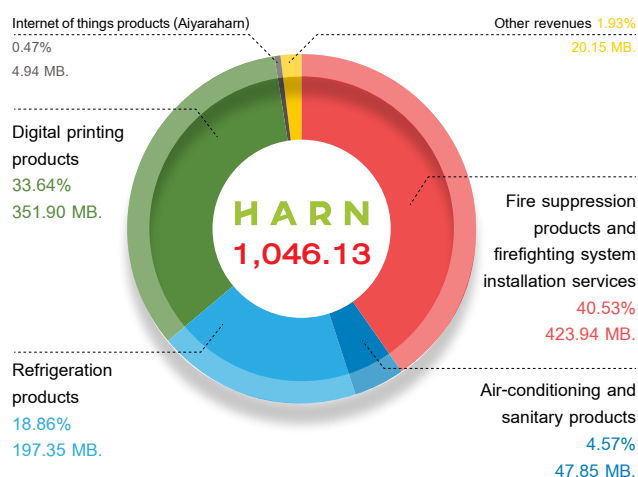
Revenue	For the year ended December 31							
	2021		2020		Increase/ (Decrease)		2019	
	MB	%	MB	%	MB	%	MB	%
Sales and Services Revenues								
1. Fire Protection Products and Projects	423.94	40.53	534.18	45.68	(110.24)	(20.64)	644.12	46.21
2. Sanitary and Air-conditioning Products	47.85	4.57	63.82	5.46	(15.97)	(25.02)	81.10	5.82
3. Refrigeration Products	197.35	18.86	202.83	17.34	(5.48)	(2.70)	262.00	18.80
4. Digital Printing Products	351.90	33.64	349.07	29.85	2.83	0.81	379.66	27.24
5. Internet of things Products (Aiyaraharn)	4.94	0.47	2.43	0.21	2.51	103.29	-	-
Total Sales and Services Revenues	1,025.98	98.07	1,152.33	98.54	(126.35)	(10.96)	1,366.88	98.07
Other Income ¹⁾	20.15	1.93	17.10	1.46	3.05	17.84	27.09	1.93
Total Revenues	1,046.13	100.00	1,169.43	100.00	(123.30)	(10.54)	1,393.97	100.00

Note : ¹⁾ Other income included gains/losses on investment in mutual funds and marketable securities, interest receivable, dividend income, and foreign exchange gains/losses, including rental and service income from investment properties etc.

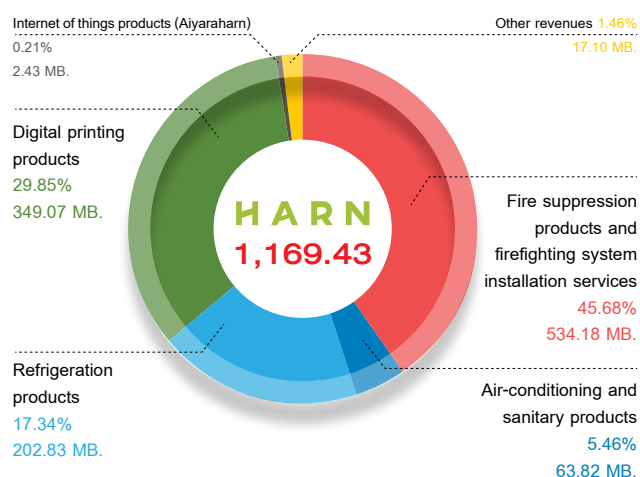
The revenue from sales and services consists of the revenue from Fire Protection Products and Projects at 40.53%, Sanitary and Air-conditioning Products at 4.57%, Refrigeration Products at 18.86%, Digital Printing Products at 33.64%, Internet of Things Products at 0.47% and other income of 1.93% with the total revenue between 2019 - 2021 of Baht 1,393.97 million, Baht 1,169.43 million and Baht 1,046.13 million respectively. Although the revenue from Fire Protection System and Projects

was affected by the coronavirus outbreak situation which caused the decrease of revenue in 2021 to Baht 110.24million, or 20.64% compared to 2020, HARN still has backlog orders with high value and are expected to deliver at significant value by 2022. HARN does not rely on any particular customer and does not earn sales and services income from any particular external customer individual, who accounts for sales starting from 10% of the total sales onwards.

Revenue Structure 2021 from Financial Statements Duly Audited and by Auditor



Revenue Structure 2020 from Financial Statements Duly Audited and by Auditor



Cost of Sales and Service

Cost	For the year ended December 31							
	2021		2020 (Restated)		Increase/ (Decrease)		2019	
	MB	%	MB	%	MB	%	MB	%
Cost of Sales and Services								
1. Fire Protection Products and Projects	311.39	73.45	397.37	74.39	(85.99)	(21.64)	487.06	75.62
2. Sanitary and Air-conditioning Products	33.74	70.51	43.87	68.74	(10.13)	(23.09)	58.69	72.37
3. Refrigeration Products	143.17	72.55	138.12	68.10	5.05	3.66	174.11	66.45
4. Digital Printing Products	222.04	63.10	218.40	62.57	3.64	1.67	228.83	60.27
5. Internet of things Products (Aiyaraham)	3.37	68.22	2.07	85.19	1.30	62.80	-	-
Total Cost of Sales and Services	713.71	69.56	799.83	69.41	(86.13)	(10.77)	948.69	69.41
Gross Profit	312.27	30.44	352.49	30.59	(40.22)	(11.41)	418.19	30.59

The significant costs of sales and services are the costs of products, import cost, transportation cost and including the salary of in charge engineers along with installation team and the contractor's fee for equipment installation, for the year 2019 to 2021 HARN had cost of sales and services total Baht 948.69 million,

Baht 799.28 million and Baht 713.71 million respectively estimated to be 69.41%, 69.36% and 69.56% of total income from sales and services. The gross profit margin was 30.59%, 30.59% and 30.44% respectively.

Distribution Cost & Administrative Expenses

Expenses	For the year ended December 31							
	2021		2020 (Restated)		Increase/ (Decrease)		2019	
	MB	%	MB	%	MB	%	MB	%
Distribution Cost & Administrative Expenses								
Distribution Cost	107.57	10.28	108.69	9.29	(1.12)	(1.03)	117.56	8.43
Administrative Expenses	132.50	12.67	139.10	11.89	(6.60)	(4.74)	140.78	10.10
Total distribution Cost & Administrative Expenses	240.07	22.95	247.79	21.19	(7.72)	(3.12)	258.34	18.53
Total Revenues	1,046.13	100.00	1,169.43	100.00	(123.30)	(10.54)	1,393.97	100.00

Distribution Cost

HARN's Distribution Cost for the year 2019-2021 was at Baht 117.56 million, Baht 108.69 million and Baht 107.57 million respectively, with the rate of 8.43%, 9.29% and 10.28% of total revenue respectively. Distribution cost consisted of salary and welfare of sale officers, commission and sale promotion and depreciation of the demo, etc. The ratio of distribution cost to total revenue in 2021 declined by 1.03% from 2020, which is less than the decline of the total income. This is because some part of the distribution cost structure is a fixed expense, which causes the decrease of expense not to be in the same proportion as the decrease of the total revenue of HARN.

Administrative Expenses

HARN's administrative expense for the year 2019 - 2021 was at Baht 140.78 million, Baht 139.10 million and Baht 132.50 million respectively, with the rate of 10.10%, 11.89% and 12.67% of total revenues respectively. Administrative expenses consisted of salary and employee welfare for supporting teams, executives and board of directors, amortization of the right of use for buildings and warehouses, utilities costs, depreciation and various professional fees. There are also non-monetary expenses related to the amortization of customer relationships and additional depreciation resulting from the fair valuation of fixed assets acquired from purchase and entire business transfer, and allowance for doubtful debts. These administrative expenses are according to the terms of the financial report standards, which are non-cash item accounting expense. The ratio of administrative expense to the total revenue in 2021 declined from 2020 by 4.74%. Part of the reason is due to the decrease in doubtful debt and amortization of customer's relation as result of a change in accounting estimation because the structure of the majority of the administrative expenses are fixed expenses, thus when they are compared as ratio to the decreased total revenue in the previous year, it can be seen that the rate has increased even though the administrative expense has declined.

Net Profit

HARN has total net profit of owners of the parent for the years 2019 - 2021 of Baht 149.62 million, Baht 97.98 million and Baht 72.27 million respectively. HARN's net profit margin was at 10.73%, 8.73% and 6.90% with comparison of total revenues in the respective years.

On July 8, 2020, HARN co-invested and registered a company, named "Aiyaraharn Co., Ltd." and HARN and its joint investor hold 65% and 35% of the total issued shares of such company. The objective of HARN is to improve the system of IoT Products and Solutions through the implementation plan which focuses on the services of SMART Building solution and initiates the business from the current customer base of the companies in the condominium, high-rise buildings and cold storage group in order to expand the business for more sustainable growth.

On July 30, 2019, HARN invested in establishing a subsidiary in Vietnam under the Harn Vietnam Co., Ltd. to support HARN's domestic customers who moved their production base to Vietnam. and increasing the acquisition of new customers abroad. However, the subsidiary's operations are still in the early stages of acquiring customers and the operations still rely on the assistance of HARN in the form of working capital, and guarantees for purchase orders from manufacturers in the UK to enhance operational liquidity

In the criteria for preparing the consolidated financial statements, there were the eliminations of intercompany transactions, inventory's profit, intercompany receivable and intercompany payable, as well as investments and shareholders' equity of Subsidiaries company.

Other comprehensive income (OCI)

HARN gained the comprehensive income of year 2019-2021 in the amount of Baht 147.98 million, Baht 97.58 million and Baht 73.52 million, respectively. HARN recognized the exchange differences on translating the financial statements of the Vietnamese subsidiary net of tax in the year 2021 and 2020 in the amount of Baht 0.42 million and Baht (0.40) million, respectively.

In 2021, HARN recognized the gain from net actuarial assumptions of employee benefit net of tax of Baht 0.83 million.

Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA)

EBIT and EBITDA	For the year ended December 31							
	2021		2020 (Revised)		Increase/ (Decrease)		2019	
	MB	%	MB	%	MB	%	MB	%
Earnings Before Interest and Taxes (EBIT)	92.35	8.83	121.80	10.42	29.45	(24.18)	186.95	13.41
Depreciation and Amortization - cost basis	29.93	2.86	16.34	1.40	13.59	83.17	15.47	1.11
Depreciation and Amortization - fair value appraisal	0.24	0.02	0.71	0.06	(0.47)	(66.20)	1.25	0.09
Customer Relation Amortization	13.85	1.32	17.95	1.53	(4.10)	(22.84)	14.90	1.07
Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA)	123.60	13.04	153.05	13.41	(20.43)	(13.03)	218.57	15.68
Total Revenue	1,046.13	100.00	1,169.43	100.00	(123.30)	(10.54)	1,393.97	100.00

HARN obtained the Earnings Before Interest, Tax, Depreciation and Amortization (EBITDA) in 2019 - 2021 in the amount of Baht 218.57 million, Baht 153.05 million and Baht 123.60 million, respectively, accounting for 15.68%, 13.41% and 13.04% when compared to the total revenue, respectively. In 2021, monetary profit decreased due to the lower revenue from sales and services, while distribution cost and administrative expenses reduced to a lesser proportion. In addition, the

recognition of the allowance for doubtful accounts increased due to the fact that some receivables lacked liquidity and/or paid off debt later than the credit term. However, this was in accordance with the best forecasting in consideration of possible risk which was based on data on previous repayment and independent expert estimates. (More details are shown in the topic of account receivable.)

The Company's Asset Management Capability HARN and Subsidiaries

Financial Position Analysis as of December 31, 2021, 2020 and 2019

HARN had the total assets as of December 31, between the years 2019 - 2021 of Baht 1,596.30 million, Baht 1,658.20 million and Baht 1,685.72 million respectively.

As of December 31, 2021 major assets as percentage of total assets comprised of cash and other current financial assets in a proportion of 16.76%, trade account, other receivables and other current contract asset of 15.76%, inventories 19.48%, investments property accounted for 9.13% and the goodwill is 19.85% while the customer relationship is considered another intangible asset, accounting for 1.57%, both goodwill and

relationships with customers had been tested for impairment in accordance with financial reporting standards annually.

As of December 31, 2020 major assets as percentage of total assets comprised of cash and other current financial assets in a proportion of 18.88%, trade account, other receivables and other current contract asset of 15.91%, inventories 15.55%, investments property accounted for 9.32% and the goodwill is 20.18% while the customer relationship is considered another intangible asset, accounting for 2.43%, both goodwill and relationships with customers had been tested for impairment in accordance with financial reporting standards annually.

Trade Receivable

Trade receivable	As of December 31, 2021							
	2021		2020		Increase/ (Decrease)		2019	
	MB	%	MB	%	%		MB	%
Trade Receivable by Segments								
1. Fire Protection & Sanitary Products and Projects	138.76	106.54	136.64	92.26	1.55		165.65	76.88
2. Refrigeration Products	45.00	74.48	35.53	87.01	26.65		61.17	87.83
3. Digital Printing Products	51.29	50.52	46.12	56.45	11.21		61.85	57.78
4. Internet of things Products (Aiyaraharn)	-	-	-	-	-		-	-
Total Trade Receivable by Segments	235.05	80.65	218.29	80.29	7.68		288.67	73.68

Trade and other current receivables	As of December 31, 2021						
	2021		2020		Increase/ (Decrease)	2019	
	MB	%	MB	%	%	MB	%
Trade and other current receivables							
Trade receivable	235.05	92.02	218.29	86.97	7.68	288.67	89.39
Other current receivables	26.45	10.35	36.05	14.36	(26.63)	34.73	10.75
Current contract assets	6.58	2.58	8.16	3.26	(19.36)	6.84	2.12
less Allowance for Doubtful Accounts	(12.64)	(4.95)	(11.51)	(4.59)	9.82	(7.29)	(2.26)
Trade Receivable and Other Receivables - Net	255.44	100.00	250.99	100.00	1.77	322.95	100.00

As of December 31, 2021 HARN's account receivables can be divided into 4 products groups which are 1) Fire protection, sanitary and air conditioning systems 2) Refrigeration system 3) Digital printing system and 4) Internet of things system with the account receivable turnover, In 2019 - 2021 (excluding other receivables and allowance for doubtful accounts) of 73.68 days, 80.29 days and 80.65 days respectively and has finance lease receivables due within one year were classified to trade and other current receivables.

HARN had a policy to provide an allowance for doubtful accounts for the estimated losses that may arise from the inability to collect from receivables. TFRS 9: Financial instruments prescribes the businesses to recognize the expected credit loss by considering the past and present debt repayment history, as

well as the future economic situation forecasting that may affect customer debt collection, and hire outside experts to calculate the expected rate of debt collection, and also estimate the allowance for doubtful accounts of HARN. In 2019 - 2021, HARN recorded the allowance for doubtful accounts at the rates of 2.26%, and 4.59% and 4.95% of net trade and other receivables, respectively. In 2021, the allowance for doubtful accounts has been higher than the previous year since some customers have been affected by the economic situation and lack of liquidity, so they are unable to pay their debts on time. The following is the information on the debt collection of the customer by the value of the payment, term credit and average collection period in three main business units of HARN (excluding information of Subsidiaries companies).

Customer groups sorted payment	2021				2020				Overdue (days) Inc./ (Dec.)
	Collection Amount (%)	Average Credit Term (days)	Average Collection (days)	Overdue (days)	Collection Amount (%)	Average Credit Term (days)	Average Collection (days)	Overdue (days)	
1.Fire Protection, Sanitary and Air-Condition Products									
Top 20 customers	41.12	59.86	93.55	33.69	41.37	53.46	89.82	36.36	(2.67)
Top 50 customers	61.18	58.18	89.14	30.96	60.68	54.28	90.89	36.61	(5.65)
Top 100 customers	75.95	55.40	86.95	31.55	76.44	52.59	87.55	34.96	(3.41)
Total	100.00	48.60	77.11	28.51	100.00	47.53	79.93	32.40	(3.89)
2.Refrigeration Products									
Top 20 customers	72.49	60.04	87.38	27.34	67.52	45.09	71.82	26.73	0.61
Top 50 customers	88.17	56.52	81.92	25.40	87.71	43.65	70.42	26.77	(1.37)
Top 100 customers	95.67	54.29	78.75	24.46	95.31	43.09	69.21	26.12	(1.66)
Total	100.00	53.02	77.05	24.03	100.00	42.25	67.89	25.64	(1.61)
3.Digital Printing Products									
Top 20 customers	36.84	37.38	64.68	27.30	34.97	43.19	60.26	17.07	10.23
Top 50 customers	57.05	35.64	58.62	22.98	57.26	38.88	58.27	19.39	3.59
Top 100 customers	73.06	34.48	56.41	21.93	72.58	37.04	55.79	18.75	3.18
Total	100.00	32.35	52.98	20.63	100.00	34.54	53.56	19.02	1.61
ToTal									
Top 20 customers	27.38	60.28	90.29	30.01	28.18	51.47	86.18	34.71	(4.70)
Top 50 customers	43.53	54.21	85.19	30.98	42.68	54.28	83.97	29.69	1.29
Top 100 customers	58.22	52.48	80.64	28.16	57.46	49.24	80.23	30.99	(2.83)
Total	100.00	43.95	68.94	24.99	100.00	42.86	70.20	27.34	(2.35)

The information on the collection period shown above, it can be seen that the number of days of receiving payments are higher than the average of the original credit of all three business units; fire protection sanitation and air conditioning products were 28.51 days above average credit term, refrigeration system products were 24.03 days above average credit term, the digital printing system product was 20.63 days above average credit

term and the overall figure was higher than the average credit term 24.99 days, but the number of overdue days were little reduced from 2020 by 2.35 days. However, HARN has reviewed the credit limit, term credit and followed up on debt repayment regularly in order to reduce credit risks to be appropriate and competitive.

Finished Goods

Finished Goods	As of December 31, 2021						
	2021		2020 (Restated)		Increase/ (Decrease)	2019	
	MB	Turn Over (days)	MB	Turn Over (days)	%	MB	Turn Over (days)
1. Fire Protection & Sanitary Products and Projects	162.76	156.03	132.30	111.55	23.02	137.10	91.79
2. Refrigeration Products	66.71	163.44	61.51	185.14	8.45	78.61	149.21
3. Digital Printing Products	58.97	92.27	53.29	103.14	10.66	70.13	104.44
4. Internet of things Products (Aiyaraharn)	0.20	11.10	-	-	n/a	-	-
Total Finished Goods	288.64	137.00	247.10	121.61	16.81	285.84	105.38

Inventories	As of December 31, 2021						
	2021		2020		Increase/ (Decrease)	2019	
	MB	%	MB	%	%	MB	%
Inventories							
Finished Goods	288.64	87.92	247.10	95.83	16.81	285.84	93.71
Goods in Transit	73.65	22.43	40.82	15.83	80.43	43.59	14.29
Less Allowance for obsolescence and slow moving stocks	(33.99)	(10.35)	(30.07)	(11.66)	13.04	(24.39)	(8.00)
Inventories - Net	328.30	100.00	257.85	100.00	27.32	305.04	100.00

As of December 31, 2021, HARN had inventories divided into 4 products groups which are 1) Fire protection, sanitary and air conditioning systems 2) Refrigeration system 3) Digital printing system and 4) Internet of things system with the inventory turnover (excluding goods in transit and before allowance for loss on devaluation of inventories) of 2019-2021 was 105.38 days, 121.61 days and 137 days respectively. In 2021, there is lower inventory turnover. This is because some customers postpone their products delivery and some products have not yet been completed to orders and has ready-for-sale products and services from the backlog orders which have been received from customers and orders in the future.

HARN has a policy to allowance for obsoleted goods or slow rotation items by setting two criteria when considering allowance for obsoleted goods or slow rotation, are 1) goods of two or more years old, 2) annual turnover rate less than 20% of the items of units of inventories for two consecutive years, HARN believes that the condition for the allowance for obsoleted goods or slow rotation will be enough conservatism to maintain the inventory value state no higher value than the Net Realizable Value according to the Thai Financial Reporting Standards, However allowance for obsoleted goods or slow rotation is considered low for the year 2019 to 2021 at 8.00%, 11.66% and 10.35% of the net inventory respectively.

Investment property

Property type	Net book value (million baht) as of December 31			
	2021	2020	Increase/ (Decrease)	2019
Land	135.29	135.29	-	172.65
Factory Buildings	17.86	18.35	(0.49)	54.18
Building Improvement	0.66	0.75	(0.09)	2.39
Tools and equipment	0.13	0.20	(0.07)	0.75
Total investment property - net	153.94	154.59	(0.65)	229.97

According to the Board of Directors meeting No. 5/2018 on November 9, 2018, it was resolved to purchase land with warehouse size of 6-2-00 rai (originally, one undeveloped plot of land with an area of 5-0-90 rai and a price of Baht 114.95 million) in the amount of Baht 117.00 million. The utility space of the warehouse building consisted of three stalls of two-story reinforced concrete building with utility space of 5,690 square meters, as well as the Permit for factory operation (Ror Ngor. 4). In 2020, HARN changed its objective in holding part of the land and building from being leased to being used as HARN's warehouses by cancelling one warehouse lease contract with an outsider and another warehouse lease contract with a related individual. HARN started using warehouses in the area of HARN since May 2020, HARN transferred investment property with an accounting value of Baht 74.13 million to land, building and equipment. At present, there is one warehouse tenant, with a lease contract starting on July 1, 2021 and expiring on June

30, 2024, which is considered as maximum use of space and is according to the present plan of warehouse use.

Two parcels of land, buildings and construction were assessed from two independent appraisers by the market price criteria in the valuation of land and depreciated replacement criteria in the valuation of construction. The fair value amounted to Baht 238.40 million, consisting of investment property in the value of Baht 159.51 million and land and building with a value of Baht 78.89 million. According to the report dated December 22, 2020 and December 23, 2020.

HARN has income from rental of investment properties for the year ended December 2021 and 2020 in the amount of Baht 2.75 million, and Baht 6.10 million respectively and operating expenses in the amount of Baht 1.40 million and Baht 0.97 million respectively. Such decreased rent and expenses were caused by the expiration of the lease of one tenant in April 2020. HARN has used the said area as HARN's own warehouse.

Property, Plant and Equipment

Property type	Net book value (million baht) as of December 31			
	2021	2020	Increase/ (Decrease)	2019
Land	37.36	37.36	-	-
Buildings and structures	33.54	34.44	(0.90)	-
Tools and equipment	4.40	4.74	(0.34)	2.03
Furniture and office equipment	26.14	11.51	14.63	5.70
Vehicle	8.55	10.43	(1.88)	11.97
Assets for rent and demonstration	25.17	8.47	16.70	10.97
Assets under construction	0.62	22.63	(22.01)	-
Total Property, Plant and Equipment	135.78	129.58	6.20	30.67
Less impairment allowance	-	(0.05)	(0.05)	-
Property, Plant and equipment - net	135.78	129.53	6.25	30.67

As of December 31, 2021, HARN has property, plant and equipment - net of Baht 135.78 million which increased from investment in technology equipment systems and furniture of the new headquarters building. HARN has remaining payment

obligations according to the sale contract of equipment and office building access security system and sales contract of decoration and installation, with the value of Baht 6.38 million.

Assets Right-of-Use

Property Type	Net book value (million baht) as of December 31			
	2021	2020	Increase/ (Decrease)	2019
Buildings	93.49	104.44	(10.95)	2.81
Office equipment	0.76	0.53	0.23	-
Total Assets Right-of-Use, net	94.25	104.97	(10.72)	2.81

As of December 31, 2021, HARN has net assets right-of-use in the value of Baht 94.25 million, which is a decrease from amortization during the year with the value of Baht 11.18 million. Assets right-of-use consisted of lease contract of the headquarters building, with a lease period of 3 years, in which HARN can renew the lease contract for another 7 years according to the terms indicated in the contract and after which there may be negotiations to further extend the contract, warehouse lease contract (Branch No.8), with lease period of 3 years, after which there may be negotiations to further extend the contract and lease contract of photocopier office equipment, lease period of 4 years. HARN will not recognize assets right-of-use for a lease contract that has a contract period of less than 12 months and does not have the right of purchasing or

lease contract in which reference assets have low value. All of which are according to the financial report standard no.16 regarding lease contract.

Regarding changes of accounting standards concerning the said lease contract, there has been a change from recording the paid lease in each installment as expenses to a recognition of assets right-to-use and liability according to the lease contract, in which assets right-to-use was gradually disposed of as amortization and financial cost recognized throughout the lease period. The said changes cause the return on asset ratio to decrease, debt to equity ratio to increase and profit before financial cost, income tax, depreciation and amortization (EBITDA) increase.

Goodwill and customers relationship

Property Type	Net book value (million baht) as of December 31			
	2021	2020	Increase/ (Decrease)	2019
Goodwill	334.67	334.67	-	334.67
Customer relationship	104.31	104.31	-	104.31
<u>Less</u> accumulated amortization	(77.83)	(63.98)	13.85	(46.03)
Customers relationship - Net	26.48	40.33	(13.85)	58.28
Total Goodwill and customer relationship	361.15	375.00	(13.85)	392.95

Goodwill is an intangible asset to HARN. It arrives from entire business transfer from Chillmatch Co., Ltd and QIIS Co., Ltd. It is done by issuing shares of Baht 675.36 million. The swap ratio is equal 0.67. This is to exchange for net identified assets of both companies at fair prices of Baht 340.69 million. This leads to intangible assets being valued at Baht 334.67 million. Under the financial reporting standards, Goodwill must be reviewed every year for impairments. To test the impairments of Goodwill in financial statement for the years ending 2020, HARN has listed value in use from expected future cashflow of cash generating unit (CGU) i.e., refrigeration products and digital printing products. Adjusted in 0% terminal growth rate. Impairment of current value with impaired rate that is risk reflective to cash generating unit. The discount rate for the years ending 2020 were 6.12%.

Consequently, in 2021, HARN hired an independent appraiser who has been approved by the Securities and Exchange Commission in the assessment of Value in Use by using the approach of Present Value of Future Free Cash Flow (DCF) which is expected to receive each year from the financial estimates of approximately 5 years (starting from 1 January 2022 until 31 December 2026) with the discount rate based on calculation of Weighted Average Cost of Capital (WACC) of business unit, at the rate of 8.72%, respectively, with reference to the concept of Capital Asset Pricing Model (CAPM). According

to the report dated October 26, 2021, the summary of goodwill impairment testing indicates that there has been no impairment of goodwill, that is, present value of the net cash inflow of cash generating unit is more than the indicated intangible assets and fixed assets of the said business unit.

Customer relationship are intangible assets, estimated from the business' values of Chillmatch Co., Ltd and QIIS Co., Ltd by the certified appraiser from the list of the Securities and Exchange Commission. As reported on October 3, 2016, HARN issued policy to write off customer related intangibles with straight-line method for 7 years. In addition, HARN has regularly record total sales and sales portion, and compare total sales of each cash generating unit, which is used as information for consideration of customer relation impairment according to the financial report standard. The said information indicates impairment of customer relation for some customers in 2020 to have an accounting value of customer relation to be Baht 3.05 million in which HARN has recognized it as amortization in the profit/loss of 2020 in the said value. As for 2021, the summary of the testing finds that there has been no additional impairment of customer relations. HARN will continue to collect sales data of each customer in order for the display of customer relation value to be appropriate and correct according to the financial reporting standards.

Trade and Other Current Payables

Trade and Other Current Payables	As of December 31, 2021						
	2021		2020 (Restated)		Increase/ (Decrease)	2019	
	MB	Turn Over (days)	MB	Turn Over (days)	%	MB	Turn Over (days)
Trade Payables	115.25	48.04	93.63	47.77	23.09	104.65	44.38
Other Payables							
• Accrued Expenses	42.27	n/a	42.08	n/a	0.45	51.32	n/a
• Others	46.43	n/a	31.95	n/a	45.32	43.87	n/a
Total Trade and Other Current Payables	203.95	48.04	167.66	47.77	21.64	199.84	44.38

Cash Conversion Cycle

Description	For the year ended December 31			
	2021	2020 (Restated)	Increase/ (Decrease)	2019
Average collection period (days)	80.65	80.29	0.36	73.68
Average sales period (days)	137.00	121.61	15.39	105.38
<u>Less</u> Average repayment period (days)	<u>(48.04)</u>	<u>(47.77)</u>	<u>0.27</u>	<u>(44.38)</u>
Cash Conversion Cycle (days)	169.61	154.13	15.48	134.68

HARN had the cash conversion cycle for the years 2019 - 2021 in the amount of 134.68 days, 154.13 days and 169.61 days, respectively. The overall cash conversion cycle has increased. This is because of some customers faced some liquidity problem from the COVID-19 pandemic situation and the product sale period has increased from the additional purchase of products in order to support the product delivery according to Backing Order and delayed product delivery than the expected plan, while the payment period was not much longer. From the

policy of maintaining a relationship with foreign partners by whom HARN was appointed as a distributor of world-famous products, if HARN loses its distribution of significant branded products, it may cause the long-term revenue of HARN. To maintain the good relationship, it should be initiated from the maintenance of financial credit and still able to bargain prices of products and services. The cost of the product was the most important cost of the trading company which would increase the competitiveness and maintain the profitability of HARN sustainably.

Types of credit limits and interest rates

Types of credit	Facilities (Million Baht)		Interest rates (% per annum)	
	2021	2020	2021	2020
Overdraft	10.00	10.00	MOR, MOR-0.50	MOR, MOR-0.50
Letter of Credit / Trust Receipt	150.00	150.00	MLR-1, MMR	MLR-1, MMR
Letter of Guarantee	74.00	74.00	1.25 - 2%	1.25 - 2%
Forward Contract	560.00	560.00	-	-
Total	794.00	794.00		
Forward Contract (Million USD)	7.00	7.00		

In the year 2019 - 2021, HARN's liquidity level is high, as can be seen from the current ratio of 3.98 times, 4.37 times and 3.89 times respectively. This shows that HARN is efficient in managing its liquidity and working capital better. HARN obtains capital structure that is not of loan from banks nor financial

institutions. Therefore, there is not payable interest and debt to equity ratio is relatively low. HARN has short term loan and credit facilities to support the expansion of its businesses and/or to invest in engineering business in the future.

Foreign Exchange Risks

Currency	2021		2020	
	Proportion of Import according to Currency (%)	Proportion of Foreign Exchange Forward Contract to Avoid Risk (%)	Proportion of Import according to Currency (%)	Proportion of Foreign Exchange Forward Contract to Avoid Risk (%)
United States Dollar	43.94	85.99	48.31	89.48
Euro	21.38	92.41	21.78	78.98
Pound Sterling	33.71	90.34	29.27	86.35
Yen	0.74	53.41	0.43	69.57
Singapore Dollars	0.09	-	0.14	2.53
Other	0.14	-	0.07	-
	100.00		100.00	

* Foreign exchange risk

Currency	As of December 31, 2021			As of December 31, 2020		
	Trade account payables	Risk hedging		Trade account payables	Risk hedging	
		Foreign Exchange Forward Contract (Balance)	% Proportion		Foreign Exchange Forward Contract (Balance)	% Proportion
United States Dollar	968,687	245,880	25.38	500,370	653,237	130.55
Singapore Dollars	-	-	-	1,250	-	-
Euro	428,228	303,736	70.93	370,476	191,999	51.82
Pound Sterling	594,410	233,355	39.26	847,666	612,775	72.29
Yen	-	-	-	177,920	-	-

* Information in the above table is from the separated financial statement of HARN

Foreign exchange gains and losses

unit : Million Baht

Description	2021	2020	Increase/ (Decrease)	2019
Unrealized gain (loss) on exchange rate	1.47	0.33	1.14	(0.21)
Realized gain (loss) on exchange rate	2.14	1.61	0.53	4.84
Total gain (loss) on exchange rate	3.61	1.94	1.67	4.63

HARN entered into forward contracts with banks, based on consideration of appropriate foreign exchange and delivery period to ensure availability for debt settlement and by keeping abreast of updated information on and analysis of foreign exchange to decrease currency volatility risk. On average, while most of the sales of products are domestic products in Thai baht currency. It is, sometimes, impractical to adjust the

product price in accordance with the increased cost of the product immediately. Therefore, HARN may be affected by the fluctuation of exchange rates which will affect the cost of products and the gross profit of HARN. However, HARN has an agreement for some customers to settle prices in USD, EUR and GBP on HARN's foreign currency deposit accounts. It is considered that HARN protects against exchange rate risks.

As of December 31, 2021 and 2020, HARN had protected against the risks in currency exchanges of USD, EUR and GBP for its trade payables in foreign currencies, including the purchase orders which cannot be cancelled (Firmed Commitment) due to the high value of the products, and HARN issued sales orders to customers by agreeing to the terms of payment in Thai baht. HARN has no policy to speculate in currency fluctuations since it is not a core business and does not have enough expertise in forecasting future movements in exchange rates, but it only wants to reduce the exchange rate

risk that will affect the inflow and outflow in the future to be in a controlled level. As a result of the aforementioned impacts, HARN recognized foreign exchange gain in the year 2021 and 2020 amount of Baht 3.61 million and Baht 1.94 million respectively.

Moreover, as of the end of 2021 and 2020, HARN had a USD 0.39 million deposits and USD 1.06 million deposits respectively from a local institution in order to protect the foreign exchange risk of product orders from abroad as well.

Liquidity and Working Capital

Cash Flows from HARN's Financial Statement

unit : Million Baht

Description	For the year ended December 31			
	2021	2020	Increase/ (Decrease)	2019
Net Cash Flow from Operating Activities	68.25	184.44	116.19	150.99
Net Cash Flow from (Used in) Investing Activities	(45.69)	100.09	145.78	40.37
Net Cash Flow from (Used in) Financing Activities	(86.76)	(105.25)	18.49	(93.52)
Effect of translation adjustment on foreign currency financial statements	0.96	(0.31)	1.27	(0.05)
Net Increase (Decrease) in Cash and Cash Equivalents	(63.24)	178.97	(242.21)	97.79
Cash and Cash Equivalents - B/F	306.07	127.10	178.97	29.31
Cash and Cash Equivalents - C/F	242.83	306.07	(63.24)	127.10

Analyzing the Cash Flows Statement for the year ended December 31, 2021

HARN had net cash flows from the business operation in 2021 of Baht 68.25 million, an decrease Baht 116.18 million when compared to 2020, mainly due to the decrease in net profit Baht 25.66 million, and inventories (before allowance for stock obsolescence) increased by Baht 78.31 million. While the trade accounts payable and other accounts payable increased by only Baht 34.06 million, cash flow used in the investment activity for 2021 in the value of Baht 45.69 million is from the purchase of investment unit of real estate fund in the amount of Baht 29.79 million and intangible assets of Baht 16.25 million.

The cash flows used for financing came from the dividend declaration at the rate of Baht 0.13 per share, representing Baht 75.98 million and debt payment according to the lease contract in the amount of Baht 11.28 million.

Analyzing the Cash Flows Statement for the year ended December 31, 2020

HARN had net cash flows from the business operation in 2020 of Baht 184.44 million, an increase Baht 33.44 million when compared to 2019, mainly due to receivable and other receivable (before allowance for doubtful account) decreased by Baht 67.97 million and inventories (before allowance for stock obsolescence) decreased by Baht 20.74 million, both of these items increase cash flow from business operating, while the trade accounts payable and other accounts payable decreased by only Baht 35.57 million. The cash flows that had been received from the investing activities in 2020 of Baht 100.09 million, from cash flow from selling mutual funds of Baht 116.88 million and cash flow used in buying equipment and intangible assets of Baht 17.57 million.

The cash flows used for financing came from the dividend declaration at the rate of Baht 0.18 per share, representing Baht 105.21 million, an increase of Baht 11.69 million from the previous year.

Capital Structure from the Financial Statement as of December 31, 2021, 2020 and 2019

HARN had the total liabilities on the December 31, between years 2019 - 2021 of Baht 274.64 million, Baht 339.83 million and Baht 367.19 million, the significant components of the liabilities were account payables and other payables income tax, deferred tax, employment benefits and lease liabilities etc., and other current liabilities without interest-bearing liabilities.

As of December 31, 2021, HARN has total liabilities of Baht 367.19 million which increased from the year 2020 of Baht 27.36 million. Lease trade and other current payables have been decreased to Baht 36.29 million.

As of December 31, 2020, HARN has total liabilities of Baht 339.83 million which increased from the year 2019 of Baht 65.19 million. Lease liabilities have been increased to Baht 104.97 million and trade and other current payables have been decreased to Baht 32.18 million.

With HARN's capital structure that does not need to rely on any bank loans this results in HARN having no interest expense, high liquidity and low debt to equity ratio, making HARN able to payout its dividends to shareholders consistently. During 2019 - 2021, the dividends were paid at Baht 0.18, Baht 0.13 and Baht 0.10 per share, representing the dividend payout ratio per net profit equal to 69.23%, 76.47% and 83.33% respectively, the annual dividend for 2021 is not confirmed until the approved by the Annual General Meeting of Shareholders.

Important ratios as of 31 December 2021, 2020, and 2019

Financial Ratio		2021	2020	Increase/ (Decrease)	2019
Debt to equity (D/E ratio)	times	0.28	0.26	0.02	0.21
Return on asset (ROA) ¹⁾	%	5.52	7.72	(2.20)	11.89
Return on Equity (ROE) ²⁾	%	5.49	7.65	(2.16)	11.56

Note : ¹⁾ Use EBIT in calculation

²⁾ Use net profit in calculation

HARN has low debt to equity ratio. In 2019-2021 were 0.21, 0.26 and 0.28 respectively. The returns on asset (ROA) for the years ending 2019-2021 were 11.89%, 7.72% and 5.52% respectively and the return on equity for the year 2019-2021 were 11.56%, 7.65% and 5.49% respectively. In 2021, HARN recorded right-of-use assets amounting to Baht 94.25 million

and lease liabilities at the same amount in the financial statements. As a result, there was a slight increase in the debt-to-equity ratio, and the return on assets ratio and return on equity ratio have decreased since the net profit of 2021 has decreased.

4.2 Factors That May Impact Future Operations

4.2.1 Factors on Environmental and Social Trends and Impacts

HARN identified and assessed significant sustainability factors that may affect organizational operations and stakeholders by analyzing both internal and external aspects, as well as positive and negative consequences on all groups of stakeholders, including environmental, social and governance (ESG) trends, directions and impact. These key issues were integrated in corporate strategic planning and risk assessment procedures. In 2021, climate change remained a crucial sustainability concern, thereby being analyzed as an input in charting strategic and risk management directions to formulate measures and provide technology for risk reduction and control whilst seeking business opportunities from climate change.

HARN has been determined to drive sustainability operations in line with strategic direction in terms of economy,

social, environment and governance by focusing controlling operational greenhouse gas emission, increasing low-carbon to reduce the impact environment.

4.2.2 Financial Support to Subsidiaries

As of March 12, 2020, HARN has signed a loan agreement with HARN Vietnam Co., Ltd. (a subsidiary in Vietnam) in the amount of 200,000 US Dollars, with an interest rate of 6.15% per year, repayment deadline within one year, and later, on March 11, 2021 which was the expiration date of the agreement, HARN extended the said loan agreement with the subsidiary for another 5 years, with the expiration of the agreement to be on March 11, 2026 and with the interest rate of 5.85% per year.

4.2.3 Policy and Term of Trade Credit

HARN has credit management criteria in order to achieve appropriate risk management of HARN. Management policy concerning new customers is set starting from the customer selection process, credit analysis, debt collection and constant revision of loan provided to former customers.

4.3 Important Financial Information

Presented financial position and performance consist of financial performance for the year ended December 31, 2021 and 2020 audited by certified public accountant, Dharmniti Auditing Co., Ltd.

Year	Name	License No.	Auditing Company
2017 - 2021	Mr.Thanawut Piboonsawat	6699	Dharmniti Auditing Co., Ltd.

Cumulative Effects of Changes in Accounting Policies

An important effect of the change in accounting policies in 2021 is the revision of recording of items concerning Employee Joint Investment Program (EJIP) in order to be in accordance with the financial report standard no.2 regarding share-based payment as criterion, in which formerly the Company recorded the said item as expense in the profit and loss according to payment made in each installment. Based on the said change, the financial statement of 2020 has been revised and this caused the value of total assets in 2020 to increase by Baht 0.75 million from deferred tax assets and net profit to decrease by Baht 2.99 million, respectively.

Audit Report Summary

Financial statements for 2017 until 2021 were audited by Mr. Thanawut Pibulsawat, a licensed auditor with registration number 6699 of Dharmniti Auditing Co., Ltd., who is an approved auditor by the Securities and Exchange Commission. The said auditor expressed the view that consolidated financial statement and separate financial statement of HARN have shown financial status, performance and cash flow on the same day of the end of the year to be correct and appropriate in important substance according to the financial report standards. In addition, Key Audit Matters relating to revenue recognition from sales and services have indicated that in 2021, HARN has earned revenues from important work section of 5 product groups which are fire extinguishing system products and projects, sanitary and air conditioning system products, refrigeration system products, digital printing system products

and IT solution for building system products. Each product group has different sale terms and conditions and price setting, including income from services according to the contract of fire extinguishing system installation project. Based on estimation of compliance with obligations according to the contract, this has effect on the income in which the Company's group recognized throughout a certain period. The Company has to recognize income according to the progress made in compliance with the obligations that must be completed, in which the auditor has responded to the risk by having formed an understanding and testing of the operation procedure and internal control relating to income recognition, revision of the design and compliance with the internal control regarding the said matter, auditing of the contents of terms and conditions of sales and services contract that occurred during the year and during the date near the end of accounting period, examination of credit notes issued by HARN after the end of the year, comparative analysis of statements and testing of details related to sales and services revenues.

Furthermore, HARN has audited impairment of goodwill from purchase and transfer of entire business of Chillmatch Co., Ltd. and a subsidiary company, under the Entire Business Transfer criteria. Testing of the impairment is significant to the auditing because the said value is a significant amount to the financial statement. Testing procedures of the impairment by the executives are complicated and require judgment in establishing assumptions especially in the estimation of cash inflow and outflow in the future that the Company expect to receive from continuous operation of asset unit that creates cash and the use of appropriate discount rate. The said assumptions can change according to the economic situations and market conditions in the future. HARN has completely disclosed information regarding the accounting policy and important assumptions in the note of the financial statement. Auditor has responded to the risk by considering the reasonability of the assumptions and the procedures in which the executives used in the calculation of the estimation of future expected cash flow, auditing of supporting evidences, which demonstrate the best estimation of the executives, especially regarding the prediction of the revenue growth, gross profit and profit from operations of work section, the use of appropriate discount rate to discount the future cash flow, testing of the calculation of the expected received value, including giving importance to the sufficiency of disclosing information relating to assumptions, which would affect the most sensitive testing result of the impairment, and have the most significant impact on the determination of the recovery amount of the goodwill.

4.3.1 Statement of Financial Position

Statement of Financial Position	Consolidated financial statements As at December 31,					
	2021		2020 (Restated)		2019	
	MB	%	MB	%	MB	%
ASSETS						
CURRENT ASSETS						
Cash and cash equivalents	242.83	14.41	306.07	18.46	127.10	7.96
Temporary investments	-	-	-	-	124.48	7.80
Trade and other current receivables	255.44	15.15	250.99	15.14	322.95	20.23
Current contract assets	10.22	0.61	12.80	0.77	9.57	0.60
Inventories	328.30	19.48	257.85	15.55	305.04	19.11
Other current financial assets	39.61	2.35	6.96	0.42	-	-
Other current assets	1.30	0.08	0.40	0.02	0.72	0.05
TOTAL CURRENT ASSETS	877.70	52.07	835.07	50.36	889.86	55.75
NON-CURRENT ASSETS						
General investment	-	-	-	-	0.24	0.02
Trade and other non-current receivables	9.18	0.54	11.25	0.68	7.99	0.50
Investment property	153.94	9.13	154.59	9.32	229.97	14.41
Property, plant and equipment	135.78	8.05	129.53	7.81	30.67	1.92
Right-of-use assets	94.25	5.59	104.97	6.33		
Goodwill	334.67	19.85	334.67	20.18	334.67	20.97
Customer relationship	26.48	1.57	40.33	2.43	58.28	3.65
Intangible assets	15.99	0.95	18.02	1.09	20.95	1.31
Deferred tax assets	9.43	0.56	4.59	0.28	-	-
Other non-current assets	28.30	1.68	25.19	1.52	23.67	1.48
TOTAL NON-CURRENT ASSETS	808.02	47.93	823.14	49.64	706.44	44.25
TOTAL ASSETS	1,685.72	100.00	1,658.20	100.00	1,596.30	100.00
LIABILITIES AND SHAREHOLDERS' EQUITY						
CURRENT LIABILITIES						
Trade and other current payables	203.95	12.10	167.66	10.11	199.84	12.18
Current portion of lease liabilities	9.06	0.54	8.92	0.54	-	-
Short-term loan from related party	0.50	0.03	-	-	-	-
Corporate income tax payable	8.70	0.52	11.10	0.67	21.18	1.33
Other current provisions	2.10	0.12	1.75	0.11	1.46	0.09
Other current liabilities	1.41	0.08	1.64	0.10	1.11	0.41
TOTAL CURRENT LIABILITIES	225.72	13.39	191.07	11.52	223.59	14.01
NON-CURRENT LIABILITIES						
Lease liabilities	87.38	5.18	96.05	5.79		
Deferred tax liabilities	0.05	0.03	-	-	2.17	0.14
Non-current provisions for employee benefit	27.97	1.66	27.77	1.67	25.51	1.60
Other non-current liabilities	26.07	1.55	24.94	1.50	23.36	1.46
TOTAL NON-CURRENT LIABILITIES	141.47	8.39	148.76	8.97	51.04	3.20
TOTAL LIABILITIES	367.19	21.78	339.83	20.49	274.64	17.20
SHAREHOLDERS' EQUITY						
Authorized share capital	292.25	17.34	292.25	17.62	292.25	18.31
Issued and paid-up share capital	292.25	17.34	292.25	17.62	292.25	18.31
Share premium on ordinary shares	776.42	46.06	776.42	46.82	776.42	48.64
Surplus on share-based payment transaction	6.40	0.38	3.73	0.22		
Retained earnings						
Appropriated - legal reserve	29.22	1.73	29.22	1.76	29.22	1.83
Unappropriated	213.72	12.68	216.60	13.06	223.82	14.02
Other components of shareholders' equity	(0.04)	(0.00)	(0.45)	(0.03)	(0.05)	(0.00)
TOTAL EQUITY ATTRIBUTABLE TO OWNERS OF THE PARENT	1,317.97	78.18	1,317.77	79.47	1,321.66	82.80
Non-controlling interest	0.56	0.03	0.61	0.04	-	-
TOTAL SHAREHOLDERS' EQUITY	1,318.53	78.22	1,318.37	79.51	1,321.66	82.80
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	1,685.72	100.00	1,658.20	100.00	1,596.30	100.00

4.3.2 Statement of Comprehensive Income

Statement of Comprehensive Income	Consolidated Financial Statements for the year ended December 31,					
	2021		2020 (Restated)		2019	
	MB	%	MB	%	MB	%
Revenues from sales and rendering of services	1,025.98	100.00	1,152.33	100.00	1,366.88	100.00
Cost of sales and rendering of services	(713.71)	(69.56)	(799.83)	(69.41)	(948.69)	(69.41)
Gross Profit	312.27	30.44	352.49	30.59	418.19	30.59
Other income	20.15	1.96	17.10	1.48	27.09	1.98
Distribution cost	(107.57)	(10.48)	(108.68)	(9.43)	(117.56)	(8.60)
Administrative cost	(132.50)	(12.91)	(139.11)	(12.07)	(140.78)	(10.30)
Profit from operating activities	92.35	9.00	121.80	10.57	186.94	13.68
Finance cost	(2.31)	(0.23)	(0.09)	(0.01)	-	-
Profit before tax expenses	90.04	8.78	121.71	10.56	186.94	13.68
Tax expense	(17.81)	(1.74)	(23.82)	(2.07)	(37.32)	(2.73)
Profit for the year	72.23	7.04	97.89	8.50	149.62	10.95
Profit attributable to owners of the parent	72.27	7.04	97.98	8.50	149.62	10.95
Other comprehensive income						
Components of other comprehensive income that will be reclassified to profit or loss :						
Exchange differences on translating financial statement	0.42	0.04	(0.40)	(0.03)	(0.05)	(0.00)
Components of other comprehensive income that will not be reclassified to profit or loss:						
Gains (losses) on re-measurements of defined benefit plans, net of tax	0.83	0.08	-	-	(1.59)	(0.12)
Total comprehensive income for the year	73.48	7.16	97.49	8.46	147.98	10.83
Total comprehensive income attributable to owners of the parent	73.52	7.17	97.58	8.47	147.98	10.83
Basic earnings per share - profit attributable to owners of the parent	0.12		0.17		0.26	
Weighted average number of ordinary shares (shares)	584,500,000.00		584,500,000.00		584,500,000.00	

4.3.3 Statement of Cash Flows

Statement of Cash Flows	Consolidated Financial Statements for the year ended December 31,		
	2021	2020 (Restated)	2019
	MB	MB	MB
Cash flows from operating activities			
Profit for the year	72.23	97.89	149.62
Adjustment to reconcile profit for the year to net cash provided by (used in) operating activities :			
Bad debt and expected credit losses	2.81	4.25	1.81
Depreciation and amortization	30.17	17.05	16.72
Amortization of customer relationship	13.85	17.95	14.90
Loss on devaluation of inventories	3.92	5.67	8.26
(Gain) loss on disposals of equipment and right-of-use assets	0.26	1.25	(0.66)
Unrealized (gain) loss on exchange rate	(1.46)	(0.33)	0.21
(Gain) loss on disposals of investment	-	(3.38)	(0.90)
Unrealized (gain) loss on revaluation of other current financial assets	(2.86)	4.43	(1.65)
Loss on impairment of other non-current financial assets	-	0.24	-
Loss on impairment of equipments (reversal)	(0.05)	0.05	-
Interest income	(0.18)	(0.96)	(0.44)
Employee's benefit expenses	1.91	2.65	7.48
Employee Joint Investment Program expenses	7.22	6.60	-
Finance cost	2.31	0.09	-
Tax expense	17.81	23.82	37.33
Profit from operating before changes in operating assets and liabilities	147.95	177.28	232.68
(Increase) decrease in operating assets			
Trade and other current receivables	(4.83)	67.97	(15.35)
Current contract assets	2.58	(3.25)	1.86
Inventories	(78.31)	20.74	(12.39)
Other current assets	(0.91)	0.33	(0.25)
Other non-current assets	(3.12)	(1.52)	(2.19)
Increase (decrease) in operating liabilities			
Trade and other current payables	34.06	(35.57)	(15.99)
Other current provisions	0.35	0.29	1.07
Other current liabilities	(0.23)	0.53	0.27

Statement of Cash Flows	Consolidated Financial Statements for the year ended December 31,		
	2021	2020 (Restated)	2019
	MB	MB	MB
Non-current provisions for employee benefit	(0.66)	(0.40)	(0.63)
Other non-current liabilities	1.13	1.57	1.30
Cash generated from operating	98.01	227.97	190.38
Employee joint investment program expenses paid	(4.56)	(2.87)	-
Income tax paid	(25.20)	(40.66)	(39.39)
Net cash provided by operating activities	68.25	184.44	151.00
Cash flows from investing activities			
Cash payments for purchases of temporary investments	-	-	(184.56)
Cash payments for purchases of other current financial assets	(29.79)	-	-
Cash receipts from redemption of temporary investments	-	-	230.30
Cash receipts from redemption of other current financial assets	-	116.88	-
Cash payments for purchases of equipment	(14.10)	(16.81)	(5.87)
Cash receipts from disposal of equipment	0.17	0.24	1.65
Cash payments for purchases of intangible assets	(2.15)	(0.76)	(1.37)
Interest received	0.18	0.54	0.21
Net cash provided by (used in) investing activities	(45.69)	100.09	40.37
Cash flows from financing activities			
Cash payments for lease liabilities	(11.28)	(0.74)	-
Cash receipt from short-term loans	0.50	-	-
Cash receipts from investments in subsidiary of non-controlling interest	-	0.70	-
Dividend paid	(75.98)	(105.21)	(93.52)
Net cash used in financing activities	(86.76)	(105.25)	(93.52)
Net increase (decrease) in cash and cash equivalents	(64.20)	179.28	97.84
Cash and cash equivalents at beginning of year	306.07	127.10	29.31
Effect of translation adjustment on foreign currency financial statements	0.96	(0.31)	(0.05)
Cash and cash equivalents at end of year	242.83	306.07	127.10

4.3.4 Financial Ratios

Key Financial Informations		Consolidated Financial Statements		
		2021	2020 ⁽¹⁾ (Restated)	2019
Financial Position				
Total Assets	MB.	1,685.72	1,658.20	1,596.30
Total Liabilities	MB.	367.19	339.83	274.64
Equity Attributable to Parent Company	MB.	1,317.97	1,317.77	1,321.66
Operating Results				
Sales and Services Revenues	MB.	1,025.98	1,152.33	1,366.88
Total Revenues	MB.	1,046.13	1,169.43	1,393.97
Costs of Sales and Services	MB.	713.71	799.83	948.69
Gross Profit	MB.	312.27	352.49	418.19
Net Profit (NCI Excluded)	MB.	72.27	97.98	149.62
Total Comprehensive Income (NCI Excluded)	MB.	73.52	97.58	147.98
Financial Ratios				
Return on Equity ⁽¹⁾	%	5.49	7.65	11.56
Return on Assets ⁽²⁾	%	5.52	7.72	11.89
Gross Profit Margin	%	30.44	30.59	30.59
Net Profit Margin ⁽¹⁾	%	6.90	8.37	10.73
Debt to Equity Ratio	Times	0.28	0.26	0.21
Total Assets Turnover Ratio	Times	0.63	0.72	0.89
Per Share Data				
Par Value	Baht	0.50	0.50	0.50
Book Value	Baht	2.25	2.25	2.26
Dividend ⁽³⁾	Baht	0.10	0.13	0.18
Basic Earning	Baht	0.12	0.17	0.26

Remark : ⁽¹⁾ Net profit used in calculation.

⁽²⁾ Earning before interest and finance costs used in calculation.

⁽³⁾ Not confirmed until the approved by the 2022 Annual General Meeting of Shareholders.

⁽⁴⁾ The financial statements of year 2020 have been adjusted the transactions recording related to the Employee Joint Investment Program (EJIP) (Note 22) in accordance with the Thai Financial Reporting Standard No. 2 Subject: Share-Based Payments

5. General Information and Other Important Information

5.1 General Information

Company Name	Harn Engineering Solutions Public Company Limited	Abbreviation	HARN
Registered Number	0107557000217	Industry	Service
First Trade Date	November 13, 2014	Par Value	0.50 Baht

Market

mai

Authorized Capital

292,250,000 Baht

Comprising Common Stock 584,500,000 shares

Paid-up Capital

292,250,000 Baht

Comprising Common Stock 584,500,000 shares

Type of Business

Import and distribution of products used in building engineering system, i.e. fire suppression system, air-conditioning system, sanitary system, refrigeration system and digital printing system, provide development IOT Products and Solutions including the provision of consulting, designing services in projects and provision of engineering solutions complete.

Website

www.harn.co.th

Head Office

559 Soi Soonvijai, Rama 9 Road, Bangkapi, Huaykwang, Bangkok 10310

Tel : +66(2) 318-9744

Fax : +66(2) 318-9744 ext.4000

Warehouse

- 509 Soi Soonvijai 4, Bangkapi, Huaykwang, Bangkok 10310
Tel: +66(2) 318-9744
- 888/14-16 Moo.21, Bang Phli Yai, Bang Phli, Samut Prakan 10540
Tel: +66(2) 105-3295

Subsidiary

- **Harn Vietnam Co., Ltd.**
68 Nguyen Hue, Ben Nghe Ward, District 1,
Ho Chi Minh City, Vietnam.
- **Aiyara Harn Co., Ltd.**
559 Soi Soonvijai, Rama 9 Road, Bangkapi, Huaykwang,
Bangkok 10310

Company Secretary

Miss Wasukan Boonmee

Tel : +66(2) 318-9744 ext.4011

Email : wasukan.b@harn.co.th

Investor Relations

Mr. Wirat Sukchai

Tel : +66(2) 318-9744

Email : wirat.s@harn.co.th

The person taking the highest responsibility in finance and accounting

Mr. Wisit Wachiralappaitoon

Tel : +66(2) 318-9744

Email : wisit.w@harn.co.th

The person supervising accounting

Miss Ananya Proyngoen

Tel : +66(2) 318-9744

Email : ananya.p@harn.co.th

References

• Securities Registrar

The Stock Exchange of Thailand Building

93 Ratchadaphisek Road, Dindaeng, Dindaeng, Bangkok

10400 Thailand

Tel : +66(2) 009-9999

Fax : +66(2) 009-9991

Website: <http://www.set.or.th/tsd>

• Auditor

Dharmniti Auditing Co., Ltd.

178 Dharmniti Building 6-7th Floor, Soi Permsap (Pracha

Chuen 20), Pracha Chuen Road, Bangsue, Bangkok, 10800

Thailand

Tel : +66(2) 596-0500

Fax : +66(2) 596-0560

5.2 Other Important Information

- None -

5.3 Legal Disputes

As of December 31, 2021, does not have the legal disputes that could have negative impact assets or operations on HARN, i.e. does not impact of more than 5% of the equity as of that date.

Section 2

Corporate Governance

6. Corporate Governance Policy

6.1 Overview on Corporate Governance Policy and Guidelines

HARN has a determination to be an engineering leader in Fire Protection System and Safety, Refrigeration System, and Digital Printing System including provide development IoT Products and Solutions. To create good business profits, HARN realized that in order to succeed, apart from delivering quality products and services, operating business with care to stakeholders is crucial. HARN uses good corporate governance and keeps principle of business conduct, delivers quality administration and employees. This will increase business value and support sustainable growth.

HARN implement a Corporate Governance Policy on its business ethics of directors, top executives, management and employees in compliance with good Corporate Governance practices as its guidelines for the organization been practicing since 2013 through website, www.harn.co.th, which was review regularly to improve the standard of operations to comply with Securities and Exchange Commission (SEC) and Stock Exchange of Thailand (SET) to Good Corporate Governance Principles (CG) for listed companies.

HARN has integrated Corporate Governance in its vision, mission, and core values as part of its sustainable growth strategy, to drive the forward, overcome all challenges, apply technology and innovation to all sectors of operations, elevate the well being of the Thai people based on the Corporate Governance (CG).

The Corporate Governance Policies and Principles that had been reviewed and approve by the Board on March 25, 2021 and were announced and became effective on April 1, 2021. To comply with HARN's best business practices.



Corporate Governance Policy Principles

To illustrate the commitment that adheres to as an operating framework application of such policy and code of conduct to their jobs. The Board's policy on Corporate Governance is as follows:

1. The Board of Directors, Executives and all employees must perform their duties with determination, commitment and responsibility to the best of their ability for the benefits of the HARN and to uphold the 5 international standard principle of corporate governance (REACT).
2. The Board of the Directors has a significant role together with the Executives to set the visions, strategies policies and important plans, including establishing the management structures that relates fairly between the Board of Directors, the Executives and the shareholders and to plan the management guidelines and the appropriate business operations including making sure that the accounting system, the financial report and the accounting audit are reliable.

3. The Board of Directors and the Executives must be the leaders in terms of ethics and be an example for working with honesty, fairness, transparently and accountable.
4. The Board of Directors, the Executives and all employees must uphold fairness by treating all stakeholders equally, including keeping watch, control and prevent anyway decisions or actions that may have conflict of interests with relating issues.
5. The Board of Directors must operate with the efficient anti-corruption system including reporting regularly to ensure that the management is aware, emphasizes and follows the anti-corruption policies.
6. Compliance with the corporate governance policy of the company HARN is considered an important key performance index in evaluating the business management of the Board of Directors and the Executives and to assess the performance of employees.

HARN has published the latest version of "Corporate Governance Policies and Principles and Code of Conduct" on its intranet and website in Thai and English for the reference for Thai and foreign investors and interested parties together with stakeholders.

6.1.1 Policy and Guidelines for the Board

The Board of Director shall comprise the person who has knowledge, expertise, and experience considered beneficial to HARN. They shall devote their time to their duties and endeavor to perform them well. The policy and guidelines for the Board are as follows:

1) Composition, Qualifications and Appointment of the Board

The Board, led by the Chairman of the Board, are aware of the diversity with diverse skills, experience and expertise in specialized of gender, age, education background, experience according Board Skill Matrix of the Board, consider from Thai Institutes of Directors or other organizations that presents relevant information or other sources see fit by HARN. which it as an important factor in increasing the efficiency the work, therefore, the Board must be knowledgeable, expert, and experienced that would benefit HARN, be a leader, have vision,

able to monitor and system promote business operations to law and ethics with corporate governance. Control management to ensure the effectiveness and efficiency of operations, achieving of HARN's targets and adding value for shareholders, the government, the public and other stakeholders. Afterward, the Nomination and Remuneration Committee (NRC) selects and proposes to the Board for consideration of the names of qualified candidates prior to the Shareholders' approval in the AGM. **More details appear in Section 2 "7.2.1 Composition of the Board", page 97 and Section 2 "7.2.2 The Current Board of Directors", page 97-98**

2) Independence of the Board

The board shall consider, express opinions on, and vote for activities under their authority. If a decision is made under pressure from work, family, or any conflict of interest, it may be made in bias to benefit the directors in question, their family, or other contacts. The independence of the Board must be emphasized in order to protect the shareholders and the company's benefit. Therefore, any director who is not entirely independent shall not make decisions.

Independent Directors shall be independent from major shareholders and executives. They shall also have adequate access to financial-related and business information in order to provide a free opinion to protect the best interest of minor shareholders, acting with care and honesty.

3) Role, Responsibilities, and Authority of the Board

The board shall act professionally on behalf of the shareholders with high responsibility and accountability in order to steer the company in the right directions, define framework of strategies according to vision and mission, to ensure that business is operated under code of conduct, make decisions on important matters with care and loyalty, and monitor to the communicate of short and long-term strategies into practice at the operational level. Also, protect the benefits of all stakeholders. Therefore, the Board must perform their duties independently from management, for overseeing management's operations and results, managing risks and determining remuneration. **More details appear in Section 2 "7.2.3. Roles, duties and responsibilities of the board" page 99-100**

4) Role and Duties of the Chairman

1. Calls for the Board meeting according to the articles of association by delivered to Directors at least 5 business days in advance of the Board meeting date. In urgent cases, the Chairman of the Board is the head of the meeting and in the Annual General Meeting including determines agenda of the meeting with the Chief Executive Officer.
2. Ensures the efficiency of each meeting by allocating enough time for the executives to present information, encouraging and allowing directors' queries and expression of free views, controlling the issues under discussion, and summarizing the meeting's resolutions.
3. Encouraging the Board's conformance to authorities, responsibilities, law and corporate governance principles, including identifying themselves, refraining from voting, and leaving the meeting in case of having conflicts of interest in any agenda.
4. Control and oversee the Board and Board-Committee to perform on duty efficiency and achieve the stated objectives.
5. Having power deciding cast vote, in case the votes of both parties are equal.

5) Establishment of Board-Committees

The appointment of Director as Member of the Board-Committees, the Nomination and Remuneration Committee considers qualified Director as a Member of the Board-Committee to fill vacancies. This must be done in accordance with the Board-Committees' Charters. The names of selected Directors are to be proposed to the Board for consideration and approval.

To ensure thorough and efficient examination of key operation, the Board has established the following 4 board-committees, namely the Audit Committee, Nominating and Remuneration Committee, Executives Committee, and Risk Management Committee. **More details appear in Section 2 "7.3 Information on Board-Committees", page 100-103**

6) Remuneration of Directors and the Chief Executive Officer

HARN has established remuneration policies for the Board and Board-Committees. The remuneration is considered through the comparison with the Board's performance, roles, and responsibilities, HARN's performance, benefits to the shareholders, the overall business circumstances, as well as the organizations with equal size in the same industry. The Board's

remuneration criteria must be attractive. The Nomination and Remuneration Committee is in charge of setting the annual compensation, and make recommendation to the Board for consideration and approval before presenting the AGM for approval. In 2021, the Remuneration of the Board and Board-Committee has been approved by the 2021 Annual General Meeting of Shareholders. **More details appear in Section 2 "8.1.2 (Individual directors' compensation)", page 117-118**

Including, HARN's has established remuneration policies for Chief Executive Officer, which compensation structure and criteria, will consider the annual performance, taking into the duties and responsibilities and overall performance. The Nomination and Remuneration Committee is in charge of setting the annual compensation, and make recommendation to the Board, for approval. However, in 2021, the Board has approved the remuneration the Chief Executive Officer. **More details appear in Section 2 "7.4.2 Top Executive's Remuneration Policy", page 105-106**

7) Evaluation of the Performance of the Board

HARN conducts the Board's performance assessment annually, under good corporate governance practice. HARN's Board Assessment divided into 4 parts, namely: (1) Whole Director Self Assessment, (2) Individual Director Self Assessment, (3) Whole Board-Committees Self Assessment, (4) Individual Board-Committees Self Assessment as a framework for evaluating the board's performance, and consider, review and analyze its performance for further improvement. **More details appear in Section 2 "8.1.1 6) Board and Board-Committees Self-assessment", page 114-115**

8) Directors' Development

For new directors, HARN arranges an orientation program and provides each director with Directors' handbook, documents and useful information. Furthermore, the business visit on introduction to HARN's business operations, including policies and practices of good corporate governance, are provided in order to create knowledge and good understanding of HARN. The directors are also required to enhance their knowledge, capability and skills in terms of business operation, good corporate governance and other courses that are beneficial to their operations. Accordingly, HARN shall support and encourage their training with Institute of Directors Association (IOD) as well as other institutions in all relevant courses. **More details appear in Section 2 "8.1.1 5) Director development, page 112-113 and 8) Orientation of New Director", page 115**

9) Board Meetings

Board meetings are scheduled in advance each year, so that the Directors can schedule themselves to attend. HARN's Meeting invitations are delivered to Directors at least 5 business days. The Board sets a policy that requires no less than two-thirds of the current Board members in attendance and vote counts to make a quorum. **More details appear in Section 2 "8.1.2 (Board meetings)", page 116-117**

10) Company Secretary

The board appoints a Company Secretary, to take responsibilities in providing advices to the Board regarding the applicable laws and regulations that the Board must recognize and act upon, the corporate governance policies as well as the arrangement of the Board meetings and the Meeting of Shareholders. The Company Secretary must monitor and coordinate to ensure that the Board and shareholders' resolutions are fully complied, including to keep the Company's important documents as required by the laws. **More details appear in Section 2 "7.6 (Company Secretary)", page 107-108**

11) Succession Plan

The Board must ensure that HARN has an appropriate nomination process for key management positions at all levels. The Chief Executive Officer will be selected through a nomination process that will consider both internal and external candidates which follow the law. HARN has taken steps to develop its executives to lay down a succession plan for personnel when the time comes for assuming higher positions that become vacant, namely: the Chief Executive Officer, Managing Director, Chief Financial Officer, Chief Operating Officer, Director of various departments. **More details appear in Section 2 "7.4 (Succession Plan)", page 105**

Policy on Serving as Directors in Other Companies of Directors and Executives

The Board has a policy to hold directorship in other companies of directors. According to the regulations of the company that The Board must not own a business or be a part of ordinary partnership or partnership or limited partnership or be a Board of other entities at the same industry or a competitor of HARN unless reported to the General Meeting prior to the appointment.

The Board have no policy to submit any committees to be a Board of other companies. In case that the Board will take another position as a Board of another business, it must be approved by the Board unless the business is non-profit organization. However, the position must not conflict with laws and rules related to the operation of HARN and must not use the position to refer nor to ask for other benefits of other entities.

The Board set numbers of companies that each Committee able to take which does not exceed 3 registered companies no exception, to ensure that the Board dedicate sufficient time for the operation.

In 2021, the Director is in position for other register companies as follow: **(the other listed companies in which the director holds position appear in attachment 1, page 210)**

Name		other listed companies in which the directors hold positions
Dr. Thakol	Nunthirapakorn	2 companys
Miss Voranuch	Supaibulpipat	- none -
Mr. Prasert	Deejongkit	1 companys
Mr. Parkphum	Wongpaitoon	- none -
Mrs. Valeeratn	Chuerboonchai	- none -
Mrs. Sirima	Iamsakulrat	- none -
Dr. Jain	Charnnarong	- none -
Mr. Wirat	Sukchai	- none -
Mr. Thammanoon	Tripetchr	- none -

Details of the policy and guidelines for the Board are as shown in HARN's Corporate Governance Policies and Principles and Code of Conduct on website.

Governance of Subsidiaries

HARN determine policies to govern subsidiaries by setting way of conduct guidelines, internal control, disclosure of financial performance, transactions with connected persons, acquisition or disposition of property, other important, capital increase, capital reduction, and dissolution of subsidiaries, so that their work procedures in conformity according to the law and relevant regulations as a governance tool for companies in which HARN holds shares. All are required to practice and drive toward the same standard across HARN through HARN's representative(s) assigned as directors. This way, HARN commands unity in action, leading to synergy, enhanced capability and strength in competition to in turn lead to joint growth in a transparent and sustainable way.

Below is the scope of executives, which consists of governance principles:

- (1) Major joint venture is defined as has ratio of the voting shares between 20 - 50% and invest large amount of sum. In necessary circumstances, the Board must arrange Shareholder's agreement or other agreement to clarify authority of management and decision, to use for financial statement of the company according to the standards and timeline.
- (2) Rules, Regulations and Policy, including directives which form part of the governance designed to drive linkages between HARN's policy governance and its successful implementation driven toward a uniform standard throughout by HARN's representatives assigned to serve in these subsidiaries as directors.
- (3) Steering for management by defining objectives and goals, strategies, and policies, and allocating key resources for objective and goal achievement, including monitoring, assessing, and ensuring performance reporting. Must report implementation updates to the Board.

6.1.2 Policy and Guidelines Related to Shareholders and Stakeholders

1) Shareholders' Rights

HARN values the protection of shareholders' rights, thus provides opportunities for shareholders to exercise their fundamental rights as abide by law, such as to attend the shareholders' meeting, to express opinions, and to make decision on important issues, including approval of significant transactions having impact on business direction. HARN schedules an Annual General Meeting (AGM) within 4 months

of the annual closing date of its accounting books. For urgent matters that affect or involve shareholders' interests or involve conditions, regulations, or laws that require shareholders' approval, however, it can call an extraordinary meeting of the shareholders (EGM).

However, HARN prepare to the shareholders an invitation notice indicating the venue, date, time, agenda items, supporting information thoroughly and sufficient for the rights of the shareholders, as well as the opinion of the Board on each agenda item indicated in the invitation notice and key supporting information for decision-making.

Shareholder's Meeting

In 2021, the Board of meeting no. 1/2021 on February 25, 2021, decided to call AGM on April 23, 2021 at 14.00 hrs. at HALL 31-32 floor 3rd, Harn Engineering Solutions Public Company, 559 Soi Soonvijai, Rama 9, Bangkok Sub-District, Huaykwang District, Bangkok 10310. Its decision, meeting date, and meeting agenda were disclosed in detail ahead of time by announcing on SET's website to notify shareholders.

In the AGM, HARN was organized in accordance with the AGM Checklist, prepared by the Thai Investors Association (TIA), Thai Listed Companies Association (TLCA), and Securities and Exchange Commission (SEC). In 2021, HARN received a full score of 100 points for the 4th consecutive year, reflecting its continual commitment in organizing its AGMs with highest Corporate Governance standards. Such practices include:

- Disclosed in detail ahead of 31 days before the meeting date on March 22, 2021 by announcing on SET's website. To notify shareholders before sending meeting notices. HARN assigned Thailand Securities Depository Co., Ltd. (TSD), its securities registrar, to mail the notices together with accompanying documents, supplementary information for decision-making, opinions of the Board, the annual report (QR Code), meeting documents, and proxy forms for shareholders of 22 days before the meeting date. The meeting notices were sent on March 31, 2021.
- The invitation was announced newspaper, 3 days before the meeting, each for 3 consecutive days during April 12, 16 and 19, 2021 to allow shareholders enough time to prepare themselves for the meeting.
- Allowed the shareholders to provide their opinions, suggestions, and questions until April 16, 2021, 6 days before the meeting date, as well as posted on HARN's website.

On the Meeting Date

The 2021 AGM define began at 14.00 hrs., with registration beginning at 12:00 hrs. At the meeting's opening, a total of 127 shareholders registered, of whom 28 were shareholders and 99 were proxy holders, holding a total of 403,343,955 shares, or 69.0067% of the total, which exceeded one-third of all HARN's subscribed shares of 584,500,000.

The meeting ensured that the meeting proceeded by the order of the agenda and did not add any item without notifying shareholders in advance. At the 2021 AGM, the order of the agenda was not changed, and there was no request to consider any other matter.

On the meeting, the Chairman of the Board assigned The Company Secretary as that would conduct the meeting, introduced the directors, executives, the external auditor, and the legal advisers (if any) who served as a neutral party. Then elaborated on the voting and ballot counting for individual agenda items under HARN's Articles of Association as well as voting procedures, chance attendees to comment or provide recommendations and ask questions for each item. This year, for good public hygiene, provided paper question form another channel for shareholders instead of using microphones, which the Chairman and executives will answer all questions clearly and precisely, treating all questions with due respect. In addition, invited volunteers from the shareholders present at the meeting to witness the vote counting. For the election of directors, individual votes were required.

All 9 HARN directors attended the meeting. The Chairman of the Board, the Chairman of the Board-Committees, Chief Executive Officer, Managing Director, Chief Financial Officer, Chief Operating Officer together provided supporting information on stage. Director of Various Departments and the external auditors from Dharmniti Auditing Co., Ltd were attended at the front rows to provide information for relevant questions. Also, Miss Urairat Hanthaweeapat as shareholder, a volunteer from the shareholder, was a witness in the vote counting.

Practical Guidelines for Reporting Conflicts of Interest

As specified in the Corporate Governance Policy and Principles, all directors, top executives according to the announcement of the Securities and Exchange Commission (SEC), must prepare reports on conflicts of interest, consisting of annual reporting forms and interim reporting format in case of changes. At each shareholders' meeting, any director with vested interests or involvement on any agenda must not attend and abstain from voting on each applicable agenda item.

Disclosure of Shareholders' Meeting Outcomes

For the 2021 AGM, HARN submitted a summary of AGM resolutions to SET and SEC on the evening of the meeting date on April 23, 2021, Afterthere, 11 days after the meeting date on May 6, 2021 it also submitted the minutes of the AGM, by each agenda clearly separated, the number of directors in attendance, questions raised by shareholders and answers from directors, together with the voting tallies of each agenda item to SET and SEC, including disclose through website www.harn.co.th. Which complies with the regulations of the Stock Exchange of Thailand within 14 days of the meeting.

2) Equitable Treatment of Shareholders

HARN treats all shareholders fairly despite their different shareholding proportions. Shareholders' fundamental rights are conserved regardless of their gender, age, race, nationality, religion, belief, social status, physical impairment, or political inclination. Information on the shareholders' meeting was announced ahead of the meeting in Thai and English.

HARN values the protection and rights promotes of shareholders to fundamental rights, in which the provides opportunities for shareholders to propose agenda items for the AGM and to propose and nominate Director Candidates in advance of the AGM on SET's electronic system and www.harn.co.th, from October 1 to December 31, 2020.

However, none of the shareholders has proposed meeting agenda or nominate Director Candidate to be elected as HARN's Director. All of this information has been disclosed in the AGM invitation notice.

HARN did it best to facilitate all shareholders, though the AGM was convened under the COVID-19 pandemic, where the safety and health of attendees was crucial under social distancing measures, as follow;

- The meeting venue was arranged can easily and conveniently travel to by private cars and public, also provide shuttle service, park at the back of the KPN Building, Rama 9 Road from 11.00 am. until the meeting closed.
- Provide screening for body temperature at outside area of meeting room, and seating with a suitable social distancing requirements to reduce the risk of COVID-19 infections.
- On the meeting day, Registration opened 2 hours use barcode system facilitated registration and voting. and extended until the period before the last meeting agenda without losing their rights.

- Provided staff officers to welcome and take care of them, photocopying services and verified documents.
- Provided sufficient drink water to the shareholders at outside area of meeting room
- Provided stamp tax in case the shareholders delegate a person to attend the meeting on their behalf
- Disclose HARN information around the meeting area and provided staff officers to welcome and answer questions of them
- Prepare quality assessment of the AGM through QR Code to use the data to develop the future meetings with transparency and beneficial to the shareholders.

To maintain the rights of those who could not attend the 2021 AGM in person, they could appoint proxies or delegate their votes to any independent director any one in attendance on proxy forms B. which sent along with the invitation notice defined for voting on behalf of shareholders. HARN treats proxies as if they were shareholders. To this end, HARN has specified these independent directors' namely; Dr. Thakol Nunthirapakorn, Miss Voranuch Supaibulpipat.

3) Roles Toward Stakeholders

HARN accounts for all stakeholders' rights and interests by establishing guidelines for addressing the needs of each group in and outside the corporation, as well as its own responsibility for society and the environment. Stakeholders fall into 7 groups with a different mission targeted for each group in response to their different needs:

Employee

More details appear in Section 2 "7.5 Information of the Employees", page 106-107

Ensure that the Administrative allocates resources efficiently and efficiency while considering effects to the resource management and value chain to achieve goals and objectives sustainably. Also, arrange plans to develop information technology in organizational level that correlate to the needs of business and ensure that information technology is being used to increase business opportunities and development plans. Administer risks to achieve objectives and main goals of the organization, as follow;

- (1) ICT department arranges policies and development plan of information technology in Digital Transformation 2019 - 2021 both software and hardware to match requirements of HARN and increase efficiency of the internal process and sufficient resource management to operate the business.

Hardware Road map – 2021

1. Hardware Good Performance	Supply laptops to all salespersons while replace the old equipments to be modern.	98.13%
2. Network & Internet stability	Manage the internal network and Link Internet to be efficient with enough speed to use in the whole organization.	
3. Security Safety Management	Manage data security and access data from outside to be efficient, safe and reliable.	
4. Copyright Software	Management of procurement for copyright software in the organization.	
5. Hybrid Cloud	Server on Cloud management.	

Software Road map – 2020

1. Maintain the ERP system and programs in the company to be stable.	All parties work with flawless while delivering both internal and external works at on time.	99.91%
2. Program development to reduce work process and increase work efficiency.	Digital Transformation Project.	

- (2) Oversee risk management covering information technology risks.
- (3) Establish policies and measures for information technology safety and security. The ICT prepares a contingency plan in the event of an information technology unforeseen incident and must be reviewed annually.

Customer

HARN divides its market into domestic and overseas, listens to customer needs and expectations to analyze them through assorted channels, including customer visits, seminars, opinion surveys and customers information via online channels which also provide information on state of other technology, future needs of customers for the design of products and services that match the needs and expectations of current and future customers.

Constantly, HARN developed added a new communication channel via LINE Official to ease contact to facilitate. In addition, seminars and communication were held online as well as communication with customers to provide useful information, knowledge, and forge good relations during the virus spread Covid-19.

HARN developed to foster relations with customers suiting each life-cycle of customers, designed to lead to repurchase and “word of mouth” to others, which form the ultimate goal. There is a customer satisfaction annual assessment system, featuring constant query development to allow survey outcomes to reflect current operations while extending future businesses more clearly. Customers’ satisfaction and dissatisfaction have been regularly compiled and analyzed so that may know trouble indicators and promptly resolve problems, thus preventing losses of customers or competitors’ intervention. **Details satisfaction for 2021 appear in Section 1 “3.4.2 (Responsibility to Consumers)”, page 63**

Trade Partners and/or Creditors

Since Trade partners and/or Creditors are key to business success through mutual support, HARN values and treats them fairly through fair competition, mutual respect, and good cooperation. Strictly complies with contracts, selection of partners and procurement processes since they are vital to the determination of expenses and the quality of HARN products and services. A clear procurement procedure is in place to ensure transparency, accountability, and maximum benefit.

Furthermore, HARN is committed to do business for sustainable growth in parallel with good governance for communities, society, and the environment. It therefore values supply chain management such that it is clearly in place by developing risk management processes and mitigation of impacts arising from business partners’ conduct and will inform terms of guarantee payment term acknowledgment, in case of default payment, we will negotiate and work together to find solution avoid damage, to support the success of supply chain management.

So that trade partners and/or creditors conduct guidelines may be more in line with, and more suitable for, the sustainable organizational management concept. HARN review the guidelines trade partners and/or creditors, defining the contents and scope under applicable regulations. Encourage compliance its anti-corruption measures handbook. The factors for the drive are as follows:

(1) Send executives and employees to business training overseas to achieve a goal in “a leader of engineering solutions sustainably”. In 2021, HARN uses via VDO Conference system in communicate with trade partners and/or creditors both domestic and abroad on the continuation of learning and development under the Circumstance of COVID-19.

(2) Promotes innovation as core value and publish to the public and a part of social responsibility through the Knowledge Sharing Project, with multi-channel communicate.

(3) Appoint Innovation Committees to promote innovative culture in the corporate to lead to new development and innovation for sustainability business, as follow;

- Increase efficiency with Digital Transformation;
- New point of views in designs and develop products and services;
- Research;
- Improve work process;
- Cooperate with partners.

Competitors

Business Competitors HARN complied with the rules of fair competition and treated business competitors fairly under the Competition Law Framework, refrained from dishonesty or improperly seeking confidential information on business competitors. Also, refrained from defaming business competitors through slander. Additionally, HARN refrained from involving in any activities that may lead to set the limitation or reduction of business competition.

Investor

HARN remains committed to being an organization that contributes to the economic growth. Enhancing the competitiveness of the country, developing society and improving the quality of life. Moreover, creating innovation and implementing technology in all sectors as well as being a driving force in way of society, community, environment to move through change Under vision “Leading sustainable solution provider of engineering systems” and taking into account the three aspects of balance (ESG): Environmental, Social and business operations under good Governance as well as implementing 3S strategies namely; SMART Business, SMART People, SMART Environment to be assure for the investor that HARN will be a company that operating returns business to sustainable growth.

Investor Relations

HARN assigned Mr. Wirat Sukchai, The Chief Executive Officer as Investor Relations, to act focal point, to facilitating effective communication with the shareholders and investors, including institutional shareholders, minor shareholders, analysts, and relevant regulatory authorities to ensure that information disclosed are correct, reliable, and adequate information in a fair, transparent, and comprehensive matter such as corporate strategy and direction, company information, quarterly financial information. In addition, interested parties, shareholders, or investors can contact HARN's Investor Relations via direct e-mail at wirat.s@harn.co.th or telephone at (66)2 318-9744 ext.5001 (Direct).

In 2021, executives met and shared essential information to the shareholders, investors, media and analysts in the following events:

Met Investors / Shareholders / Media	
met and shared essential information	Physical : 1 time
	Audio : 2 times
SET Social Impact Gym	Physical : 1 time
	Online : 1 time
SET's Opportunity Day	4 times
Information provided via telephone	2 times
Email newsletter	4 times

Apart disclosure of information according to the rules and channels of The Stock Exchange of Thailand (SET), Annual Disclosure Statement / the Annual Report (Form 56-1 One Report). HARN disclosed modernize information in both Thai and/or English via website www.harn.co.th and Facebook: harn Engineering Solution Pcl.

Public sector

HARN support of public sector policy to promote national economic growth, conducts operations business accordance with the relevant laws, rules, regulations practice.

Community, Society and Environment

HARN define Occupational and Environment Policies and Rule to bolster quality of lives for the community, the society, and the environment. This considered as factors to ethically and transparently drive HARN's businesses. For Corporate Social Responsibility, HARN is determined to reduce risk and negative impact due to its operation. HARN also fosters good relationship. Therefore, implemented its social responsibility under frameworks for society, community and environment to reduce impacts of climate change and conserve the eco-system. **More details appear in Section 1 "3.3 Environmental Sustainability Management", page 50-52**

Disclosure of Information and Transparency

Disclosure of information is a key index of operating transparency, a crucial factor for confidence among investors and stakeholders. HARN values accurate, precise disclosure of assorted information and creates numerous channels of disclosure so that all stakeholders can gain easy access to information. It promotes awareness among directors, executives and employees of the importance of information disclosure and transparent operations, and creates appropriate avenues for complaints while providing fair treatment to whistleblowers and those complained against as follows:

Financial and Non-financial Reports

- (1) Disseminated its information of HARN to shareholders, investors through the channel and media of the Stock Exchange of Thailand and on the website of HARN. Its information is also compiled in the Annual Disclosure Statement / the Annual Report (Form 56-1 One Report)
- (2) Disclose information to investors and stakeholders on key matters that affects the price of HARN and decision making of investors and stakeholders, shall be accurate, complete, timely, reliable, transparent.
- (3) Disclose financial information will be considered thoroughly with the stated aspects at minimum:
 - The result of the assessment is sufficient for internal control.
 - Independent Auditor's Report, internal control recommendations and other recommendations (if any).
 - Comments of the Audit Committees.
 - Relevant to main objectives, goals, strategies and policies of HARN.
- (4) Disclose on Corporate Governance Policies and Principles, code of conduct, risk management policy, sustainability management policy, environment-occupational-health and safety policy, report results of implementation in compliance with such policies including also non-compliance cases together with reasons (if any) and climate change action report in the Annual Disclosure Statement / the Annual Report (Form 56-1 One Report) and on its website HARN.
- (5) Prepares management discussion and analysis (MD&A) to support its disclosure of its quarterly financial statements when changes of Net Income or Net Profit is higher than 20% in the same quarter of last year so that investors access information on changes to HARN's financial status and operating performance in each quarter.

- (6) Discloses in the annual audit fee and other service fees for the auditor. Which has been approved by the annual general meeting of shareholders.
- (7) Discloses information on the roles and duties of the Board and Board-Committees, number of meetings and number of meetings attended by each director in the previous year, as well as opinions in relation to performance of duties and directorship training and development for directors, in the Annual Disclosure Statement / the Annual Report (Form 56-1 One Report).
- (8) Discloses remuneration policy of directors and top executives of HARN, that reflects their duties and responsibilities, including types or nature of the remuneration, also remuneration for any directorship on the director of subsidiaries (if any) in Annual Report of HARN, in the Annual Disclosure Statement / the Annual Report (Form 56-1 One Report).
- (9) Disclosure of the information concern one of the director in particular, that director should be aware of and able to reveal identity to ensure complete and proper compliance.

4) The Use of Inside Information

HARN has defined guidelines in its Corporate Governance Policies and Principles for director, executives and employees on best practices on the use of inside information and guarding of confidential information. They must guard HARN's inside information or confidential information not yet publicly available and must not share with other parties inside information learned during the course of their duties or use it to seek profit in a fraudulent way, or to cause damage to HARN's interests.

In addition, HARN has a policy for the Board and the first 4 top-ranking executives with privilege to inside information to refrain from insider trading of HARN stocks within 30 days prior to the disclosure of quarterly and yearly financial statements to the public and until the period of 24 hours since disclosure to the public. Other than that, trading it normally. They must report such trading to the Company Secretary at least 1 day in advance.

However, the Board and the first 4 top-ranking executives will be reminded to refrain from using inside information through email by January of every year.

5) Conflicts of Interest

HARN requires information disclosure to prevent conflicts of interest and illegal, improper activities. Under the Board's policy, business decisions made by all level executives must be solely in HARN's best interests. Executives must not only avoid engaging in financial and other relationships with external parties that would lead to financial losses for HARN or a conflict of loyalty or interest, but must also not compromise the efficiency of business operations. Those person with interests or related businesses which may require HARN's review and decisions must report their relationships and connection with potential conflicts of interest. HARN is to disallow such connected persons from exercising their authority for and involvement in such transactions.

- (1) HARN has required the directors and 4 to disclose potential conflicts of interest to HARN by February of every year. The Company Secretary is to compile to check and manage conflicts of interest.
- (2) Define at every board meeting, the Chairman reminds directors to conform to the policy on conflicts of interest on all agenda items, which requires those with vested interests to declare themselves to the meeting to abstain from voting or giving any views and minute recorder.
- (3) As part of the oversight of inside-information measures, all director and the first 4 top-ranking executives, including their spouses and children under legal age, must report any changes in their HARN share ownership to the Company Secretary at least 1 day in advance and report to SEC under Article 59 of the Securities and Exchange Act B.E. 2535 (1992) and its amendments within 3 days of the date of sale, purchase, disposal, or receipt of such shares. HARN defines a policy of disclosing or reporting the sale, purchase, disposal, or receipt of such shares, changes in share ownership of the director and the first 4 top-ranking executives to the Board meeting, contained in advance as a regular agenda item.
- (4) The Audit Committee reviews related transactions and those with potential conflicts of interest that could undermine HARN's businesses to ensure conformance to the law and SET's criteria. All of which must be reported to the board for approval.



6) Right of Shareholders

HARN has defined guidelines on the rights of shareholders and equitable and fair treatment, and has a written policy and guidelines for the rights and equitable treatment of shareholders for directors, executives and employees to comply with under Corporate Governance, and Code of Conduct.

7) Anti-Corruption

HARN is committed to running its businesses with integrity, transparency, fairness and adherence to the CG code, and resisting all forms of fraud and corruption, direct or indirect. Relevant implementations and development as follow:

- (1) In 2017, HARN enlisted in the declaration of intention to join Thailand Private Sector Collective Action Coalition against Corruption (CAC), an endeavor of the Thai Institute of Directors (IOD) and won approval, with effect from November 5, 2018. Before expiration of the three-year membership term, HARN applied for CAC recertification and on September 30, 2021, won approval the renewal of CAC membership for second term.
- (2) Since 2018, HARN has begun enforcing Anti-Corruption Policies as part in Anti-Corruption Measures Handbook. The policies, revised in 2021, to be contain essential principles and guidelines embracing resistance to fraud, by defining as part of the way of Corporate Governance and Code of Conduct so that may observe the same standards and management approaches.
- (3) HARN's Anti-Corruption Policy forbids HARN's director, executives and employees to carry out or participate in corrupt practices as well as all forms of bribery offer or acceptance direct and indirect. They must seriously observe the Anti-Corruption Policy, which covers various processes, including donation to charities, human resources administration, supply procurement, and internal control.
- (4) Communication, training, and task highlights:
 - Communicates its Anti-Corruption Policy and guidelines to its subsidiaries, associates, and other HARN-controlled companies, business partners, and stakeholders as well as the public through assorted channels including letters, e-mails, website, HARN intranet, signage and LINE Official so that all stakeholders may acknowledge and conform to guidelines.
 - Communicates with its Director, Executives Employees and provides training to ensure their understanding of fraud anti-corruption measures, and disciplinary actions for non compliance. The training includes an orientation session, and HARN Academy E-learning etc.
- (5) Oversight and monitoring of performance:
 - The Board ensures that HARN commands an efficient system for anti-corruption to ensure that executives recognize and values anti-corruption and cultivates it as a corporate culture.
 - The Audit Committee supervises internal control, financial reporting, and other procedures concerning anti-corruption measures, steers conformance to anti-corruption measures, and reviews applicable measures and internal control to ensure that the measures are adequate and effective. The reviews risk assessment and provides recommendations to the Board on suggested practices to mitigate such risks.
 - The Audit Committee annually defines and reviews the Anti-Corruption Policy, provides recommendations and guidelines, monitors, and assesses performance, and steers and advocates risk management practices concerning anti-corruption and process-level corruption by assessing fraud and corruption risk and review anti-corruption measures for adequacy and suitability.
 - Top Executives establish risk assessment for business processes that may lead to corrupt practices, review the suitability of processes and measures, and personify proper behavior as well as communicating it to all employees and related parties.
 - Developed Risk & Control Self-Assessment for all units to apply as guidelines for assessing corruption risks in their respective business processes and for defining suitable internal control processes.
 - The Quality Management Division inspect and monitors the use operational on process the Anti-Corruption measures and monthly report on compliance outcomes to the Chief Operating Officer, Chief Financial Officer and the management meeting.

- Internal Audit reviews items of potential the likelihood of corruption, and corporate efficiency for managing risks arising from corporate corruption and those at the operating level. Also reports to the Audit Committee and top executives when encountering items or actions that could undermine performance outcomes, including corruption.

Details of the information on Policy Anti-Corruption are shown in <https://www.harn.co.th/corporate-governance/corporate-governance-policy/>

8) Disciplinary Measures for Non-Compliance with Policies and Guidelines

(1) Measures, scope, and tools for whistleblower protection:

- HARN's human resources administration process echoes its commitment to anti-corruption measures. Although refusal to take part in corruption may deprive HARN of business opportunities, its policy is not to demote, punish, or harm those that do so.
- HARN's employees should not ignore actions in potential conflicts with anti-corruption measures. HARN has established channels for whistleblowing and protection of whistleblowers or those that need advice about conformance to anti-corruption measures.
- HARN has established whistleblowing on corruption, Code of Conduct and non-compliance with laws and corporate regulations to define applicable criteria and guidelines that are suitable and uniform throughout the corporation. Protective measures and fair treatment are in place for whistleblowers or those that provide information, to overcome corruption seriously, strictly, and more efficiently.

(2) Punishment

- HARN has established a suitable and fair process for punishing violators of anti-corruption measures. Any violation of this policy, direct or indirect, calls for disciplinary review under HARN's regulations, consisting of fact-finding, investigation, punishment, and appeal. They could also lead to punishment by law. Employees must therefore master and strictly conform to the Anti-Corruption Policy in every step of their work.

6.2 Code of Conduct

HARN has its written policies and guidelines for Code of Conduct, based on international standards. The compiles the format, scope of standard behaviors and actions that the directors, executives and employees must comply with during the course of business and in their duties with ethics, integrity, fairness and equality. The maintains HARNs image as an organization of sustainable growth.

Furthermore, supervisors are responsible for the monitoring and promotion of Code of Conduct compliance among their subordinates. Violators of the code are subject to disciplinary action.

The essential aspects of the code of conduct are included below:

1. Compliance with relevant laws and regulations
2. Conduct
3. Perform duties with responsibility, honesty, diligence and discipline
4. Confidentiality of company confidential information
5. Maintaining company assets
6. Exercise of social and political rights
7. Treat stakeholders fairly
8. Respect universal human rights
9. Compliance with applicable laws, rules, regulations and regulations and respect for culture customs and traditions of each locality
10. Confidentiality and use of inside information
11. Marketing communications
12. Intellectual Property
13. Use of information and communication technology
14. Anti-Corruption

The Board reviewing of Code of Conduct in the Board Meeting no. 2/2021 on March 25, 2021. Details of the complete information on Corporate Governance and Code of Conduct of HARN are shown in <https://www.harn.co.th/corporate-governance/corporate-governance-policy/>

6.3 Milestone Development on the CG Policy, Guidelines and System During the Year

6.3.1 Review CG Policy, Guidelines and System

The Board regularly reviewed its policies, principles, and practices in relevant to corporate governance. In 2021, Reviewed good corporate governance policies, principles, and guidelines based on the criteria of the SEC and SET, as well as corporate governance assessment have been developed from various institutions over the years. HARN reviewed and update guidelines Corporate Governance and Anti-Corruption the following:

- Amended the Corporate Governance Policies and Principles, to be up-to-date and in line with the current Board duties on scope considering matters top executives.
- Amended the Audit Committee Charter and Risk Management Committee Charter, to ensure responsibilities to be up-to-date and in line with the self-assessment form for anti-corruption develop, revised 4.0 and related reference documents.
- Emphasizing on the responsibilities of Audit Committee and Risk Management Committee, in support and develop efficient risk management culture to ensure in line with the Anti-Corruption Measures Handbook current.
- Amended the Anti-Corruption Measures Handbook, in line with the self-assessment form for anti-corruption develop, revised 4.0 for applied for CAC recertification membership no.1
- Reviewed the Code of Conduct to be up-to-date, in accordance comprehensive and sufficient operational guidelines.

6.3.2 Other Implementation Under CG Code

A survey on corporate governance conducted by the Thai Institute of Directors (IOD) under the Corporate Governance Report of Thai Listed Companies for 2021 has ranked HARN as “Excellent” or 5 stars with an average score overall, its the same score as 2020 and higher than the average score of all listed companies.

In 2021, the Board reviewed Corporate Governance Policies and Principles, complied with CG Code year 2017 principles and adapt to HARN's business context, but did not cover the criteria under the CG Scorecard in 4 items:

1. Voting to elect directors by cumulative voting

HARN's articles of associations require that directors be elected by majority votes and that each shareholder shall have the number of votes as the shares held. In addition, HARN has defined methods to protect the rights of shareholders, including the rights of minor shareholders to propose meeting agenda and nominate directors.

2. Sustainability Report

At present, disclosed information related to compliance with laws, ethics, anti-corruption policy, treatment of employees and stakeholders Including fair treatment and respect for human rights including social and environmental responsibility only the importance that affects the main business and report on in policies of Corporate Governance and Driving Business for Sustainability in the Form 56-1 One Report.

3. Independent directors should consist not less than half of the total Board.

At present, the proportion of independent directors is 4 persons from 9 person. The proportion of independent directors is 44.44% which the products that HARN distributes are various and need to have knowledge in products, markets, competitive conditions and customers' needs.

4. Consider appointing the CG Committee.

Delegating the Chief Operating Officer to oversee and present to the Board of Directors for acknowledgment of the implementation at least once a year. In 2021, reviewing of Corporate Governance in the Board Meeting no. 2/2021 on March 25, 2021.

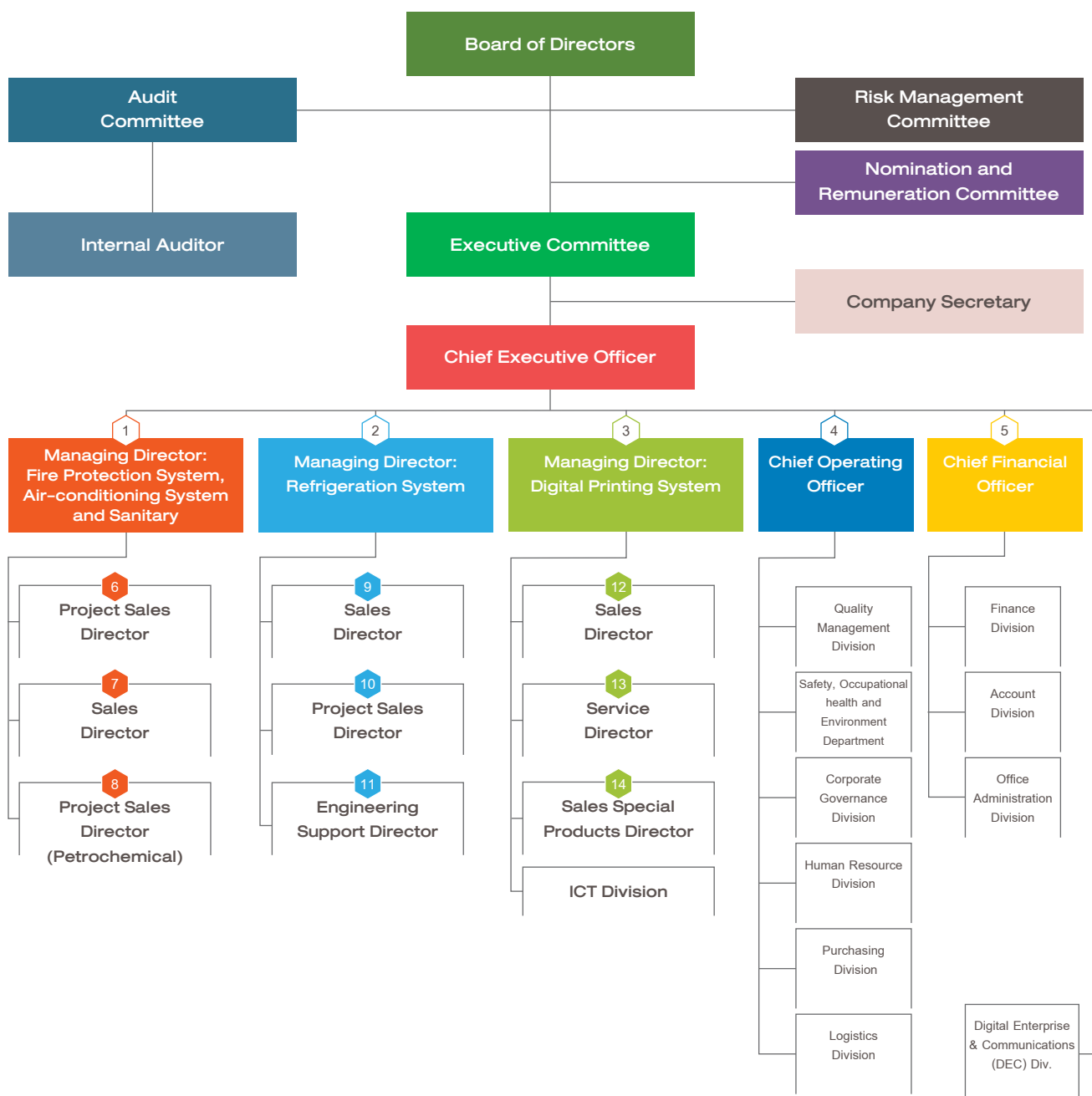
7. Governance Structure and Key Information of the Board, Board-Committees, Executives, Employees and Others

7.1 Governance Structure

Harn Engineering Solutions Public Company Limited's management structure or "HANR" as of December 31, 2021, comprises of the Board of Directors and 4 Board-Committees supporting matters: the Audit Committee, Nominating and Remuneration Committee, Executive Committee, and Risk

Management Committee. Composed of qualified individuals under Section 68 of the Public Companies Act B.E. 2535 (1992) (as amended) and the Securities and Exchange Act B.E. 2535 (1992) (as amended). The Chief Executive Officer is the top executive of HARN.N

Organization Chart of Harn Engineering Solutions Public Company Limited



Note : Management no. 1 - 14 is Company executives according to the Notification of the Securities and Exchange

7.2 Board of Directors

7.2.1 Composition of the Board

Under of HARN articles of association, the Board consists of:

- Least 5 directors.
- At least half of the directors must reside in the Kingdom.
- Must consists of Independent Directors of at least one (1)-third (3) of all Directors and the number must be at least 3 directors.
- The Independent Directors must as Audit Committee the number must be at least 3 directors.
- Non-Executive Director must of at least 1 director in knowledge engineering in main business and at lest 1 director must in knowledge of accounting.
- Must consists of Executive not more half of all Directors

According to the certification of the Ministry of Commerce at December 31, 2021, the HARN Board consisted:

- 7 non-executive directors at 77.77% of the entire Board
- 4 independent directors at 44.44% of the entire Board, which exceeds the legal limit
- 3 female directors at 33.33% of the entire Board
- 2 executive director at 22.22% of the entire Board
- Board Expertise at December 31, 2021

Core Business 2 directors ratio 22%	Strategy, Marketing and Competition 3 directors ratio 33%	Accounting and Finance 5 directors ratio 56%	Technology and IT 2 directors ratio 22%
Legal related to business 1 directors ratio 11%	Risk Management 4 directors ratio 44%	Human Resources 2 directors ratio 22%	Rresponsibility and Sustainable Development 2 directors ratio 22%

7.2.2 The Current Board of Directors

The Board of Directors as of December 31, 2021, consisted of:

No.	Name	Position	Appointed Date
1.	Dr. Thakol Nunthirapakorn	Independent Director Chairman of the Board Chairman of the Audit Committee	September 5, 2012 ¹ June 1, 2015 September 5, 2012
2.	Miss Voranuch Supaibulpipat	Independent Director Member of the Audit Committee Chairperson of the Nomination and Remuneration Committee	September 5, 2012 ¹ September 5, 2012 December 17, 2018
3.	Mr. Prasert Deejongkit ²	Independent Director Member of the Audit Committee	April 23, 2021 April 23, 2021
4.	Mr. Parkphum Wongpaitoon ³	Independent Director / Member of the Nomination and Remuneration Committee	February 25, 2021 April 23, 2021
5.	Mrs. Valeeratn Chuerboonchai	Director	September 5, 2012
6.	Mr. Wirat Sukchai	Director Chairman of the Executive Committee (Acting) Chairman of the Risk Management Committee Chief Executive Officer Managing Director	September 5, 2012 January 1, 2020 March 1, 2018 December 1, 2016 September 5, 2012

No.	Name	Position	Appointed Date
7.	Mr. Thammanoon Tripetchr	Director	November 1, 2016
		Member of the Risk Management Committee	November 11, 2016
		Member of the Executive Committee / Managing Director	December 1, 2016
8.	Dr. Jain Charnnarong	Director	April 28, 2017
		Member of the Executive Committee	March 1, 2017
9.	Mrs. Sirima Iamsakulrat	Director	September 5, 2012
		Member of the Nomination and Remuneration Committee	December 17, 2018

Note : ¹ HARN was listed on the Stock Exchange of Thailand in 2014, causing the directors to continuously hold positions.

² Mr. Prasert Deejongkit was appointed as an independent director and audit committee with effect from April 23, 2021, replacing Dr. Sothitorn Mallikamas, who retired by rotation at the 2021 Annual General Meeting (AGM).

³ Mr. Parkphum Wongpaitoon was appointed as an independent director with effect from February 25, 2021 and was appointed as member of the nomination and remuneration committee with effect from April 23, 2021, replacing Dr. Sothitorn Mallikamas, who retired by rotation at the 2021 Annual General Meeting (AGM).

With Miss. Wasukan Boonmee is the Company Secretary.

All independent Director and Audit Committee is able to express opinions freely according to the relevant laws and must have qualifications that completely fulfill the requirements stipulated by the Notification of the Capital Market Supervisory Board No. Thor.Jor. 28/2551 regarding application for and Approval of Offer for Sale of Newly Issued Shares (and the amendments).

Authorized Director to Sign and Bind for HARN

According to HARN's Articles of Association, The Board Two (2) authorized directors shall sign to represent HARN, which the Shareholder's Meeting or the Board Meeting has the power to determine the list of authorized directors sign to represent HARN.

Through the Board of Directors Meeting No. 1/2021 on Thursday, February 25, 2021, the Board has approved directors having authority to sign on behalf of HARN, namely Mr. Wirat Sukchai, Mr. Thammanoon Tripetchr, Mrs. Sirima Iamsakulrat and Mr. Jain Charnnarong any 2 of the 4 representative directors jointly sign.

Appointment and Dismissal of Directors

1. The Board consists of least 5 directors are appointed at shareholders' meeting. In addition, the Board must consist of a minimum of 3 Independent Directors of all Directors and as Audit Committee, which at least half of the directors must reside in the Kingdom and the directors' executive not more than half of the directors, by non-Executive Director must of at least 1 director in knowledge in main business and accounting. All directors must have qualifications as specified by law and the Articles of Association. However, as of December 31, 2021, the Board had 4 independent directors, 3 female directors, and all of them resided in Thailand. 2 directors are experts in main business, namely Mr. Parkphum Wongpaitoon and Mrs. Sirima Iamsakulrat, and 5 directors are experts in accounting, namely

Dr. Thakol Nunthirapakorn, Miss Voranuch Supaibulpipat, Mr. Prasert Deejongkit, Mrs. Sirima Iamsakulrat and Mrs. Valeerat Chuerboonchai.

2. The shareholders' meetings are to appoint qualified directors whom the Nomination and Remuneration Committee has elected and proposed to the Board.

3. At the General Meeting of Shareholders, one (1) in third (3) of the directors - or if the number is not a multiple of three, then the number nearest to one-third - will retire from directorship. The directors retiring in the first and second year after the first was listed are company registration to be drawn by lots. For subsequent years, those with the longest terms are to retire.

Committees that retire from the position, may be elected as a committee once again with unlimited rights. However, the Board Stipulates a policy that Independent Directors may be in position not for more than 9 consecutive years, counting from the day of the appointment and counting from the day of the company Listed on the stock exchange.

4. Any director who wishes to resign from directorship must tender his or her resignation to HARN. Such resignation will take effect from the date the resignation letter reaches HARN.

5. In case a director's seat is vacated for reasons other than term completion, the Board may elect a qualified person and without the prohibitions stipulated by HARN's Articles of Association to fill the vacancy at the next Board meeting unless the remaining term of the vacated director is less than two months. The acting director must secure at least three (3)-quarters (4) of the votes of the remaining directors. The personal can remain in position remain in the position of director for the remaining term of the predecessor.

6. For voting to remove any director from the directorship before the completion of his or her term, at least two (2) in third (3) of the vote of eligible shareholders present at the meeting is required as well as at least half of the total number of shares represented by the eligible shareholders present at the meeting.

Qualifications of Directors

1. Must not be over 80 years of age, which they may be re-elected for another year on year, taking into knowledge necessary for business. However, must be approved by the Board of Director meeting.

2. The Board must be duly qualified, without the prohibitions stated in the Public Limited Company Act and the securities and exchange law, Including not having characteristics indicating lack of suitability as specified in the notification of the Securities and Exchange Commission, must whose name be listed as directors of a company issuing securities according to the Notification of the Capital Market Supervisory.

3. Independent directors must command independence as required by SET's Notification on the qualifications and scope of work of the Audit Committee.

4. Must never been sentenced to imprisonment, except for violations of the law by negligence or a petty offence and never have been expelled, dismissed, or removed from a position because of malfeasance.

5. Must not be a political official, except for holding a directorial position under a provision of law and not hold any position in a political party or be an official of political party.

6. Have knowledge and experience be beneficial to the business, honesty, integrity, and ethics and perform duties for the fullest.

7. Representing of shareholders as a whole not representing any group.

8. Hold any position a maximum of 3 directorships in SET-listed companies, without exception.

9. Prohibited conducting business or become a partnership or being director, executive, authorized in other juristic with same business, which the benefit of oneself or another person, unless the Board meeting to the resolution of appoint.

7.2.3 Roles, Duties and Responsibilities of the Board

The Board of Directors has a main role in determine policies and overall of the corporate, strategic planning, governance, audit, evaluate business performance of executives according to plans as well as to operate the business under the law, rules, shareholders' resolution with ethical management to reach goals at maximum benefits to HARN and shareholders, by clearly separate roles and responsibilities of the Board and the Executives, in line with the Corporate Governance Policy and Code of Conduct as follows:

Roles, Duties of the Board

1. Define HARN's vision, policies, code of conduct, strategies, directions, annual budget, management structure and major plans and consider potential risks so as to ensure that management can effectively drive plans into practice. HARN is running its businesses with transparency responsibility to stakeholders, society and environment.

2. Assess the performance of the Chief Executive Officer (CEO) and decide suitable remuneration, to induce short-term and longterm motivation.

3. Oversee an accounting systems, financial reporting and auditing, as well as the efficient and effective internal control and internal audit systems.

Define comprehensive risk management, have a mechanism for complaints and providing protection for complainants' guidelines, as well as ensure an efficient risk management system or process and follow up every quarterly.

4. Oversee and supervise issues regarding related-party transactions and manage potential conflicts of interest and reports to the Board on a regular

5. Oversee that appropriate are reviewed and communicated Corporate Governance Policies and Principles and Code of Conduct at least once a year.

6. Oversee to have a Policies and Anti-corruption Measures to comply with the requirements of the law related, including communicate to the Board, management, employees and related third parties, and promote it as a culture.

7. Monitor and supervise the performance of the management with the specified policies, plans and budget in an efficient manner, and ensure that HARN's business management is in line with the corporate governance policy.

8. Approval for long-term investment, loans or other as appropriate.

9. Approve employee development and executive succession plan, and oversee procedures there is an effective.

10. Approve and/or give opinion on related transactions, acquisition or disposition of assets, investment and any other of HARN and subsidiaries with the laws, notifications, requirements, rules and regulations, unless it is prescribed by law to seek approval from the shareholders' meeting.

11. Authorized to appoint the Chief Executive Officer and Board-Committees who has been nominated under the nomination process and procedures under relevant laws and regulations, including assign duties and responsibilities.

In case the Board's assignment of the Chief Executive Officer, Managing Director or any other person to perform duty on behalf, must the scope of power and duties of the authorized person clearly specified and shall be clearly recorded minutes as a resolution of the Board meeting,

However, the authority and duties stated above must no any conflict of interest with HARN or subsidiary, unless the approval of such transactions is in line with the policy and criteria duly approved by the Board

12. Appoint the Company Secretary who has appropriate experience and qualifications in the roles and responsibilities specified in the Securities and Exchange Act.

7.3 Information on Board-Committees

The Board appointed of the 4 Board-Committees supporting matters: the Audit Committee, Nominating and Remuneration Committee, Executive Committee, and Risk Management Committee which clearly defining duties and responsibilities, to consider specific issues, scrutinize and propose the Board for consideration.

1) The Audit Committee

Each quarter the Audit Committee, together with the Chief Financial Officer which as audit committee secretary and the external auditor (Dharmniti Auditing Co., Ltd.), reviews

financial reports. The Board is accountable for HARN's and consolidated subsidiary financial statements as well as other financial information presented in the annual report. The financial reports are prepared under generally accepted accounting principles and are audited and certified by Mr.Thanawut Piboonsawat, C.P.A. No. 6699, of Dharmniti Auditing Co., Ltd. Material information, financial and non-financial, is accurately, completely and consistently disclosed.

The Board approved the appointment of the Audit Committee on September 5, 2012, which appointed from independent director of HARN's with the qualifications specified by SEC laws and SET must consist of at least 3 directors and at least 1 of whom must be adequately qualified and experienced in reviewing the credibility of financial statements. As of December 31, 2021, it consisted of three independent directors as follows:

The Audit Committee

1. **Dr. Thakol Nunthirapakorn**
Chairman of the Audit Committee
2. **Miss Voranuch Supaibulpipat**
Member of the Audit Committee
3. **Mr. Prasert Deejongkit**¹
Member of the Audit Committee

Note :¹ Mr. Prasert Deejongkit was appointed as an Audit Committee with effect from April 23, 2021, replacing Dr. Sothitorn Mallikamas, who retired by rotation at the 2021 Annual General Meeting (AGM).

All audit committee is the members who have adequate competence and experience in reviewing the reliability of the financial statements, which Mr. Wisit Wachiralarpaitoon, Chief Financial Officer as secretary.

Duties and Responsibilities of the Audit Committee

1. Review financial reporting to ensure its accuracy and adequacy.
2. Review the efficiency and effectiveness of internal control, risk management and internal audit processes and consider on the appointment, transfer and dismissal of the internal audit and review annual audit plan, fees and personnel.
3. Review compliance with laws, SET requirements, SEC and law relevant to HARN's businesses.

4. Review for compliance with the self-assessment and documents to anti-corruption measures.

5. Review and opinions on transactions to cause fraud that may affect operations, to comply with anti-corruption measures to the Board's for acknowledgment.

6. Oversee complaints, whistleblowing and investigate fact, report to the Board's for punishment or solve the problem according to the anti-corruption policy

7. Consider select, nominate and dismissal of an independent of the external auditor of HARN's and offer the fees, as well as review financial reporting process to ensure accuracy and credibility, including a meeting with the external auditor in the absence of management at least once a year.

8. Review connected transactions or transactions of potential conflicts of interest under SET's laws and requirements.

9. Disclose a report on its annual performance and the fees of the auditor in the annual report of HARN.

10. Perform other tasks as required by the law or as assigned by the Board within the committee's scope of duties and responsibilities.

11. Prepare a charter that is compatible with scope of work and responsibilities. The charter must be approved by the Board and revised at least once a year.

12. Report internal audit performance to the Board for acknowledgment.

In 2021, the committee held 4 meetings and duly reported its findings to the Board. In addition, it participated in quarterly audits along with the external auditor and the Chief Financial Officer. Disclosed its annual performance in the Report of the Audit Committee.

2) Nomination and Remuneration Committee

The Board approved the appointment of the Nomination and Remuneration Committee on December 17, 2018, by appointing 3 directors, which are fully qualified in accordance charter.

As of December 31, 2021, it consisted of 2 Independent Director and 1 Non-Executive Director: as follow;

Nomination and Remuneration Committee

1. Miss Voranuch Supaibulpipat

Chairperson of the Nomination and Remuneration Committee
(Independent Director)

2. Mr. Parkphum Wongpaitoon^{/1}

Member of the Nomination and Remuneration Committee
(Independent Director)

3. Mrs. Sirima Iamsakulrat

Member of the Nomination and Remuneration Committee
and Secretary

Note : ^{/1} Mr. Parkphum Wongpaitoon was appointed as member of the nomination and remuneration committee with effect from April 23, 2021, replacing Dr. Sothitorn Mallikamas, who retired by rotation at the 2021 Annual General Meeting (AGM).

Duties and Responsibilities of the Nomination and Remuneration Committee

Nomination

1. Review qualification of the Board and Board-Committees consideration due regard for the composition: knowledge, expertise, experience, talents are independent according to the established criteria.

2. Consider qualification of Chief Executive Officer as suitable for HARN's business management, compatible with business strategies, due regard for the composition: education, experience, knowledge, expertise and and into consideration important business environment, such as economic, industry and competitiveness.

3. Select, set process and criteria for nominating directors in accordance with the structure set in 1 and 2 in compliance with HARN's Board Skill Matrix to ensure transparency.

4. Propose directors for Board-Committees duties with due regard for the committees' compositions, qualifications, expertise, and competencies, including Chief Executive Officer. Then propose the Board to consider when their vacancy.

5. Oversee the orientation and provide documents useful for the performance of duties to the newly appointed directors.

6. Prepare and review with HARN's top executive succession plans to enable continued business.

7. Opportunity for minority shareholders to propose names of persons to be nominated as directors.

8. Review a charter at least once a year, assess its own performance outcomes and report the findings to the Board for acknowledgment, disclose its own performance in the annual report, perform other tasks as assigned by the Board.

Remuneration

1. Define policy and define the criteria for remuneration to be appropriate with the duties and responsibilities and propose fair, sensible remuneration at monetary and other benefits for the Board and Board-Committees' for the Board's and the shareholders' approval

2. Define criteria for assessing performance outcomes and remuneration for the Chief Executive Officer to the Board's for approval.

3. Review the Nomination and Remuneration Committees charter at least once a year.

4. Assess its own performance outcomes and report the findings to the Board for acknowledgment, disclose its own performance in the annual report, perform other tasks as assigned by the Board.

In 2021, the committee held 2 meetings, with all committee members at the time in attendance, the Nominating and Remuneration Committee disclosed its annual performance in the Report of the Nominating and Remuneration Committee.

3) Executive Committee

The Board approved the appointment of the Executive Committee, appoint among directors and/or top executives, who are competent in business management of HARN's and prepare policy, business plan, budget, management structure, check and follow up performance to the policy by the Board.

As of December 31, 2021, it consisted of 5 the Board and top Executive, as 1 Non-Executive Director, Executive Director and 2 Top Executive; as follow;

Executive Committee

1. **Mr. Wirat Sukchai**
Chairman of the Executive Committee
2. **Mr. Thammanoon Tripetchr**
Member of the Executive Committee
3. **Dr. Jain Charnnarong**
Member of the Executive Committee
4. **Mr. Wisit Wachiralappaitoon**
Member of the Executive Committee
5. **Mrs. Varinkan Teraumranon**
Member of the Executive Committee and Secretary

Duties and Responsibilities of the Executive Committee

The Executive Committee scrutinize and prepare policy, business plan, budget, management structure, and various management, to be in with the economic conditions, propose the Board for approve: as follow;

1. Propose policies, strategies, targets, operation plan, annual budget, establishment of a new business/dissolution/merger/transfer of business, joint venture (with participation in management), prepare financial plan, organizational structure, as well as consider and scrutinize the proposals of the executive, to the Board's for approval.

2. Oversee the HARN's business and follow up operation to comply with the policies, targets and budget tasks as assigned by the Board and regularly report the performance to the Board in meeting.

3. Approve significant investment in budget tasks as assigned by the Board.

4. Approve off-budget investment an amount not more Baht 10 million, to the Board's for approval.

5. Approve loans, acquisition of credit lines of HARN an amount not more Baht 10 million and total amount not more Baht 30 million, in case of must the HARN's assets are used as collateral, to the Board's for approval.

6. Propose payment an interim dividend or annual dividend for the Board's and the shareholders' approval.

7. Assign the power of attorney or delegate specific tasks to other persons, provided that the action complies with the document on the power of attorney or rules, regulations, or directives of the Board or HARN, or both.

The authority and duties of the Executive Committee stated above are invalid for any conflict of interest with HARN in any form resulting from the Executive Committee exercise of the authority.

8. Perform other tasks as assigned by the Board.

In 2021, the Executive Committee held 12 meetings, with all committee members at the time in attendance, and the disclosed its annual performance in the Report of the Executive Committee.

4) Risk Management Committee

The Board approved the appointment of the Risk Management Committee on November 11, 2016, by appointing directors and top executive, prepare risk management policy of business and oversee process, to appropriately reduce the impact of variable factor on the HARN's.

As of December 31, 2021, it consisted of 12 the Chief Executive Officer, Chief Financial Officer, Chief Operating Officer, Managing Director and Director each Department: as follow;

Risk Management Committee

1. **Mr. Wirat Sukchai**
(Acting) Chairman of the Risk Management Committee
2. **Mr. Thammanoon Tripetchr**
Member of the Risk Management Committee
3. **Mr. Rattanaphan Mukhariwattananon**
Member of the Risk Management Committee
4. **Mr. Pracha Phromphornchai**
Member of the Risk Management Committee
5. **Mr. Suchat Suwatnodom**
Member of the Risk Management Committee
6. **Mr. Kittiphong Kittimethawenun**
Member of the Risk Management Committee
7. **Mr. Vachiravit Akaraseranee**
Member of the Risk Management Committee
8. **Mr. Sukit Litikorn**
Member of the Risk Management Committee
9. **Mr. Withoon Thamee**
Member of the Risk Management Committee
10. **Mr. Pongsawat Penglengpol**
Member of the Risk Management Committee
11. **Mr. Wisit Wachiralappaitoon**
Member of the Risk Management Committee
12. **Mrs. Varinkan Teraumranon**
Member of the Risk Management Committee and Secretary

Duties and Responsibilities of the Risk Management Committee

1. Define and review the risk management policy and guidelines of HARN, in both operational risks and the risk anti-corruption policy, to the Board's for acknowledgment.
2. Define risk management strategies in line with the risk management policy to assess, monitor and control to be at appropriate.
3. Oversee the implementation of the risk management policy tasks as assigned by the Board.
4. Define risk measurement criteria and acceptable risk limit.
5. Define measures to manage risks in alignment with the prevailing circumstances.
6. Review adequacy of the risk management system and compliance in line with the defined policy.
7. Report to the Board on a quarterly, implement and risk status, as well as changes and improvement actions in line with the defined policy and strategy.
8. Oversee a risk management working group as necessary.
9. Support working group in respect of personnel, budget and other resources required, in line with the defined scope.
10. Support risk management, as well as promote the development internal risk management culture.
11. Review and report risk management outcomes to the Board at least once year and disclosed in annual report. For factors or events with potential significant impacts on HARN or stakeholders, the Board must be notified immediately.

In 2021, the Risk Management Committee held 4 meetings, with all committee members at the time in attendance, and the disclosed its annual performance in the Report of the Risk Management Committee.

7.4 Information of the Top Management

7.4.1 Top Management Team Members

As of December 31, 2021, of 12 members: as follow;
(HARN's organizational chart reported under 7.1 Governance Structure), **profile details in Attachment 1, page 201-209**

Top Management Team Members

- 1. Mr. Wirat Sukchai**
Chief Executive Officer and Managing Director: Fire Protection System, Air-conditioning system and sanitary
- 2. Mr. Thammanoon Tripetchr**
Managing Director : Digital Printing System
- 3. Mr. Wisit Wachiralappaitoon**
Chief Financial Officer
- 4. Mrs. Varinkan Teraumranon**
Chief Operating Officer
- 5. Mr. Rattanaphan Mukhariwattananon**
Project Sales Director: Fire Protection System, Air-conditioning system and sanitary
- 6. Mr. Pracha Phromphornchai**
Sales Director: Fire Protection System, Air-conditioning system and sanitary
- 7. Mr. Suchat Suwatnodom**
Project Sales Director (Petrochemical): Fire Protection System, Air-conditioning system and sanitary
- 8. Mr. Kittiphong Kittimethawenun**
Sales Special: Refrigeration System
- 9. Mr. Vachiravit Akaraseranee**
Project Sales Director: Refrigeration System
- 10. Mr. Sukit Litikorn**
Engineering Support Director: Refrigeration System
- 11. Mr. Withoon Thamee**
Sales Director: Digital Printing System
- 12. Mr. Pongsawat Penglengpol**
Sales Special Products Director: Digital Printing System

Note : No. 1-12 are "Management" under SEC's notification.

Roles, Duties of the Chief Executive Officer

The Chief Executive Officer is authorized and responsible for managing the Board-assigned and HARN's overall business, which must be strictly and prudently managed with integrity under the Board-approved plans or budget in the best interests of HARN and its shareholders: as follow;

1. Leader in define short and long-term business strategies, policies and plans.
2. Oversee the overall operating results to strategic and policy.
3. Support the Board and Board-Committees to corporate governance act as targeted.
4. Oversee employee development projects in line with growth of HARN, as well as maintain corporate image.
5. Monitor, inspect, control and reporting performance outcomes on plan to the Board every quarterly.
6. Ensuring implementation of the Board-approved policies, plans, and budget.
7. Hiring, appointing, removing, transferring, promote, suspend from work, dismissing, punishing, set the salary or others compensation, increase salary or wages and bonuses on rules.
8. Issue, amend, add, improve or revoke orders, rules, memorandum and work regulations procedure to ensure compliance with the policy and maintain work discipline within the HARN.
9. Perform other tasks as assigned by the Board.
10. Assign the power of attorney or delegate specific tasks to other persons, provided that the action complies with the document on the power of attorney or rules, regulations, or directives of the Board or HARN, or both.

Roles, Duties of the Managing Director

Managing Director shall have the power, duties in managing as well as concerned matters and business as assigned by the Board of Directors as follows:

1. Oversee the management of overall operations and approval of concerning operating day-to-day of HARN, consistency with the objectives, regulations, rules, orders, resolutions of the Board meeting and shareholder meeting under applicable laws and the scope of power and responsibilities as directives of the Board.
2. Prepare policies, strategies, targets, business plan and annual budget plan, as well as management structure, for the Executive Committee and the Board approval

3. Operating and/or managing business in line with the approved policies, strategies, targets, business plan and budget, the Board's approval.

4. Monitor, inspect, control and reporting performance outcomes on plan to the Board every quarterly.

5. Oversee personnel of all work units carry out efficient and effective operation.

6. Authorized to approve investment or business expense, payments under contract/ agreement / procurement / contract and operating day-to-day within the approved budget

7. Perform other tasks as assigned by the Executive Committee.

8. The Board has authorized to corrections, adding, terms, renew, extending, shortening, cancel, period termination of the contract, as well as the signing of documents related to the contract. The power of attorney or delegate specific tasks to other persons, provided that the action complies with the document on the power of attorney or rules, regulations, or directives of the Board or HARN, or both.

However, the authority and duties of the Chief Executive Officer and Managing Director stated above are invalid for any conflict of interest with HARN in any form resulting from the Chief Executive Officer and Managing Director exercise of the authority. In 2021, no such cases have arisen.

Succession Plan

Nomination and Remuneration Committee consider and prepare the succession policy of top executive propose to the Board, to nominate persons with appropriate knowledge, capability, and experience to fill the positions of HARN management. They must be legitimately qualified with no prohibited characteristics.

HARN has been grooming top executive to become qualified candidates to replace the top executive due to retire in the next 3 - 5 years. There are processes in order to set up a Succession Plan to develop a for potential leaders to assume higher positions that become vacant, namely: Chief Executive Officer, Managing Director, Chief Financial Officer, Chief Operating Officer, Director of various departments. Report progress to the Board at least once a year.

Labor Disputes

No reports of HARN labor disputes have been received over the past 3 years.

7.4.2 Top Executive's Remuneration Policy

Top Executive's Remuneration

The remuneration of the Chief Executive Officer complies with the policies and guidelines set by the Nomination and Remuneration Committee and the Board. For the remuneration of top executives, it complies with the policies and guidelines set by the Chief Executive Officer and Managing Director that is linked to HARN's performance by defining key performance indicators and setting KPI goals about annual objective-based performance and results of short-term and long-term strategic objectives. In terms of finance, society, and the environment, through HARN's 3 groups of sustainability cycle, namely SMART Business, SMART People, and SMART Environment, according to the Balanced Scorecard, these indicators cover the following items: net profit, sales growth, market shares, marketing expansion into foreign markets, operating expenses to net operating income, employee satisfaction, continuous development of work systems, and business management processes toward excellence, increased competitiveness, and long-term business operations to lead to sustainable success under transparency. Relevant risks are also evaluated, including its vision, goal, and strategy, as well as its shareholders' continued added-value generation.

In addition, we aim to keep compensation competitive in the relevant business sectors in order to ensure that HARN can attract and retain skilled employees to work and continue production for HARN.

Chief Executive Officer, Managing Director, Chief Operating Officer, Chief Financial Officer will receive remuneration in both monetary and other benefits according to the rules of HARN as well as the director of each department, consists; Salary, Bonuses, EJP and Other benefit (provident fund, life and health insurance, scholarships) etc., except incentives based on performance. The remuneration paid to executives: as follows;

Total Remuneration Paid to Chief Executive Officer and Managing Director in 2020 - 2021

In 2021, HARN payment of remuneration for Mr. Wirat Sukchai, Chief Executive Officer and Mr. Thammanoon Tripetchr, Managing Director of HARN executives and payment of remuneration for Mr. Prasertsak Det-Udom, Chief Executive Officer of the Aiyaraharn Co., Ltd. ("subsidiary") as follows:

Unit: Million Baht

Remuneration	2021		2020	
	Person	Amount	Person	Amount
Salary, Bonuses and Other such as social security contributions and EJIP	3	9.98	3	10.80
Provident fund contributions	3	0.31	3	0.30

Note : Remuneration Chief Executive Officer and Managing Director reference to consolidated financial statement of HARN

Additional information on the Top Executive:

Records have shown no violation of the law within the past 10 years regarding:

- 1) Being sentenced for criminal charges except for violations of traffic laws, petty charges, or similar charges.
- 2) Being sentenced to bankruptcy or having assets controlled.
- 3) Serving as an executive or an authority in a company or partnership sentenced to bankruptcy or whose assets are controlled.

7.5 Information of the Employees

Total Employees

HARN, has policy stresses the development of human resources management systems compatible with technological advancement. It not only promotes both competence among its employees, but also encourage them to actively take part in public service on its development into a sustainable organization to elevate competitiveness and respond to internal changes of a corporation.

The employee headcount of HARN and its subsidiary as of December 31, 2021, total 249 persons, divided into 242 persons of HARN and Subsidiaries HarnVietnam Co., Ltd. 2 persons, Aiyaraharn Co., Ltd. 5 persons, which into 156 male, 93 female, divided by department of work as follow;

Operational Line	Number of Employees (persons)		
	2021	2020	2019
Project Sales Group	28	35	35
Fire Protection, Air Conditioning & Sanitary System Sales Group	30	29	29
Project Sales Group (Petrochemical)	3	4	7
Refrigeration System Sales Group	15	16	14
Engineering Support Group	9	7	8
Digital Printing System Sales Group	28	26	28
Service Group	33	33	32
Special Product Sales Group	14	15	16
Operating Group	45	42	48
Financial Group	37	37	37
Subsidiaries	7	9	3
Total	249	253	257

Remuneration for Employees (excluding the Chief Executive Officer and Top Executi) in 2020 - 2021

Unit: Million Baht

Remuneration	2021		2020	
	Person	Amount	Person	Amount
Salary, Bonuses and Other such as social security contributions and EJIP	238	152.56	242	159.80
Provident fund contributions	238	4.14	242	3.93

Note : Remuneration employees reference to separated financial statement of HARN

HARN sets the remuneration of employees based on the short and long-term performance through Managing the performance in accordance with the strategic direction, which is continuous process to be accordance with the planned goals, will receive remuneration in both monetary and and other benefits according to the reguls of HARN consists; Salary, Bonuses, overtime, brokerage, incentives, EJIP and Other benefit (provident fund, life and health insurance, scholarships).

Provident Fund

Currently 240 employees have joined the Fund from its total 240 employees are eligible to participate or as 100%, in 2021, HARN contributed to the fund Baht 4,456,531 millon, managed by an authorized UOB Asset Management (Thailand) Co., Ltd. which disclosed related information in compliance with the Investment Governance Code to be compliant with the provisions of Provident Fund Act B.E. 2542 (1999) with employee savings rate to go up in line with the increasing years of service of the respective employee. Moreover, HARN also allows the employees to select or change their investment policy as considered proper for them with acceptable risk level. The employee choice can be made twice a year. Including an increase in the contribution rate, to encourages employees to have financial planning after retirement.

Other Remunerations

HARN has instituted employee welfare and other remuneration programs apart from salary, bonus, and provident fund contributions for management and all employees. This is to keep up with economic conditions, the cost of living, and other standards peer companies' as well as HARN's performance.

1. Annual staff health check, Group life and health insurance is taken out to insure the employees, with coverage amount varied to job position and level of risk associated with nature of job performance.

2. the Employee Joint Investment Program (EJIP). The period of May 1, 2020 to April 30, 2025, with a total duration of 5 years for employees and director on the voluntary basis and own HARN, which will be regarded as savings for the employees' long-term financial security.

Moreover, HARN also offers scholarships of both undergraduate and graduate levels, and financial support for in-house and external training programs and seminars and provide 4 flu strains at a special price

7.6 Other Informations

7.6.1 Persons Assigned

Company Secretary

To comply with the CG principles of listed companies under the category of directors' responsibility and the terms of the Securities and Exchange Act B.E. 2535 (1992) (and the amendments), the Board appointed a Company Secretary to provide the Board with legal advice and remind them of assorted regulations that they need to know and comply with, hold meetings, supervise assorted Board activities to enable them to perform efficiently and effectively, prepare and maintain key documents, including directors' registration, Board meeting notices and minutes, annual reports; issue shareholders' meeting notices and minutes; and keep reports on vested interests reported by directors or management.

The Board meeting held 4/2021 resolved to appoint of Miss Wasukan Boonmee as Company Secretary since August 11, 2021.

HARN has set qualifications of Company Secretary as regards age, education, communication skills, interpersonal skills, capability in coordinating with internal and external parties etc. In the case that the Company Secretary vacates office or is unable to perform duty, the Board shall appoint the new

Company Secretary within 90 days from the date on which the existing Company Secretary vacates office or can no longer perform duty, and during the lapse of which, the Board shall assign any one of the directors to perform Company Secretary duty as per the Securities and Exchange Act B.E. 2535 (1992) (and the amendments), **profile details in Attachment 1, page 210**

In 2021, HARN has announced information under material events within the timeframe specified by the authorities. This is to keep the securities trading in order, liquid, fair, and all investors are equally informed. Not punished by regulatory corporate and there is no wrongdoing or violation of laws, regulations of the SEC and SET.

The person supervising accounting

The Chief Financial Officer, is assigned by position to be responsible for the highest responsibility in finance and accounting. Mr. Wisit Wachiralappaitoon has been holding the position since March 16, 2016.

The Account Manager, is assigned by position to be responsible for supervising accounting. Miss Ananya Proyngoen has been holding the position since December 1, 2016 is directly in charge of accounting management, she

is a qualified as an accountant under the criteria set by the Department of Business Development.

However, the person taking the highest responsibility in finance and accounting and the person supervising accounting of HARN, is a qualified as an under the criteria set by the SEC and SET, consists; qualifications, education, experience, and undergone at least 6 hours of continuous accounting knowledge development training per year. **profile details in Attachment 1, page 207 and 210**

Course summary Orientation and Refresh

Course ¹⁾	the person taking the highest responsibility in finance and accounting (CFO)	the person supervising accounting ³⁾
Orientation 12 hour	✓	✓
Accounting knowledge (Refresh) 6 hours per year ²⁾	✓	✓

Note : ¹⁾ The hours for Orientation and Refresh training is as specified by the SEC.

²⁾ Refresher course that is consistent and beneficial to HARN.

³⁾ The person supervising accounting is an accountant who has the qualifications and conditions of being an accountant in accordance with the rules prescribed in the Notification of the Department of Business Development.

CPD hours of the highest responsible person in accounting and finance (CFO) for 2021

Year	Training Institute	Course / Activity Details	Number of CPD hours		
			Account	Other	Informal
2021	Dharmaniti Training and Seminar Company Limited	Accounting tools with RPA, AI and OCR technology.	3	3	0
2021	Dharmaniti Training and Seminar Company Limited	Calculating employee benefits preparation problems and solutions to be correct according to accounting standards.	6	0	0
2021	The Stock Exchange of Thailand	Summary TFRS for PAEs need to know and changes in 2021 Part 1/2.	0	6	3
2021	The Stock Exchange of Thailand	Summary TFRS for PAEs must be known and changed in 2021, part 2/2.	0	0	3
2021	The Stock Exchange of Thailand	THE NEW CFO 2021 #How to Make Financial Instruments Work	0	0	3:30
2021	The Stock Exchange of Thailand	Trends, direction of doing M&A, important issues to consider and strategies for M&A success.	0	0	2:30
2021	The Stock Exchange of Thailand	Trends, direction of doing M&A, important issues to consider and strategies for making M&A successful 2/2	0	0	2:30
2021	Federation of Accounting Professions In the royal patronage	money laundering bill amended edition professional practitioner "I can't know".	0	0	2
2021	Dharmaniti Training and Seminar Company Limited	Financial Reporting Standards (TFRS) effective 2021.	0	0	6
Total Number CPD hours			9:00	3:00	22:30

Number of CPD hours of the accounting supervisor for 2021

Year	Training Institute	Course / Activity Details		
		Account	Other	Total
2021	VAT 0% Taxes that exporters must know.	0	3	3
2021	Professional tax accounting.	4	4:30	8:30
2021	FOCUS-Key Issues in Financial Statement Audit.	6:30	0	6:30
2021	Inventory accounting.	6:30	0	6:30
2021	Tips for preparing and presenting a simple cash flow statement	7	0	7
2021	Problems with withholding tax (PND 54) and VAT remittance (Phor.Phor.36) when paying overseas.	0	3	3
Total Number CPD hours		24:00	10:30	34:30

Head of the Office of Corporate Audit

HARN does not have an internal audit work unit yet, The Audit Committee has approved the appointment of Ultima Advisory Company Limited, by assigning Miss Chonlada Thirapattananon and Miss Siriphan Tantipanichphan as internal audit of HARN, as an external audit agency that not related to HARN, to ensure that HARN has an adequate and appropriate internal control. **More details appear in Part 2 “9. Internal Control and Connected Transactions”, page 132-139 and profile details in Attachment 3, page 212**

Head of Compliance

The Chief Operating Officer, is assigned by the Board to currently responsible for HARN's compliance and report to the Board at least once a year, **profile details in Attachment 1, page 207**

7.6.2 Head of Investor Relations and contact

The Chief Executive Officer, is assigned by position to be Investor Relations. Mr. Wirat Sukchai has been holding the position since November 13, 2014, and can be contacted at Investor Relations, HARN, Tel. 0-2318-9744 ext. 5001 Email: wirat.s@harn.co.th or website: www.harn.co.th **and profile details in Attachment 1, page 205**

7.6.3 Audit Fee

HARN and its subsidiaries paid a total of Baht 1,581,880 in audit fees to the Dharmniti Auditing Co., Ltd., and auditing of the subsidiary in Vietnam, for 2021. It's the audit fees of HARN paid of Baht 1,448,000 and of the subsidiaries paid of Baht 133,880. In addition, HARN has non-audit fee namely; a service fee observing the destruction of product total 10,000 baht, however excluding other expense such as overtime, allowance, traveling, and telephone etc.

8. Corporate Governance Milestones

8.1 Performance of the Board of Directors in 2021

8.1.1 Nomination, Development and Performance Assessment of the Board

1) Nomination Criteria of the Board and Independent Directors

In selecting and considering an appropriate Independent Directors and Director Candidate, the Directors must be fully qualified with the Public Company Limited Act, and the securities and exchange law, as well as other relevant notifications, stipulations and/or regulations, in which HARN will not bring diversity factors such as gender, race, ethnicity, country of origin, or nationality as Directors' qualification restrictions. An independent director shall have the required qualifications and no prohibited characteristics, just as in the case of a director pursuant to the Public Limited Companies Act, Also values independence of the Directors, their conflict of interest, and their expertise. HARN developed Board Skill Matrix in accordance with Nomination and Remuneration Policy the Board to create a wide range of expertise in line with strategic directions. Also searched and selected qualified Directors through the IOD Chartered Directors or other agencies provide that HARN deems appropriate.

In case of any director and/or independent director vacating office before the end of the office term, the Board may appoint a new director with the required qualifications as a replacement. The replacing shall hold office only for the remaining term of office of the independent director whom he has replaced.

Qualifications of independent directors

The Board, approved the definition of the independence of directors, with in line the criteria set by the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET) as follows;

1. Holding not more than 1% of the total shares with voting rights of HARN⁽¹⁾, which shall be inclusive of the shares held by any related person thereof. ("Person related" shall mean the person under Section 258 of the Securities and Exchange Act);

2. Neither being nor having been an executive director, an employee, a staff member, an adviser who receives a regular salary, or a controlling person of HARN⁽¹⁾ unless the foregoing status has ended for no less than 2 years;

3. Not being a person related by blood or registration under law of other directors, major shareholder, controlling person or person to be nominated as an executive or a controlling person of HARN⁽¹⁾ or its subsidiary company;

4. Neither holding nor having held a business relationship with HARN⁽¹⁾, in a manner which may interfere with his/her independent judgment; and neither being nor having been a substantial shareholder or a controlling person of any person having a business relationship with HARN⁽¹⁾, unless the foregoing relationship has ended for no less than 2 years;

5. Neither being nor having been an auditor of HARN⁽¹⁾, and not being a substantial shareholder, controlling person or partner of an audit firm which employs auditors of HARN⁽¹⁾, unless the foregoing relationship has ended for no less than 2 years;

6. Neither being nor having been any professional service provider including legal adviser or financial adviser who receives an annual service fee exceeding Baht 2 million from HARN⁽¹⁾, and not being a substantial shareholder, controlling person or partner of the professional service provider, unless the foregoing relationship has ended for no less than 2 years;

7. Not being a director who has been appointed as a representative of a director of HARN, major shareholder, or shareholder related to the major shareholder;

8. Not undertaking any business the nature of which is the same as that of HARN or subsidiary company and which, in any material respect, is competitive with the business of HARN or subsidiary company or not being a substantial partner in the partnership, a director who is involved in management, an employee, a staff member, an adviser who receives a regular salary, or a shareholder holding more than 1% of the total shares with voting rights of a company undertaking any business the nature of which is the same as that of HARN or subsidiary;

9. Not having any characteristics that prohibit the expression of independent opinion towards HARN's business undertakings.

Note : ⁽¹⁾ Including, principal company, subsidiary company, associated company, major shareholder, or controlling person of HARN.



However, term of office of the Independent Committee is not more than 9 consecutive years counting from the date of appointment or from the date the company listed on the stock exchange, without exception. 2 independent directors serve 8 consecutive years namely; (1) Dr. Thakol Nunthirapakorn (2) Miss Voranuch Supaibulpipat and 1 independent directors serve 1 consecutive years namely; Mr. Parkphum Wongpaitoon and Mr. Prasert Deejongkit.

In this regard, the independent directors shall examine and certify their qualifications and independence at least once a year, also required to disclose independence on office-holding by independent directors of HARN, in the Annual Disclosure Statement / Annual Report (Form 56-1 One Report).

In 2021, independent directors has qualifications with in line the criteria set by the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET) not contradict relevant laws and regulations.

2) Nomination Criteria of the Board

1. Allowing minority shareholders to propose qualified names according to the law as per qualifications set by HARN in order to be a candidate of the Board, by announcing invitations on HARN's website at least 90 days in advance of the shareholders' meeting. HARN set ratio of minimum shares to be qualified prior to the announcement and must have a minimum of 5% voting shares of HARN. However, nominations must include history of education and sufficient experience to helpfull decision.

2. The nomination and Remuneration Committee review rules and method of recruiting to the board prior to the end of term of office. If submit the former Board as a candidate, performance of that individual must be reviewed once again. However, the Nomination and Remuneration Committee, may appointed consultant to assist in the selection of directors.

3. The Nomination and Remuneration Committee selects and proposes to the Board for consideration of the names of qualified candidates prior to the Shareholders' approval in the AGM. After the Board's endorsement, the list of qualified candidates is proposed to the AGM, individually. In this process each director and/or independent directors must recieve more than half of the total number of votes of Shareholders attending the AGM and having the right to vote.

4. The shareholders' meeting shall elect the directors in accordance with the following criteria and procedure:

- 4.1 The shareholders' voting right of one share equals one votem, provided separate ballot for each of the Director, the majority votes of the shareholders who attend the meeting and have the right to vote.
- 4.2 The shareholders' right shall cast all the votes he has to elect one or several directors. In case of electing several directors, each shareholder may not divide his votes and allocate them to all such candidates in portions.

Furthermore, the Nomination and Remuneration Committee, provided an opportunity for shareholders to propose nominate Director Candidates, in which publicized on SETLink of SET's electronic system and HARN's website, from October 1 to December 31, 2020. When the deadline, none of the shareholders has proposed nominate Director Candidate to be elected as HARN's Director. The Company Secetary has been reported in the Board meeitng.

In 2021, HARN nominated and appointed seven new directors replacing directors who completed their terms at the Annuual General Meeting (AGM): Mr. Prasert Deejongkit Independent Directors and Audit Committees, Also, reappointed former 2 directors who completed their terms at the 2021 AGM to another term, namely Mrs. Valeeratn Chuerboonchai and Mr. Wirat Sukchai. HARN no advisor has been appointed for the nomination and Remuneration Committee. he said directors qualified, knowledge, abilities and experience in the business. It will helpful in setting direction and in line with HARN's business strategy.

Each Board, reviwed expertise in according Board Skill Matrix. In summary, the Board has the diversity of gender, age, education background, experience, expertise in specialized beneficial matters to HARN. At December 31, 2021 the Board of 9 director composed; 7 Non-Executive Director, 2 Executive Director are 1 Chief Executive Officer, 1 Managing Director and has numbers of committees that are not Independent committees in a fair ratio of investment of Controlling Shareholders. **Details the diversity of Board appear in Section 2 "7.2.1 Composition of the Board", page 97**

3) Nomination Criteria the Chairman of the Board

The Board shall elect one of the Board members as Chairman of the Board to supervise and control meetings of the Board and meetings of the shareholders of HARN to ensure efficiency and compliance with relevant rules and regulations and to meet the meeting objectives.

To segregate policy-making duties from those of day-to-day management and to enable directors to look after and assess performance effectively, HARN has required that the Chairman of the Board and the Chief Executive Officer are always two persons. This is because the Chairman needs to define policy and oversee management's performance, guide, and assist it, but not to take part in or interfere with day-to-day management, which is the duty of the Chief Executive Officer under the authority delegated by the Board.

Board Meeting No. 2/2015 of May 14, 2015, appointed Professor Dr. Thakol Nunthirapakorn, an independent director, as Chairman of the Board with effect from June 1, 2015. It would allow the work of the Chairman to be independent and boost confidence in the transparency of operations and fair treatment of all stakeholders, which in accordance Corporate Governance guidelines.

The current Chairman is an independent director. He exercises high-level leadership and ensures that directors do not fall under the influence of management by encouraging them to exercise their voting rights and strictly comply with the CG code. Does not repeat a position of Chief Executive Officer which is Mr. Wirat Sukchai. He has no business relationship or bloodline with the CEO. Therefore, the position is suitable and balanced.

4) Nomination of the CEO and Succession Planning

Nomination Top Executives

1. Top executives which refers to Chief Executive Officer.
2. The Nomination and Remuneration Committee nomination personnel that are knowledgeable, skills, characteristics and experienced as the executives to command and perform duties to drive the organization towards goals. Also, must fully qualified and without legal prohibitions, which following rules of resource management, to results to the Board to appoint.

3. The Nomination and Remuneration Committee report to the Board regularly on development and successor plan in order to prepare talents as successors in case the Chief Executive Officer retire, resign, or unable to retain in duties.

4. The Board have no policy to submit any executives to be a Board of other companies. In case that executives will take another position as a Board of another business, it must be approved by the Executives Committees unless the business is non-profit organization. However, the position must not conflict with laws and rules related to the operation of HARN and must not use the position to refer nor to ask for other benefits of other entities.

Succession Plan

The Nomination and Remuneration Committee reviewer and preparer the Succession Plan Policy of Top Executives propose to Board, namely Chief Executive Officer, Managing Director, Chief Financial Officer, Chief Operating Officer, Director of Various Departments. Nominate persons with appropriate knowledge, capability, and experience to fill the positions of HARN executives. They must be legitimately qualified with no prohibited characteristics and to the Succession Plan Policy.

However, in 2021, there is no Top Executives nomination including succession. **More details appear in Section 2 "7.4 Information of the Top Management", page 104-105**

5) Director development

The Boards values regular participation of Director and Top Executives in training and seminars concerning their competencies for their jobs. HARN directors underwent training with Thai Institute of Directors Association (IOD) and other leading entities and institutes as well as seminars on related topics. The Nomination and Remuneration Committee consider training curricula related to the Board and Top Executives, for application to HARN's businesses for sustainable growth. However, the Board and Top Executives trainings to foster their work knowledge and HARN's activities include the items below.

At present, 100 percent the Board who have attended training courses related to performance directors of IOD.

Training course for the Thai Institute of Directors Association (IOD) of the Board

Name		Courses										
		DAP	DCP	SFE	FSD	RCP	ACEP	ACP	ELP	ACPG	HRP	BNCP
Dr. Thakol	Nunthirapakorn	8/2004	228/2016			43/2018		8/2005	3/2016	36/2017		
Miss Voranuch	Supaibulpipat	SET/2012	281/2019									8/2019
Mr. Prasert	Deejongkit	184/2021										
Mr. Parkphum	Wongpaitoon	42/2005				36/2015	14/2015					
Mrs. Valeeratn	Chuerboonchai	SET/2012	205/2015		28/2015		14/2015					
Mr. Wirat	Sukchai	SET/2012	204/2015	24/2015		36/2015	14/2015				12/2017	
Mr. Thammanoon	Tripetchr	116/2015	211/2015	24/2015	28/2015							
Mr. Jain	Charnnarong	173/2013	23/2015							8/2014		
Mrs. Sirima	Iamsakulrat	SET/2012	211/2015	24/2015								5/2018

Training courses at other leading institutions of the Board and Top Executives in 2021

Name of the Board		Courses
Dr. Thakol	Nunthirapakorn	<ul style="list-style-type: none"> Director's Briefing: Govern in Tomorrow's World, class 1/2021 Important step the transition to TFRS 9 and IFRS 16 for financial business group for not-financial institution. TCFD (Task Force on Climate-related Financial Disclosures) Disclosure, in line with the GRI, CDP and SDGs GRI, CDP and SDGs TCFD & SDGs WORDSHOP FOR BEGNNERS. Preparation Sustainability Disclosure according to One Report In-depth focusing the analysis and management of ESG risks and greenhouse gas calculations, to report sustainability performance. TCFD & SDGs Workshop: ESG Risk Analysis and GHG Accounting
Miss Voranuch	Supaibulpipat	<ul style="list-style-type: none"> None
Mr. Prasert	Deejongkit	<ul style="list-style-type: none"> Director Accreditation Program, class 184/2021
Mr. Parkphum	Wongpaitoon	<ul style="list-style-type: none"> None
Mrs. Valeeratn	Chuerboonchai	<ul style="list-style-type: none"> None
Mr. Wirat	Sukchai	<ul style="list-style-type: none"> None
Mr. Thammanoon	Tripetchr	<ul style="list-style-type: none"> None
Mr. Jain	Charnnarong	<ul style="list-style-type: none"> None
Mrs. Sirima	Iamsakulrat	<ul style="list-style-type: none"> None

Name of Top Executives		Courses
Mr. Wisit	Wachiralappaitoon	<ul style="list-style-type: none"> Accounting tools with RPA, AI and OCR technology. Calculation of employee benefits, preparation problems and solutions to be correct according to accounting standards Summary TFRS for PAEs Need to Know and Changes in 2021 THE NEW CFO 2021 #How to Make Financial Instruments Work M&A trends, directions, important issues to consider, and strategies for M&A success. Money Laundering Bill amended edition professional practitioner "I can't know" TFRS financial reporting standard effective 2021.
Mrs. Varinkan	Teraumranon	<ul style="list-style-type: none"> Personal Data Protection Act (PDPA) ISO 9001:2015 Understanding and Implementation ISO 9001:2015 Internal Audit
Mr. Pracha	Phromphornchai	<ul style="list-style-type: none"> Knowledge of halocarbon fire suppression system.
Mr. Rattanaphan	Mukhariwattananon	<ul style="list-style-type: none"> Basic of Air-conditioning System HVAC Training by Victaulic
Mr. Suchat	Suwatnodom	<ul style="list-style-type: none"> None
Mr. Kittiphong	Kittimethawenun	<ul style="list-style-type: none"> Knowledge of BITZER screw compressors. Knowledge of electricity, electrical installation design and intelligent system technology (Internet of Thing)
Mr. Vachiravit	Akaraseranee	<ul style="list-style-type: none"> Knowledge of BITZER screw compressors. Knowledge of electricity, electrical installation design and intelligent system technology (Internet of Thing)
Mr. Sukit	Litikorn	<ul style="list-style-type: none"> Knowledge of electricity, electrical installation design and intelligent system technology (Internet of Thing)
Mr. Withoon	Thamee	<ul style="list-style-type: none"> Personal Data Protection Act (PDPA) Open to the medical device industry.
Mr. Pongsawat	Penglengpol	<ul style="list-style-type: none"> None

6) Board and Board-Committees Self-assessment

In compliance with the CG code, HARN required the Board and Board-Committees to conduct self-assessment to scope its regular review of its performance. With the resolution of Board Meeting No. 5/2021 of October 1, 2021, the Board approved all 4 self-assessment forms which uses same information as year 2020, none modification. The 4 assessment forms stipulated the percentages corresponding to the levels of performance achieved in each topic: more 90% = Excellent, 80-89% = Good, 70-79% = Relatively Good, 60-69% = Fair, below 60% = Need improvement, Self- Assessment were as follows:

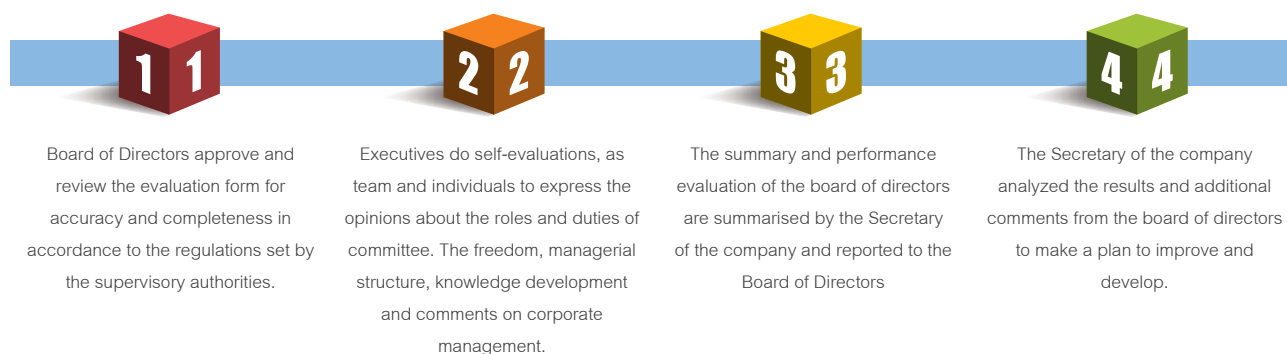
1. Self- Assessment of the whole Board, consist 4 topics: Structure and qualifications, Meetings, Roles, duties and responsibilities, Others such as good relationship to management and encourage training.

2. Self- Assessment of the individual Board, consist 3 topics: Structure and qualifications, Meetings, Roles, duties and responsibilities

3. Self- Assessment of the whole Board-Committees and individual 3 consist: Structure and qualifications, Meetings, Roles, duties and responsibilities

Process, criteria and results of the evaluation of the whole Board and individual style, in 2021 as follows:

1. Process of Self- Assessment of the whole Board and Individual



2. Results of Self- Assessment of the whole Board and Individual

Criteria of Self- Assessment of Board and Board-Committees	2021 - Evaluation results (Whole)				
	Board of Director	Audit Committee	Nomination & Remuneration Committee	Executive Committee	Risk management Committee
Whole					
1. Structure and qualifications					
• Diversity of directors in terms of number and experience	87.04%	87.50%	76.39%	70.83%	80.56%
• Proportion of directors					
• Ualifications of each Board					
2. Roles, duties and responsibilities					
• Spending adequate time to consider important matters etc. direction, strategy, action plan, transactions with conflict of interest, and internal control and risk management	89.29%	88.10%	83.33%	87.14%	86.61%
3. Meetings					
• Schedule meetings all year in advance	80.56%	95.24%	68.06%	76.00%	83.33%
• The sufficiency of information for directors to make a decision					
• Freedom of decision making and the expression of opinions of directors					
• Time frame of meeting					
4. Others					
• Relationship with the board and management team	84.72%	-	-	-	-
• Self development of the board/Executive, Training					
Total Results	85.40%	90.28%	75.93%	77.99%	83.50%

Measurement : more 90% = Excellent, 80-89% = Good, 70-79% = Relatively Good, 60-69% = Fair, below 60% = Need improvement

Criteria of Self- Assessment of Board and Board-Committees	2021 - Evaluation results (Individual)				
	Board of Director	Audit Committee	Nomination & Remuneration Committee	Executive Committee	Risk management Committee
แบบรายการ					
1. Structure and qualifications <ul style="list-style-type: none"> Qualificaitons, knowledge, experience suitable for business of company Assigned duties that are appropriate for role (Independent / Board-Committee) 	80.56%	91.67%	75.00%	82.50%	89.58%
2. Roles, duties and responsibilities <ul style="list-style-type: none"> Perform duties efficiently according the charter Time and dedication to perform duties Control and follow up the operations of management appropriately Does not interfere with the management function Develop and learn all the time 	85.19%	88.89%	86.11%	81.67%	87.50%
3. Meetings <ul style="list-style-type: none"> Attending the meeting Studying the information to meeting in advance Showing appropriate comments, to meeting Abstain from attending the meeting or voting in case of having conflict of interests 	80.00%	90.00%	65.00%	78.00%	85.83%
Total Results	81.91%	90.19%	75.37%	80.72%	87.64%

Measurement : more 90% = Excellent, 80-89% = Good, 70-79% = Relatively Good, 60-69% = Fair, below 60% = Need improvement

However, the board has no outsource consultant to assist in directing and propose the assessment of the Boards' performance. At present, 100 percent the Board who have attended training courses related to performance directors of IOD.

7) Assessment the Chief Executive Officer

The Board arranges an annual evaluation of the Chief Executive Officer's performance, are criteria according to the assessment guidelines the Stock Exchange of Thailand, requiring Non-Executive Committees to evaluate their performance. The assessment results to the Board. The assessment results in 2021 have an average score 76.37%, which is quite good.

8) Orientation of New Directors

For new directors, HARN the Nomination and Remuneration Committee arranges an orientation program dealing to ensure to know the its business policies, as well as applicable laws and regulations. Moreover, each director receives a Director's Handbook, which the company secretary has prepared, includes the following topics:

1. Structure of the board, executive and company secretary
2. Group structure, major shareholder structure
3. Company information and nature of business
4. Charter of the board of directors and board-committees
5. Schedule of management approval authority

6. Remuneration of the board of directors and board-committees
7. Meeting of the Board of Directors
8. Policy and principles of corporate governance and business ethics
9. Role of directors under general law
10. Certificate memorandum and the company's articles of association
11. Consolidated and separate financial statements
12. Annual report

Including, new director to visit the business characteristics along with met to the Chairman, the Board, Chief Operating Officer and Top Executives

In 2021, HARN has appointed 1 new director, namely; Mr. Prasert Deejongkit as an independent director and Audit Committee, by the Nomination and Remuneration Committee met with new directors to presented information for their overview of the about HARN. At the same time, the above-mentioned documents and handbook for new directors were handed over. No activities visit business due to the situation of the epidemic Covid-19

The Board are fully understood laws, policies, standards, risks, environment relate to operating the business and are aware of current information from the administrative regularly through appropriate channels such as Email and Board Meetings.

8.1.2 Meeting attendance and individual directors' compensation

Board meetings

1. The Boards and Board-committees determine yearly meeting schedules in advance by November of every year so that the Committees can arrange and be able to attend the meetings. At least 6 meetings must be taken place and may arrange an additional meeting 1 month prior to the Annual General Meeting. Special occasions of meeting may be taken place as seen necessary. However, to pursuit business as usual, in each month, The Executive Committees decisions in accordance whom delegated by the Board of Directors and report the approved topics to the Board.

2. The Company Secretary sends to each director meeting notices, agenda with complete details and rationale, and supplementary documents with enough essential details for decision-making at least 5 business days in advance ahead of each meeting to give them time to study these. Directors consider the agenda through an application to "Google Meet" the process of agenda delivery and the paperwork involved, thus speeding up directors' work while efficiently providing them with adequate details for decision-making. Since 2018, for each meeting, the Board has required regular follow-up agenda on the updates of implementation of Board observations and comments to ensure implementation of HARN's strategies.

3. The Board sets a policy that requires no less than one-two (1/2) of the current Board members in attendance to make a quorum. In voting, the minimum quorum of directors is no less than two-thirds (2/3) of all attending directors. However, if the quorum does not comply with this guideline, the discretion of the Chairman will be sought.

4. Chairman of the Board serves as the Chairman of the meeting to proceed with the meeting and allocate sufficient time for each agenda item, encouraging all Directors to openly discuss and express their opinions. High-level executives are invited to attend Board meetings to provide additional relevant information and allow the Board to get to know them, which will be useful for the review of succession plans. The Board's is that for a given agenda item, if any director has potential conflicting interests, who will not attend the meeting and abstain voting on such agenda item. Where the votes cast in descending order are tied, the chairman of the meeting shall have a casting vote.

In case the directors disagree with a resolution, they may request the Company Secretary to record the points of their disagreement in the meeting minutes or submit a letter to the Board Chairman to express their disagreement.

5. For each agenda item, the Company Secretary has the duty to prepare the minutes, by the Board-certified minutes, signature of the Chairman of written are filed at head-office 4th floor Rama 9 road, for perusal by the directors and related parties.

Due to the aggravating, widespread COVID-19 in Thailand in 2021, the Chairman of the Board allowed electronic meetings. In 2021, HARN managed a total of 6 Board Meetings with 1 Board Strategic Meeting, Including, managed one Non-Executive Directors Meeting without the executives on October 1, 2021 to encourage all Directors to independently discuss, recommend, and openly express their opinions during these meetings without the Company's executives. The topic discusses related to business direction, management structure and developing a succession plan of top executives.

In summary 2021, the Whole committee attended the meeting an average of 100% the details on the Board's meeting attendance can be found on the chart of Meeting Attendance of Board of Directors, Board-Committees, and Shareholders' Meeting as follow;

Name	Position	Board of Director (6 times)	Audit Committee (4 times)	Executive Committee (12 times)	Nomination and Remuneration Committee (2 times)	Risk Management Committee (4 times)	Annual General Meeting of Shareholders (AGM) (1 times)
		E-Meeting					Physical Meeting
1. Dr. Thakol Nunthirapakorn	Independent Director Chairman of the Board Chairman of the Audit Committee	6/6 (100%)	4/4 (100%)	-	-	-	1/1 (100%)
2. Miss Voranuch Supabulpipat	Independent Director Member of the Audit Committee Chairperson of the Nomination and Remuneration Committee	6/6 (100%)	4/4 (100%)	-	2/2 (100%)	-	1/1 (100%)
3. Mr. Prasert Deejongkit ¹⁾	Independent Director Member of the Audit Committee	4/4 (100%)	3/3 (100%)	-	-	-	1/1 (100%)
4. Mr. Parkphum Wongpaitoon ²⁾	Independent Director Member of the Nomination and Remuneration Committee	6/6 (100%)	-	-	1/1 (100%)	-	1/1 (100%)
5. Mrs. Valeeratn Chuerboonchai	Director	6/6 (100%)	-	-	-	-	1/1 (100%)
6. Mrs. Sirima Iamsakulrat	Director Member of the Nomination and Remuneration Committee	6/6 (100%)	-	-	2/2 (100%)	-	1/1 (100%)
7. Dr. Jain Charnnarong	Director Member of the Executive Committee	6/6 (100%)	-	12/12 (100%)	-	-	1/1 (100%)
8. Mr. Wirat Sukchai	Director / Chairman of the Executive Committee / (Acting) Chairman of the Risk Management Committee / Chief Executive Officer and Managing Director	6/6 (100%)	-	12/12 (100%)	-	4/4 (100%)	1/1 (100%)
9. Mr. Thammanoon Tripetchr	Director Member of the Risk Management Committee Member of the Executive Committee, Managing Director	6/6 (100%)	-	12/12 (100%)	-	4/4 (100%)	1/1 (100%)
10. Mr. Wisit Wachiralappaitoon	Member of the Executive Committee Member of the Risk Management Committee	-	-	12/12 (100%)	-	4/4 (100%)	1/1 (100%)
11. Mrs. Varinkan Teraumranon	Member of the Executive Committee Member of the Risk Management Committee	-	-	12/12 (100%)	-	4/4 (100%)	1/1 (100%)
12. Mr. Pracha Phromphornchai	Member of the Risk Management Committee	-	-	-	-	4/4 (100%)	1/1 (100%)
13. Mr. Rattanaphan Mukhariwattananon	Member of the Risk Management Committee	-	-	-	-	4/4 (100%)	1/1 (100%)
14. Mr. Suchat Suwatnodom	Member of the Risk Management Committee	-	-	-	-	4/4 (100%)	1/1 (100%)
15. Mr. Kittiphong Kittimethawenun	Member of the Risk Management Committee	-	-	-	-	4/4 (100%)	1/1 (100%)
16. Mr. Vachiravit Akaraseranee	Member of the Risk Management Committee	-	-	-	-	4/4 (100%)	1/1 (100%)
17. Mr. Sukit Litikorn	Member of the Risk Management Committee	-	-	-	-	4/4 (100%)	1/1 (100%)
18. Mr. Withoon Thamee	Member of the Risk Management Committee	-	-	-	-	3/4 (75%)	N/A
19. Mr. Pongsawat Penglengpol	Member of the Risk Management Committee	-	-	-	-	4/4 (100%)	1/1 (100%)

Directors who Complete the Term in 2020 AGM

1. Dr. Sothitorn Mallikamas	Independent Director / Member of the Audit Committee Member of the Nomination and Remuneration Committee	2/2 (100%)	1/1 (100%)	-	1/1 (100%)	-	1/1 (100%)
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Note : N/A means not attend and Directors who Appoint during the Year 2021

¹⁾ Mr. Prasert Deejongkit was appointed as an independent director and member of the audit committee with effect from April 23, 2021, replacing Dr. Sothitorn Mallikamas, who retired by rotation at the 2021 Annual General Meeting (AGM).

²⁾ Mr. Parkphum Wongpaitoon was appointed as an independent director with effect from February 25, 2021 and was appointed as member of the nomination and remuneration committee with effect from April 23, 2021, replacing Dr. Sothitorn Mallikamas, who retired by rotation at the 2021 Annual General Meeting (AGM).

Remuneration of individual Board

HARN has established remuneration policies for the Board and Board-Committees. The remuneration is considered through the comparison with the Board's performance, roles, and responsibilities; HARN's performance; the overall business circumstances; as well as the organizations with equal size in the same industry. The Board's remuneration criteria must be attractive. The Nomination and Remuneration Committee is in charge of setting the annual compensation, and make recommendation to the Board for consideration and approval before presenting the AGM for approval.

In 2021, the comparing the remuneration with the average remuneration rate of other listed and the organizations in the same industry, resulting in the proposal of adjust remuneration and meeting allowances of the Board and Board-Committees, which has been approved by the 2021 Annual General Meeting of Shareholders. **(The remuneration of directors is disclosed individually on page 118)**

Position	Remuneration
1. Monthly remuneration: Director / Audit Committee / Risk Management Committee / Nomination and Remuneration Committee <ul style="list-style-type: none"> Chairman of the Board Board-Committees Directors / Independent Director Directors (2 working day/week) 	30,000 Baht/Month 25,000 Baht/Month 20,000 Baht/Month 80,000 Baht/Month
2. Meeting allowances: Director / Audit Committee <ul style="list-style-type: none"> Chairman Director 	20,000 Baht/meeting 15,000 Baht/meeting
3. Meeting allowances: Risk Management Committee / Nomination and Remuneration Committee <ul style="list-style-type: none"> Chairman Director 	15,000 Baht/meeting 10,000 Baht/meeting
4. Bonuses	None
5. Other Remuneration	None

Note: Principles of compensation for the Board of Directors and Board Committees are as follows:

- The Nomination and Remuneration Committee is the person who determines and establishes the principles or policies "Remuneration for Directors" and propose to the Board of Directors for approval to propose to the Annual General Meeting of Shareholders which must comply with the Company's Articles of Association, Chapter 4, regarding the Board of Directors, including various factors related as follows:
 - Duties and responsibilities of each director
 - To be appropriate when compared to other public companies that has the similar operating results and business operations.
 - To be fair and transparent to create incentives to maintain qualified directors as needed
 - To be appropriate for the ability to get paid the compensation from the company.
- The Nomination and Remuneration Committee is summaries the annual remuneration and compensation which must not exceed the amount approved by the shareholders' meeting from the previous year and propose to the Board of Directors for approval to report to the shareholders' meeting to acknowledge the amount of money actually paid by considering the following factors:
 - Company performance previous year
 - Determine the appropriate time to pay
 - Details and conditions of payment such as annual remuneration for all directors who remain in office in the event that any director has recently held the position and has not yet completed a service year, annual remuneration will be paid in proportion referring to time appointment since joined.
- Board and Committee members entitled to receipt of Directors' remuneration must not be employees of the Company.
- Board member who also serve in another committee shall receive only one remuneration that pay the highest rate.

Summary of the remuneration 9 directors in 2021 for period 12 months ending on December 31, 2021 equal Baht 3,473,166, comprises monthly remuneration for directors Baht 2,628,166 and meeting allowances Baht 845,000, the resolution of which was passed by the 2021 AGM on April 23, 2021. In 2021 and 2020, HARN payment of monthly remuneration for the Board's and Board-Committees and meeting allowance as follows as below

Name	Position	2021					2020				
		Monthly Remuneration	Meeting allowances				Monthly Remuneration	Meeting allowances			
		Board of Director	Audit Committee	Nomination and Remuneration Committee	Executive Committee	Risk Management Committee	Board of Director	Audit Committee	Nomination and Remuneration Committee	Executive Committee	Risk Management Committee
1. Dr. Thakol Nunthirapakorn	Independent Director / Chairman of the Board	360,000	110,000	75,000	-	-	360,000	120,000	60,000	-	-
	Chairman of the Audit Committee										
2. Miss Voranuch Supaibulpipat	Independent Director / Member of the Audit Committee	300,000	80,000	55,000	30,000	-	300,000	80,000	40,000	30,000	-
	Chairperson of the Nomination and Remuneration Committee										
3. Mr. Prasert Deejongkit ¹⁾	Independent Director / Member of the Audit Committee	165,333	60,000	45,000	-	-	-	-	-	-	-
4. Mr. Parkphum Wongpaitoon ²⁾	Independent Director / Member of the Nomination and Remuneration Committee	240,000	80,000	-	10,000	-	240,000	80,000	-	-	-
5. Mrs. Valeerath Chuerboonchai	Director	240,000	80,000	-	-	-	240,000	80,000	-	-	-
6. Mrs. Sirima Iamsakulrat	Director / Member of the Nomination and Remuneration Committee	240,000	80,000	-	20,000	-	240,000	80,000	-	20,000	-
7. Dr. Jain Charnnarong	Director / Member of the Executive Committee	1,007,500	80,000	-	-	-	1,155,000	80,000	-	-	-
8. Mr. Wirat Sukchai	Director / Chairman of the Executive Committee / Chairman of the Risk Management Committee / Chief Executive Officer and Managing Director	-	-	-	-	-	-	-	-	-	-
9. Mr. Thammanoon Tripetchr	Director / Member of the Risk Management Committee	-	-	-	-	-	-	-	-	-	-
	Member of the Executive Committee, Managing Director										
Directors who Complete the Term in 2020 AGM											
1. Dr. Sothitorn Mallikamas	Independent Director / Member of the Audit Committee	75,333	20,000	10,000	10,000	-	240,000	80,000	40,000	20,000	-
	Member of the Nomination and Remuneration Committee										
Total		2,628,166	590,000	185,000	70,000	-	2,775,000	600,000	140,000	70,000	-

Note : ¹⁾ Mr. Prasert Deejongkit was appointed as an independent director and member of the audit committee with effect from April 23, 2021, replacing Dr. Sothitorn Mallikamas, who retired by rotation at the 2021 Annual General Meeting (AGM).

²⁾ Mr. Parkphum Wongpaitoon was appointed as an independent director with effect from February 25, 2021 and was appointed as member of the nomination and remuneration committee with effect from April 23, 2021, replacing Dr. Sothitorn Mallikamas, who retired by rotation at the 2021 Annual General Meeting (AGM).

Other Remuneration

- None -

8.1.3 Governance of Subsidiaries

The Board of Directors, which supervises the subsidiaries as part of the operation, have a resolution to appoint a representative to take the position of director in Aiyarahan Company Limited ("Subsidiary"), assign policies and guidelines to supervise and operate in accordance with the risk management plan, good governance and anti-corruption of HARN, with annual goals and indicators approved by the Board of Directors. A monthly meeting between representatives and executives of the subsidiaries is held to supervise and follow up to ensure that the operation results are in accordance with

the goals and direction as indicated by HARN. The results will be reported to the Board of Directors every quarter.

HARN is working to promote compliance with policies and guidelines for supervising subsidiaries. In 2021, a meeting was held between representatives and management of subsidiaries in order to consider financial status, performance and other important matters which have been already reported to the Board of Directors for acknowledgment. In summary, the Subsidiary has an appropriate and careful internal control process for its business operations.

8.1.4 Corporate Governance Policy and Guideline Compliance Control

1) Prevention of Conflict of Interest

In 2021, the Board and the first 4 top-ranking executives all filed their reports 100 percent; no material cases were found. The disclosed items of conflicts of interest with HARN confirm acknowledgment that breach of ethics and HARN's code of conduct is regarded as a disciplinary offense, subject to disciplinary actions according to disciplinary procedures and severity.

2) Use of Inside Information

HARN has prepared a schedule to notify prohibition period trading of HARN securities in advance, period as (1) between January 26 to March 1, 2021 (fiscal year 2020), (2) between April 14 to May 17, 2021 (financial statement Q1/2021), (3) between July 12 to August 13, 2021 (financial statement Q2/2021), (4) between October 13 to November 15, 2021 (financial statement Q3/2021) Rules all director and the first 4

top-ranking executives, including their spouses and children under legal age, prohibition trading HARN stock within 30 days prior to the disclosure of quarterly and yearly financial statements to the public and until the period of 24 hours since disclosure to the public. Other than that, trading it normally. They must report such trading to the Company Secretary at least 1 day in advance. Must report any changes in their HARN share ownership to report electronic through the SEC under Article 59 within 3 days of the date of trading of such shares, in which the company secretary reports trading to the board of directors acknowledged every quarter. In 2021, the Board and the first 4 top-ranking executives has strictly followed, there were 25 reported transactions outside silent periods involving those whose jobs involved internal information, no major incidents occurred that impacted HARN.

Shareholding information the Board, including related parties and persons with relationship as of December 31, 2021

Names of directors/executives		No. of shares held	% of total shares	note
1. Mr. Thakol	Nunthirapakorn (1) ¹	-	-	(no shareholding)
2. Miss Voranuch	Supaibulpipat (1) ¹	-	-	(no shareholding)
3. Mr. Prasert	Deejongkit (1) ^{1 2}	-	-	(no shareholding)
4. Mr. Parkphum	Wongpaitoon Group (2)			
4.1 Mr. Parkphum	Wongpaitoon ¹	4,230,325	0.724	-
4.2 Mrs. Thiamjan	Wongpaitoon (spouse)	21,500	0.004	-
5. Mrs. Valeeratn	Chuerboonchai (1)	5,677,686	0.971	-
6. Mrs. Sirima	Iamsakulrat (1)			
7. Mr. Jain	Charnnarong Group (2)			
7.1 Mr. Jain	Charnnarong	84,234,151	14.411	-
7.2 Mrs. Prayoonsri	Charnnarong (mother)	72,319,130	12.373	-
8. Mr. Wirat	Sukchai Group (2)	733,900	0.126	-
8.1 Mr. Wirat	Sukchai	87,775,858	15.017	-
8.2 Mrs. Nopparat	Sukchai (spouse)	13,000,000	2.224	-
9. Mr. Thammanoon	Tripetchr (1)	22,373,795	3.828	-
Total		290,366,345	49.68	-

Note : ¹ independent director

² Directors who Appoint replacing Dr. Sothitorn Mallikamas, who retired by rotation at the 2021 Annual General Meeting (AGM).

• No HARN share was held by directors' mother, spouses and children under legal age except those of No. 4, 7 and 8.

Shareholding information Executives, including related parties and persons with relationship as of December 31, 2021

Names of directors/executives		No. of shares held	% of total shares	Note
1. Mr. Wisit	Wachiralappaitoon (1)	542,345	0.093	-
2. Mrs. Varinkan	Teraumranon (1)	1,222,162	0.209	-
3. Mr. Pracha	Phromphornchai Group (2)			
3.1 Mr. Pracha	Phromphornchai	11,540,145	1.974	-
3.2 Miss Sukanya	Limkhamsuk (spouse)	200,000	0.034	-
4. Mr. Rattanaphan	Mukhariwattananon Group (2)			
4.1 Mr. Rattanaphan	Mukhariwattananon	3,087,621	0.528	-
4.2 Mrs. Rabeab	Mukhariwattananon (mother)	10,000	0.002	-
5. Mr. Suchat	Suwatnodom (1)	635,095	0.109	-
6. Mr. Kittiphong	Kittimethawenun (1)	70,564	0.012	-
7. Mr. Vachiravit	Akaraseranee (1)	62,552	0.011	-
8. Mr. Sukit	Litikorn (1)	526,853	0.090	-
9. Mr. Withoon	Thamee (1)	612,773	0.105	-
10. Mr. Pongsawat	Penglengpol (1)	8,689	0.001	-

Note : • No HARN share was held by executives' mother, spouses and children under legal age except those of No. 3 and 4.

Report summarizing change in shareholding HARN proportion of the Board compair as of 2020 and 2021:

Names of directors/executives		number of shares At Date		Increase (Decrease)	Note
		December 31, 2021	December 31, 2020		
1. Mr. Thakol	Nunthirapakorn ^{1/}	-	-	-	(no shareholding)
2. Miss Voranuch	Supaibulpipat ^{1/}	-	-	-	(no shareholding)
3. Mr. Prasert	Deejongkit ^{1/2}	-	-	-	(no shareholding)
4. Mr. Parkphum	Mr. Parkphum ^{1/}	4,230,325	4,230,325	-	(no stock trading during the year)
5. Mrs. Valeeratn	Chuerboonchai	5,677,686	7,477,686	(1,800,000)	-
6. Mrs. Sirima	Iamsakulrat	84,234,151	84,234,151	-	(no stock trading during the year)
7. Mr. Jain	Charnnarong	72,319,130	72,319,130	-	(no stock trading during the year)
8. Mr. Wirat	Sukchai	87,775,858	89,178,367	(1,402,509)	-
9. Mr. Thammanoon	Tripetchr	22,373,795	21,972,905	400,890	-

Note : ^{1/} independent director

^{2/} Directors who Appoint replacing Dr. Sothitorn Mallikamas, who retired by rotation at the 2021 Annual General Meeting (AGM).

• No HARN share was held by directors' mother, spouses and children under legal age except those of No. 4, 7 and 8 which no stock trading during the year 2021.

Report summarizing change in shareholding HARN proportion of Executives compair as of 2020 and 2021:

Names of directors/executives		number of shares At Date		Increase (Decrease)	Note
		December 31, 2021	December 31, 2020		
1. Mr. Wisit	Wachiralappaitoon	542,345	436,532	105,813	-
2. Mrs. Varinkan	Teraumranon	1,222,162	1,160,353	61,809	-
3. Mr. Pracha	Phromphornchai	11,540,145	11,601,466	(61,321)	-
4. Mr. Rattanaphan	Mukhariwattananon	3,087,621	3,598,942	(511,321)	-
5. Mr. Suchat	Suwatnodom	635,095	237,548	397,547	-
6. Mr. Kittiphong	Kittimethawenun	70,564	26,508	44,056	-
7. Mr. Vachiravit	Akaraseranee	62,552	23,383	39,169	-
8. Mr. Sukit	Litikorn	526,853	526,853	-	(no stock trading during the year)
9. Mr. Withoon	Thamee	612,773	550,368	62,405	-
10. Mr. Pongsawat	Penglengpol	8,689	8,689	-	(no stock trading during the year)

Note : • No HARN share was held by executives' mother, spouses and children under legal age except those of No. 3 and No.4 which no stock trading during the year and executives' mother has stock trading during the year 2021.

3) Anti-Corruption Prevention Policy Relating to Anti-Corruption Matters

Thaioil establishes and enforces through all the organization an explicit "Anti-Corruption Policy" comprising of definitions, responsibilities, implementations, and measures within Anti-Corruption Measures Handbook. The Board approved on May 10, 2018 which is an ISO 9001:2015 certified document. The Board, executives, employees, subsidiaries, joint ventures, other companies that control and agents (if any), are required to acknowledge and comply with this policy.

Define Anti-Corruption Policy an explicit, all the Board, executives, employees, subsidiaries, joint ventures, and other entities that may have a control over including agents (if any), prohibited or commit or accept any kind of corruption at all means. For direct and indirect benefits to personal and relevant parties neither one is a receiver or a giver or an offer of bribe both monetary and non-monetary to the government or private, and partners that HARN exercise business.

HARN is uncompromisingly committed to anti-corruption, demonstrated by its membership of the Thai Private Sector Collective Action Coalition Against Corruption (CAC) since 2017. It operates based on good governance, code of conduct and ethics in conducting business, with responsibility to the community, society, environment and all stakeholders throughout the supply chain. In this case, to show our true commitment to doing so, the Board of Directors issues the policy and guidelines against corruption for directors, management and staff to strictly adhere to.

- Declaration of intention to join Thailand Private Sector Collective Action Coalition against Corruption (CAC) on March 21, 2017.
- Underwent the certification process and became a certified member CAC with effect from November 5, 2018.
- Applied for CAC recertification and won approval, with effect from September 30, 2021.

To be in accordance with the latest anti-corruption policy adopted by the Company, HARN provides guidelines for overseeing the compliance with anti-corruption practices as follows:

1. Assign directors management and staff to assess the compliance with corporate governance policies and principles, business ethics and the Anti-Corruption Measures Manual every year.

2. Follow up to regularly review and improve the anti-corruption policy every year in order to ensure that HARN's operations comply with changes in business, regulations and relevant legal requirements. It must be presented to the Audit Committee and reported to the Board of Directors on a quarterly basis.

3. Assign the Quality System Management Department to inspect and monitor the implementation of anti-corruption policy measures by various departments through internal quality audits and report to the Chief Operating Officer, Chief Financial Officer, and the management review meeting every month by presenting to the Risk Management Committee. It must be reported to Board of Directors on a quarterly basis.

4. If from information from the audit or complaints found by the investigation there is reasonable evidence to believe that there are transactions or actions that may have a significant impact on the financial status and HARN's performance, including any breach of the law, the Code of Business Conduct/Ethics, guidelines for corruption prevention, or questions about financial report or internal control system, the Audit Committee will report to the Board of Directors in order to take corrective action within the period the Audit Committee deems appropriate. An investigation will be conducted without disclosing the whistleblower's name in order to protect the potential impact on the whistleblower of the complaint or allegation.

Furthermore, the Boards review policies suitability and Anti-corruption Measures on May 14, 2021 to meet changes of the business environment, rules, regulations, and the provision of laws, Promulgated to use in HARN and communicate with outsiders on the same day.

Performance in 2021

1. Assessed operational risks, compliance with laws, safety, health and environment, corporate reputation and corruption covering all parties involved. The risk control results were reported to the Risk Management Committee, Audit Committee and the Board every quarter. The results of the risk assessment of corruption, unethical actions and ethics of the Board, Executives and Employees were at a satisfactory level without any wrongdoing found.

2. Communicate policies and anti-corruption measures to all employees which counts as 100% through Email, Intranet and Digital Signet to cultivate awareness and promote transparent, fair and verifiable operation behavior.

3. Organized internal training on good governance and anti-corruption “HARN Anti-Corruption” for new employees, including requiring a knowledge test. There were 22 employees in total who attended the training and passed the tests at 100%.

4. Organized E-Learning in the HARN Academy system as a learning medium on the principles of good governance, business ethics, and the Anti-Corruption Measures Manual for directors, executives and all employees in all areas thoroughly to raise awareness, including requiring the comprehension test. There were 8 out of 9 directors who passed the tests, representing 88.89%, 218 out of 238 executives and employees who passed the tests, representing 91.6%.

5. There was a review for the completeness of the anti-corruption process from the auditor of Dharmniti Auditing Company Limited, commenting that HARN's performance is sufficient and appropriate in accordance with the principles of good practice and the framework set forth in the compulsory part of the Thai Private Sector.

4) Whistleblowing

The Board provide process and channels for complaints and whistleblowing and/or all forms of all complaints of all stakeholders through the following channels:




1. Channels and Methods of Whistleblowing

Complainants must explicitly spell out “confidential” to the Chairman of the Audit Committee which is an Independent Committee, through these channels.

-  Chairman of the Audit Committee
Harn Engineering Solutions Public Company Limited
559 Soi Soonvijai 4, Rama 9 Road, Bangkok, Huaykwang,
Bangkok 10310
-  chairac@harn.co.th
-  www.harn.co.th/corporate-governance/corruption-report/

2. Channels for Advice

Employees or others whom has inquiries and seek for advice on anti-corruption policy may contact through these channels.

-  Chief Financial Officer
Harn Engineering Solutions Public Company Limited
559 Soi Soonvijai 4, Rama 9 Road, Bangkok, Huaykwang,
Bangkok 10310
-  +(66)2 318-9744 ext.4004
-  wisit.w@harn.co.th

3. Channels Contact to HARN

Stakeholders can express their opinions, suggestions, and other complaints which are not an issue of anti-corruption through communication channels as follows:

- Company Secretary Email: wasukan.b@harn.co.th
Tel: (02) 318-9744 ext. 4011
- Investor Relations Email: wirat.s@harn.co.th
Tel: (02) 318-9744 ext. 5001
- Digital Enterprise & Communications
Email: dec@harn.co.th
Tel: (02) 318-9744 ext. 4130
- Mail Harn Engineering Solutions Public
Company Limited, 559 Soi Soonvijai 4, Rama 9 Road,
Bangkapi, Huaykwang, Bangkok 10310

However, once the chairman of the Audit Committee receives a clue, or the company secretary, investor relations, digital organization department or any other channels receive clues and complaints from the stakeholders of HARN, a preliminary consideration will be made regarding the category of which the matter of the complaint received falls into. The cases will be collected to present to the sub-committees or related directors and all suggestions and issues will be summarized to present to the Board of Directors quarterly. Except for complaints and whistleblowing directly sent to the chairman of the Audit Committee, the chairman of the Audit Committee will personally open those letters.

For employee complaints or suggestions, HARN has a process for dealing with such by considering whether the employee's complaint is a matter that may be an offense and at what level in order to determine the penalties for the action with fairness and accuracy. To build confidence in the measures to protect and maintain the confidentiality of complainants, employees can complain and express opinions through a variety of channels such as through a comment box, LINE Official account of HARN, or direct notification via e-mail to the Human Resources Department. All employees are obligated to acknowledge the available complaint channels since their orientation as new employees.

Actions when receiving complaints and reporting clues

The Audit Committee will consider the complaints received and inform the relevant authorities in order to investigate the facts of the complaints and take appropriate corrective action. The Audit Committee will periodically monitor the progress. The relevant departments will notify the results within a reasonable period of time to the complainants. The Audit Committee will report to the Board of Directors.

Protection Measures Complainants and Whistleblowers

In order to protect the rights of whistleblowers with good intention, HARN will not disclose names, addresses or any other information that can identify the complainant or the whistleblower and keep the information of the complainant and whistleblower confidential. Only those responsible for the investigation of complaints will have access to such information. In this regard, the person receiving information from performing duties related to complaints have a duty to maintain information, complaints, clues and documentary evidence of the complainant and whistleblower confidential. No information is to be disclosed to any other person who does not have a relevant duty unless it is a disclosure in accordance with the duty required by laws.

Assigned by the Board of Directors, the Audit Committee acts as the main contact point for reporting incidents and clues, following up on incident reports, protecting and providing fairness to complainants or those who provide clues related to corruption within the organization, and reporting the results of the investigation and punishment to the Board of Directors. In 2021, HARN received 1 complaint from whistleblowing channels related to corruption. After reviewing the facts in accordance with the complaints and clue process completely, there were no cases of fraud or violations of HARN regulations. The results have been reported to the complainants with the opinions, as well as additional recommendations from the fact-checking committee to make the work process more efficient.

Diagramme of the process of receiving complaints or report clues, investigation, punishment and reporting



8.2 Performance Report of the Audit Committee

Report of the Audit Committee



Dr. Thakol Nunthirapakorn

Chairman of the Audit Committee

Appointed by the Board of Directors (the Board), the current Audit Committee consists of 3 proficient and knowledgeable independent directors, all of whom command diverse expertise and experience, as follow;

1. Mr. Thakol Nunthirapakorn Chairman of Audit Committee
2. Miss Voranuch Supaibulpipat Member of the Audit Committee
3. Mr. Prasert Deejongkit Member of the Audit Committee

Serving as secretary to this committee is Mr. Wisit Wachiralappaatoon, Chief Financial Officer.

All of whom has qualifications are considered suitable for reviewing financial statements' credibility against the requirements of Securities and Exchange Commission of Thailand (SEC) and Stock Exchange of Thailand (SET).

The committee executed its Board-assigned duties and those under its own charter, which agreed with SEC's and SET's best practices, in oversees review financial reports to ensure that they are accurate, completely, has appropriate and effective internal control and internal audit, and its business operations are compliant with applicable laws regulations and policy. The Audit Committee is also responsible for proposing to appoint and terminate the external auditor of the HARN's, including considering the appointment, transfer and termination of the employment the internal auditors of the HARN's.

In 2021, The Audit Committee held a total of 4 meetings, with perfect attendance by all members. Mr. Sothitorn Mallikamas member the first meetings; after his retired by rotation from the Board at the 2021 Annual General Meeting (AGM) from April 23, 2021, Mr. Prasert Deejongkit was elected by the Board and the Shareholder meeting to take the position and member the meetings.

The Audit Committee consultations with the executives, the internal auditor, and the external auditor. In addition, the Committee held one non-executive meeting to freely discuss on the external auditor's performance, opinions, matters from financial report review and audit, as well as its collaboration with the Audit Committee and Corporate Internal Audit Department.

The performance highlights of the Audit Committee as follows

1. Reviewed the Financial Statements

Collaborating with the external auditor and relevant members of the executives, the Committee reviewed the quarterly and annual separate and consolidated financial statements. It also examined information disclosure on Key Audit Matters (KAMs) indicated in the auditors' report by Dharmniti Auditing Co., Ltd. To this end, the Committee reviewed the credibility of estimated figures, the management's assumptions requiring discretion, display of transactions, and the impacts of the Thai Accounting Standards and Thai Financial Reporting Standards as appropriate in the material aspects, and as regards disclosure of information in an accurate, adequate, complete and reliable manner and useful for related to stakeholders, as well as the criteria of the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET). The auditor has performed the auditing work and provided unqualified opinions.

2. Internal Audit

The Audit Committee approved annual audit plans, plan execution, audit outcomes, and follow-ups as well as improvements of significant issues every quarter. It also assessed the independency of the internal audit from Ultima Advisory Company Limited and pushed for the development and upgrades in both assurance and consultation to the internal auditor continually to perform the duties efficiently and effectively, comply with rules and policies, support the adoption of audit management system and data analysis tools to manage the internal audits so that the auditor can work without time and space constraints, as well as directing an assessment of the sufficiency of the internal audit quality and working to keep pace with the changes in international standards of the internal audit profession.

3. Connected Transactions

The Audit Committee review connected transactions or those posing potential conflicts of interest with that of HARN's and subsidiary, of in conformity with the relevant announce of the Office of the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET). The Committee concluded have observed regular business practices, fairness, and sensibility, prioritizing the interests of business and its shareholders. Such transactions were also promptly disclosed to SET as required.

4. Review of Compliance with Laws, Corporate Governance, Risk Management, and Internal Control

The Audit Committee reviewed management practices to ensure corporate governance, as well as laws and related regulations compliance. Also closely monitored preparation for legal implementation before the actual enforcement of new legislation. This is to ensure the preparedness for risks and disruptions emerging at all times, the business continuity, and the efficient and effective development. The Audit Committee strongly urged adoption of the concept of Integrated Governance, Risk and Compliance (GRC) to enable sustainable

integration of the corporation. It advocated proactive audit by the Corporate Internal Audit Department as well as the department flexibility under unforeseen circumstances such as E-meetings as a continual monitoring tool for all transactions under the Enterprise Resources Planning (ERP) system or other technological operating systems. Irregularities could then be promptly rectified. The Committee also endorsed the findings on internal control system sufficiency assessment as required by SEC to ensure that HARN commands appropriate and sufficient business internal control.

5. Appointment of the External Auditor for 2021 and Approval for Audit Fee

In selecting the external auditor, the Audit Committee considered performance records, experience, independency, audit fees, and compliance with SEC's announcements. The Committee resolved to nominate Mr.Thanawut Piboonsawat, License No.6699 and/or Miss Potjanarat Siripipat, License No.9012 and/or Miss Roongnapha Saengchan, License No.10142 and/or Miss Techinee Pornpenpob, License No.10769, or other auditors approved by the Office of the SEC's from Dharmniti Auditing Company Limited as external auditor and the proposed audit fee for the Board's endorsement before submitting to the 2021 Shareholders' Annual General Meeting for approval.

In conclusion, this year the Audit Committee has performed its charter duties and responsibilities, fully exercising diverse expertise with prudence and independency and providing creative views and advices. The Audit Committee concluded that HARN and Subsidiaries have valued efficient and effective business conduct, prepared complete important financial reports aligning, accurate and credible, which is in line with the accounting and financial report standards, along with complete and adequate disclosure of connected transactions with potential conflicts of interest, has commanded sound corporate governance, anti-corruption prevention, risk management, and suitable and adequate internal control process in full compliance with applicable laws and regulations, In addition, assessed the Audit Committee's performance at more than 90% or "Excellent".

8.3 Report of the Board-Committees

Report of the Nomination and Remuneration Committee



Miss Voranuch Supaibulpipat

**Chairperson of the Nomination
and Remuneration Committee**

The Board of Directors appointed the Nomination and Remuneration Committee, which consists of independent directors and non-executive director not less than 3 members and more than half of the Committee must be independent directors. Currently, the Nomination and Remuneration Committee consists of 3 directors, 2 independent directors and 1 non-executive director as follows:

1. Miss Voranuch Supaibulpipat Chairperson of the Nomination and Remuneration Committee (Independent Director)
2. Mr. Parkphum Wongpaitoon Member of the Nomination and Remuneration Committee (Independent Director)
3. Mrs. Sirima Iamsakulrat Member of the Nomination and Remuneration Committee and Secretary

The Nomination and Remuneration Committee duty is to recruit qualified people under HARN process and criteria for nomination as Directors and Chief Executive Officer, also selects Directors to serve on Board-Committees and reviews Director and Board-Committee's remuneration models and criteria before proposing for the consideration of the Board and the Annual General Meeting of Shareholders as required by law.

In 2021, the Nomination and Remuneration Committee completely executed all duties stated in the charter, held a total of 2 meetings, with perfect attendance by all members. Mr. Sothitorn Mallikamas member the first meetings; after his retired by rotation from the Board at the 2021 Annual General Meeting (AGM) from April 23, 2021, Mr. Parkphum Wongpaitoon was elected by the Board to take the position and member the meetings.

The performance highlights of the Nomination and Remuneration Committee as follows:

1. Reviewed the director recruitment and remuneration policy

To enhance Board diversity by adding guidelines that disregard differences in gender, age, race, nationality, place of birth, or origin as restrictions for the recruitment, which agrees with international corporate governance, including, reviewed the director's remuneration structure for the approval of the 2021 Annual General Meeting. From the comparison with that of leading companies in similar industries and the remuneration of directors of listed companies of the Thai Institutes of Directors (IOD) report, the rate of director's remuneration structure should be increased, remuneration was proposed and already approved by the 2021 Annual General Meeting.

2. Review stipulated the overall qualification structure framework (Skill Matrix)

For accordance with corporate governance principles, by conducting a specific competence assessment of the company's Board of Directors for the year 2021 to review the appropriate expertise, both regulatory and strategic, to be appropriate and in line with the business context.

3. Review the development plan for directors and top executive

Considering training courses related to the development of knowledge and competence on good corporate governance and the performance of a director's duties of the Thai Institute of Directors Association (IOD) in order to develop directors and increase useful perspectives to be applied to the business, has sent 1 director to attend Director Accreditation Program (DAP) class 184/2021: namely Mr. Prasert Deejongkit.

4. Review the nomination and remuneration policy of the Chief Executive Officer

Considering the performance appraisal criteria and remuneration adjustment criteria, it was found that they are still appropriate; therefore, there are no further issues that need to be amended.

5. Review the succession policy of Top Executives

To ensure that the administration can be carried out continuously. From the consideration, it was found that the policy is still appropriate, sufficient, and covers the operational guidelines, so there are no additional issues that need to be amended and report performance for plan to the Board's consideration.

6. Recruitment and selection of qualified person as director

Strictly Conduct recruitment and selection of qualified persons to be appointed as independent directors and audit committee members according to the defined processes and criteria to propose to the Board of Directors and the shareholders' meeting as required by law. In this regard, the list of professional directors in the Thai Institute of Directors Association (IOD) was used to assist in the selection of suitable persons, including considering the composition and qualifications of the Board of Directors both in general and individually to suit the size, type, complexity, and variety of business operations. The consideration of qualifications will cover education, expertise, skills, experience, and specialization related to HARN's business, including independence according to the rules required by law and HARN.

7. Recruited and nominated director as independent director and committee director

Recruited and nominated directors, for Independent Directors and 3 Board-committees, namely the Audit Committee, Executive Committee and Nomination and Remuneration Committee and tabled these lists for the Board to appoint in place of vacancies or directors with term completion as required by law.

8. Orientation and provided documents for new director

Provided organized orientation useful documents, to newly appointed directors. In 2021, 1 new director were appointed: namely Mr. Prasert Deejongkit.

9. Consider review of performance evaluation form for Chief Executive Officer

Review the 2021 Chief Executive Officer of Performance Evaluation Form, assessed the performance by non-executive directors, using the guidelines of the Stock Exchange of Thailand and tabled the proposed annual salary and bonuses adjustment for the Board's consideration.

10. Opportunities minority shareholders propose agenda and qualified persons as directors

Supported the granting opportunity for minor shareholders, to propose agendas and nominate candidates as directors to nomination process from from October 1 to December 31, 2021 before the 2022 Annual General Meeting through HARN's website.

11. Review the Nomination and Remuneration Committee charter

To be the guidelines for the performance of duties appropriately and sufficiently and in accordance with the principles of good corporate governance, transparency, and clarity as well as reviewing the appropriate compensation structure to support HARN's operations to be in alignment with the goals.

Nomination and Remuneration Committee have used knowledge, ability, caution, and sufficient independence in giving opinions and suggestions for the overall benefit of HARN for the best interest of shareholders. It also serves to oversee the Board's performance under the good corporate governance system in accordance with the relevant laws and regulations. In 2021, no significant errors that affect HARN and the shareholders have been found, including, no non-executive directors resigned due to HARN's corporate governance issues, including avoiding methods of harming HARN's reputation.

Report of the Executive Committee



Mr. Wirat Sukchai

Chairman of the Executive Committee

Harn Engineering Solutions Public Company Limited operate the business according of good corporate governance and a code of conduct represent an integral part of the core mission to which has always been strictly committed to ensure the Company's sustainable success. The Board of Directors appointed the Executive Committee, which consists of directors and top executive consisting of 5 knowledgeable, competent, and experienced directors as follows:

- | | |
|--------------------------------|---|
| 1. Mr. Wirat Sukchai | Chairman of the Executive Committee and Chief Executive Officer |
| 2. Mr. Thammanoon Tripetchr | Member of the Executive Committee and Managing Director |
| 3. Mr. Jain Charnnarong | Member of the Executive Committee |
| 4. Mr. Wisit Wachiralappaitoon | Member of the Executive Committee and Chief Financial Officer |
| 5. Mrs. Varinkan Teraumranon | Member of the Executive Committee and Chief Operating Officer |

Serving as secretary to this committee is Mrs. Varinkan Teraumranon.

The year 2021 was a year that HARN faced significant business challenges due to the COVID-19 pandemic situation, which resulted in Thailand's economic slowdown and confrontation of various risk factors, both inside and outside the country. The Board of Directors managed the business under such circumstances to the best of their ability with carefulness and prudence to strengthen the organization in all aspects to enable continued business operations and sustainable growth by giving advice and recommendations on business management, as well as closely monitoring and evaluating the performance of HARN and its subsidiaries.

In 2021, the Executive Committee, held a total of 12 meetings, with perfect attendance by all members, completely executed all duties stated in the charter and report the performance to the Board's.

The performance highlights of the Executives Committee as follows:

1. Define business plan and strategy

Review the vision, mission and target in the past year, to determine the strategy and operation plan of HARN and Subsidiary, in accordance with the vision and mission, considering internal, external factors that have an impact, opportunities and risks, which communicate plans to all executives and employees, including, monitor to be implementation a monthly strategy, in order to the goals and report every quarter the strategic plan to the Board's.



2. Monitor and oversee the business operation

Track the performance on a monthly of every business line, in order to accordance plan policy, target and budgets, as approved by the Board and report every quarter the performance to the Board for acknowledgment.

3. Consider the annual budget and investment

Scrutinize the annual budget and investment projects to develop information technology systems to support adaptation to Digitalization, promote the potential of personnel to prepare them at all levels to be able to compete in the business in the long run, and other matters by management to propose to the Board's approval.

4. Consider the 2021 annual dividend

Scrutinize the net profit of the operation result of 2020 and the 2021 annual dividend payment at the rate Baht 0.13 per share, for the Board's and the shareholders' approval.

5. Define the remuneration rate policy and salary structure of employee and executives

Scrutinize the remuneration rate policy, salary structure, bonuses and other benefits for employee and department manager, except Chief Executive Officer.

6. Review the Executive Committee charter

To provide guidelines for performing duties appropriate for the current situation and to review the regulations and announcements relating to HARN's internal operations to be in accordance with the changes occurred.

The Executive Committee stresses firm commitment and of sustainability development, to suit synchronize and support the vision and business strategies on a par with international sustainable direction, also reviewed the long-term sustainable strategy that covered the environmental, social, and governance (ESG). With strong determination to demonstrate standards of corporate governance, social responsibility, and sustainability management through 2021, HARN was assessed with 2021 Corporate Governance Report (CGR) of Thai Listed Companies and achieved an "excellent" level 5 star which is the highest level for the 3th consecutive year, and achieved 100 AGM Checklist Score for the 4th consecutive year. These achievements are evidence of the commitment to promote, develop, and supervise HARN's operation based on good corporate governance, code of conduct in tandem with social responsibility and sustainable development, in accordance with mission "maximize our customer satisfaction, continuous employee development, make a sustainability return to shareholders by expanding the business, enhance quality of life for stakeholders under discreet management and corporate governance". This is to ensure that HARN will development achieve sustainable growth, earn shareholders' conviction, generate value and benefits for all stakeholders.

Report of the Executive Committee



Mr. Wirat Sukchai

(Acting) Chairman of the Risk Management Committee

To support the Board of Directors on the supervision of corporate risk management to achieve business goals, and to enhance confidence in and credibility of HARN among investors and stakeholders, the Board appointed and assigned the Chief Executive Officer, Managing Director, Chief Financial Officer, Chief Operating Officer and director of various departments to act as the Risk Management Committee, consisting of 12 knowledgeable, competent, and experienced directors with sound understanding of the business. However, independent directors acting as the chairman of the risk management committee as follows:

1. Mr. Wirat Sukchai	(Acting) Chairman of the Risk Management Committee
2. Mr. Thammanoon Tripetchar	Member of the Risk Management Committee
3. Mr. Pracha Phromphornchai	Member of the Risk Management Committee
4. Mr. Rattanaphan Mukhariwattananon	Member of the Risk Management Committee
5. Mr. Suchat Suwatnodom	Member of the Risk Management Committee
6. Mr. Kittiphong Kittimethawenun	Member of the Risk Management Committee

7. Mr. Vachiravit Akaraseranee	Member of the Risk Management Committee
8. Mr. Sukit Litikorn	Member of the Risk Management Committee
9. Mr. Withoon Thamee	Member of the Risk Management Committee
10. Mr. Pongsawat Penglengpol	Member of the Risk Management Committee
11. Mr. Wisit Wachiralappaitoon	Member of the Risk Management Committee
12. Mrs. Varinkan Teraumranon	Member of the Risk Management Committee

Serving as secretary to this committee is Mrs. Varinkan Teraumranon.

The Risk Management Committee defined and reviewed the corporate risk management framework, policy, and processes, performing as indicated in the Risk Management Committee Charter, as well as efficiently providing recommendations for proper risk management approaches to ensure their accordance with strategic directions and business plans, finance, rules compliance, social and environmental treatment, emerging risks as well as to monitor and manage risks sufficiently and effectively. Also, consistently and effectively advocated and improved risk management practices throughout corporate on a par with international standards to forge corporate culture.

In 2021, the Risk Management Committee, held a total of 4 meetings, with perfect attendance by all members. The performance highlights of the Risk Management Committee as follows:

1. Review and amend the risk management policy

Endorsed the acceptable risk appetite as appropriate for the circumstances of organizational risk, measures to prevent and mitigate risks, risk management effectiveness index, as well as reviewing the risks associated with corruption in accordance, measures to control risks and follow up on operation, with the revised anti-corruption measures framework announced in 2021.

2. Reviewed the anti-corruption measures manual

Improve on facilitation payments, political party support, government official employment, conflicts of interest, monitoring and review, etc., to be in line with the self-assessment on Anti-Corruption Measures, Revision Edition 4.0.

3. Reviewed the risk management control plan at organizational and operational levels

Improve the risk management control plan for the year 2021 to be in line with strategies and changing business environments to measure the effectiveness of risk management by giving recommendations to the management team to improve risk management.

4. Report performance to the Board

In quarterly basis Reported the performance to the Board of Directors on a quarterly basis by pushing and closely monitoring the results of the risk management process under highly fluctuating market conditions, including things that need to be corrected in accordance with the established policies and strategies. The internal auditors are responsible for following up and reviewing the risk management systematically and efficiently.

5. Review the Risk Management Committee charter

Improve the Risk Management Committee Charter and approved the increase of the Risk Management Effectiveness Index for the year 2021, including screening the list of risks for the year 2021, presented it to the Board of Directors for approval, prepared a list of risks and an organizational risk management plan along with the annual action plan, which make the risk management plan clear and in line with the strategic direction and business goals. This was transmitted to practice throughout the organization to enable the risks to be managed effectively and promptly.

The Risk Management Committee concluded in 2021 HARN has developed a comprehensive corporate risk management system for all aspects of risks and commanded continual risk management practices to cope with prevailing circumstances. The meetings were regularly arranged to review key and urgent risks, rendering HARN risk management effectiveness. Could effectively and suitably manage key corporate risks amid challenging circumstances to be within indicated risk appetite.

9. Internal Control and Connected Transaction

9.1 Internal Control

HARN realizes the importance of the internal control system under the framework of The Committee of Sponsoring Organizations of Treadway Commission (COSO) and applies the principles of the corporate risk management and internal control. This is to ensure efficient and effective structure design and process, credibility of financial and other reports, and full compliance with laws and regulations prescribed by the Stock Exchange of Thailand (SET) and the Securities and Exchange Commission (SEC). The Board therefore appointed an internal audit which as outsource responsible for quarterly following up and reviewing the adequacy of internal control system, and assigned the Audit Committee to review the internal control assessment.

In 2021, the Board examined the assessment internal control and risk management according to plan on a quarterly, and is prepared by the internal audit and subsequently reviewed by the Audit Committee, and concluded that this year HARN's internal control system was indeed adequate and suitable for its business operations while accomplishing the objectives of internal control are as follows:

1) Control Environment

HARN commands a sound, adequate, and suitable-for business internal control environment, operating under good corporate governance and code of conducts. Defining written policies under the good corporate governance, code of conducts and anti-corruption, which focusing on integrity and the observance of the code. Everyone at HARN including directors, executives, and employees is obliged to comply with such policies and requirements. In 2021, HARN has undergone the annual assessment of Corporate Governance Report of Thai Listed Companies (CGR) by Thai Institute of Director Association (IOD) for the 3th consecutive year, scored top marks at Excellent level.

Defining the code of conduct governing conflicts of interest and requiring the Board and top executives within February annually reporting their conflicts of interest and stresses its code on giving and accepting gifts, assets, or other benefits so as to remind the Board, executives and employees to comply with the defined guidelines and code of conduct. In 2021, review the knowledge, cultivation of ethics awareness and transparent, fair to the Board, executives and employees to comply, and auditable work behavior.

Identifying the anti-corruption policy as one of the corporate governance guidelines to declare HARN's commitment to business conduct with fairness, integrity, and transparency under the good corporate governance. Also review and promoted employees' awareness of legal compliance. Clearly dividing responsibilities of the Board and executives to ensure the Board's independence. The Board's roles duties and responsibilities involve the review and endorsement of key strategies and policies, financial goals, risks, plans, and budgets. The Board also exercises supervision to ensure legal compliance and efficient and effective business operation as laid out in policies and plans.

Defining the HR Policy to enhance employees' competency in a systematic and sustainable way, duly embracing aspects of personnel attraction, development, and retention and engagement. Also values the process of fair performance management reflecting the ability to perform against Key Performance Indicators (KPIs). In 2021, personnel recruitment strategies were reviewed to keep up with changing environment and prevailing business needs. This included efficiently applying digitalization to sustain future business expansion plans and challenges posed by competition with the external labor market. Finally, the readiness and qualification of successors in management and section head levels were thoroughly assessed.

2) Risk Assessment

HARN values and incorporate risk management throughout the entire organization. To this end, the Board assigned the Risk Management Committee (RMC), consisting of proficient directors and top executives to devise corporate risk management policies and supervise to institute protocols and processes for the organizational, functional, and operational levels of HARN and Subsidiaries, to ease impacts on businesses and business continuity management to ensure that they are in line with the corporate risk management policy and that such management is efficient and suitable for business conduct growth and ensure corporate objective achievement. The operating results of which shall be reported to the Board on a quarterly basis.

To this end, HARN devised the risk management plan embracing risk assessment, analysis, and review in line with its strategic under its objectives and goals. Such plan takes into account external and internal factors, including domestic political situations, world economy, laws, regulations, government policies, stakeholders' expectations, and the ongoing COVID-19 pandemic. Also defined risk appetites and Key Risk Indicators (KRIs) to help monitor and report the outcomes of each unit against the defined goals. The risk management measures are monitored to ease the impacts on business conducts, and the corruption risk assessment has process for units engaging public agencies. To this end, the risk data including key risks, and KRIs has been recorded in the Risk Management Information System.

Each year, process owners are to assess prevailing parameters affecting internal control and further develop improvement plan or enhance control for alignment and update.

3) Control Measures

Efficient and effective control activities help HARN mitigate risks within risk appetite. The key control measures are as follows:

1. Internal control policies, including work procedures, manuals, and work instruction, and administration authorization define fund limits and approval authority hierarchy, including budgets, personnel administration, material purchase and procurement, contract, finance and accounting, and amortization.
2. Internal control measures with due regard for sound control principles, including segregation of duties, approval, review, and document filing, ensure efficient and effective conduct, credible reports and compliance with applicable laws and regulations. In 2021, HARN follow up the implementation of control plans under a given timeframe to monitor the adequacy and suitability of internal control.
3. Control measures for regularly monitoring transactions involving of the Board and executives, provide guidelines for informing the intention to purchase and/or sale of HARN securities, both their own purchase or sale and related persons, to the Company Secretary at least one working day before the actual transaction and the change of HARN security holding to SEC within three working days.
4. Preventive measures of the ongoing COVID-19 pandemic, which has impacted HARN's goal achievement directly, have prompted to make work standards, to cover risks and repercussions. Also, has defined cost management measures to support its performance outcomes affected by economic volatility and the COVID-19 pandemic.
5. The development of technology-related control activities helps clearly define IT policy are IT development policies and plans, which has cybersecurity framework by Information Communication and Technology Department (ICT) to define the direction and policy and efficiently drive digital management, thus accommodating future growth. Also staged the annual business continuity drill for cyber-attacks, designed to handle cyber-threats, emergencies in process operating.
6. The steer HARN management in the same directions through joint deliberation and decision-making on critical matters and regular monitoring subsidiaries' businesses. To this end, has appointing a representative as directors of subsidiaries. As a result, HARN has regularly participated in setting policy, acknowledging information, and monitoring performance outcomes against KPIs.

4) Information & Communication

HARN values information and communication technology systems that systematically support business execution, operation, management, and financial reports to accommodate the Board and executives' decision making. And to support efficient and effective internal control. HARN has defined information and communication technology policy and plan, and in 2021, In order to ensure appropriate internal communication for employees to receive prompt, complete, and accurate. HARN has defining efficient guidelines for managing contents and practical communication channels. To this, has clearly define responsible parties for each internal communication channel, including the intranet, Email, line official and digital signage as well as key communication channel to properly accommodate the Board's decision making, such as sent to the Board at least 5 business days prior to the meeting date.

As for external communication, updates through Website and Facebook, to ensure that external stakeholders can therefore access key information more conveniently and speedily. HARN has defined complaint-filing and whistleblowing measures in writing, which include complaint handling, fact investigation, conclusion, clear identification of complaint-filing channels, and whistleblowers and related parties' protection. This is to enable employees and third parties to report or provide related information on unlawful acts, fraud, or pursuit of illegal benefits.

5) Monitoring Activities

It is HARN executives' duty and responsibility to oversee and audit internal work systems to ensure efficiency and conformance to policies, requirements, and work regulations under the concise internal control system, and equally values the management of safety, occupational health and environment, to revise its operation as required, safeguarding and minimizing losses from safety and the occupational health of employees.

To ensure stakeholders of HARN's operation under an efficient and effective management system, with timely preparation of accurate, transparent, and credible financial and other reports and strict compliance with laws and regulations. Management is tasked with annually monitoring of internal controls. Should there be changes in tasks or work processes during the year, the Management section is to duly update work procedures and control measures. In addition, also a follow-up to monitor internal control, identify irregular transactions in the system each month and regularly report them to process owners as well as executive meetings to ensure that they realize the importance of compliance with business processes and internal control mechanisms. At the same time, Internal Audit department formulates annual audit plans based on key risks, change, or increase in work processes or systems, and requests from executives and the Audit Committee to verify the adequacy and suitability of each activity.

6) Internal Control System

At the Board meeting No. 1/2021 of February 25, 2021, appointed Ultima Advisory Co., Ltd., as internal audit assigning Miss Chonlada Thirapattananon and Miss Siriphan Tantipanichphan as head of internal audit of HARN, is an independent unit. Fosters assurance and provides consultation to ensure that business processes are duly equipped with risk management, has sound internal control practices and rules in support of corporate objectives. It reports findings to the Audit Committee for consideration and forwarding them to the Board for acknowledgment every quarter. Regular monitoring is undertaken for actions in response to the recommendations. In its course of work, internal audit freely expresses its opinions. No conflicts have arisen that cannot be resolved.

Also, internal audit equipped with expertise, skills, and experience in internal audit, performance, risk assessment, and internal control and was therefore regarded as suitable for the position. The Audit Committee consider approved the appointment, removal, transfer, performance assessment of internal audit.

9.2 Connected Transactions

The connected transactions in 2021 are summarized below:

9.2.1 Related party transaction approval measure or process

The Board meeting no. 3/2014 on May 15, 2014 resolved to establish a policy and process for approving related party transactions between HARN and individuals who have or may have conflict of interest on or beneficial interest in the transaction, such as the major shareholders, directors, executives, persons with controlling power, connected persons, or related persons, etc. HARN will comply with the securities and exchange law, provisions or notifications or stipulations of the Office of the Securities and Exchange Commission, Capital Market Supervisory Board, and the Stock Exchange of Thailand regarding such matters, as well as the regulations regarding disclosure of information on related party transactions according to the Thai Accounting Standards and Thai Financial Reporting Standards set forth by the Federation of Accounting Professions under the Royal Patronage of His Majesty the King. In this regard, persons with conflict of interest or beneficial interest in the transactions shall not be entitled to take part in consideration of or to vote on the transactions.

In case prescribed by law to seek approval of such transactions from the Boards' or the shareholders' meeting, HARN will designate the Audit Committee to attend the meeting to consider and give opinion on the necessity and reasonableness of the transactions.

Making of the related party transactions that are under general commercial conditions and transactions that are not under general commercial conditions shall be subject to the following criteria:

1) Related party transactions with general commercial conditions

For related party transactions with general commercial conditions done between HARN and persons that have or may have conflict of interest or beneficial interest, at present or in the future, HARN has set a scope for doing such transactions, which has been reviewed and endorsed by the Audit Committee and approved in principle by the Board. Within such scope, when any of such transactions is to be made, approval may be sought only from the management, subject to the conditions that such transaction shall carry commercial conditions similar to those under which a person of ordinary common sense would do with a general counterparty under the same situation, having the bargaining power without any influence from the status of

being directors, executives or persons otherwise on an arm's length basis, and being commercial transaction to be done in general by HARN for business operation, or commercial transaction generally done by HARN in the same business to support its own normal business, with fair prices and conditions, and would not result in the transfer of benefits, including the following commercial conditions:

1. Prices and conditions offered to HARN or offered by HARN to persons in general
2. Prices and conditions offered by related persons to persons in general
3. Prices and conditions proven by HARN that companies of similar nature of business would offer to persons in general

However, when there is any transaction made on an arm's length basis as stated above, the management will make decision thereon. After an approval is given, a report on such related party transaction will be prepared and submitted to the Board for information. In case that the Audit Committee and the Board find out that such transaction has not been undertaken in compliance with the policy in place, they may jointly discuss to find a solution.

2) Related party transactions with non-general commercial conditions or other transactions

For related party transaction with non-general commercial conditions or other transactions made between HARN and the persons that have or may have conflict of interest or beneficial interest, at present or in the future, HARN shall present to the Audit Committee to weigh the necessity and reasonableness in making the transaction as well as fairness of the price and conditions by comparing with a third party or the market price, before presenting to the Board and/or the shareholders' meeting, as the case may be, for approval. In case that the Audit Committee does not have the specialized knowledge on such transaction, HARN will engage an independent expert or HARN's auditor to provide an opinion on such related party transaction to support the consideration and decision of the meeting of the Audit Committee, the Board, and/or the shareholders' meeting, as the case may be. The Board/Committee members or the shareholders who have conflict of interest or beneficial interest in such transaction shall not be entitled to take part in consideration of or to vote on the transaction.

HARN will disclose the related party transactions made by HARN in the Notes to Financial Statements audited by HARN's auditor in the Annual Registration Statement and the Annual Report (Form 56-1 One Report).

9.2.2 Connected Transactions between HARN and Individuals, Juristic Persons with Potential Conflicts

HARN has connected transaction between individuals and juristic persons with potential conflicts, which was a relationship summarized as follows (shareholding information as of December 31, 2021)

Potential Conflicts	Type	Relationship
1. Harn Vietnam Co., Ltd., in Vietnam ("Harn Vietnam")	Distribution of printing equipment	Subsidiary, 100% owned by HARN
1. Aiyaraharn Co., Ltd. ("Aiyaraharn")	Production, purchase, sale, hiring, installation, service provider, and development of "IOT Products and Solutions"	Subsidiary, 65% owned by HARN. No shares held by HARN's related parties with potential conflicts.
3. Harn Engineering Co., Ltd. ("Harn Engineering")	Assets for rent, such as office space and warehouses	3.1 HARN's shareholder: as follow; 3.1.1 Mrs. Sirima Iamsakulrat, holding 14.41% of HARN, and holding 33.32% of Harn Engineering 3.1.2 Mr. Jain Charnnarong (younger brother of Mrs. Sirima Iamsakulrat), holding 12.37% of HARN, and holding 33.32% of Harn Engineering 3.1.3 Miss Nopporn Charnnarong (younger sister of Mrs. Sirima Iamsakulrat), holding 4.49% of HARN, and holding 33.32% of Harn Engineering 3.1.4 Mrs. Prayoonsri Charnnarong (person's mother of 1.1.1 to 1.1.3), the final beneficiary of Nice Noble Limited ("Nice Noble fund"), holding 0.13% of HARN, and holding 0.04% of Harn Engineering 3.2 HARN's Director: as follow; 3.2.1 Mrs. Sirima Iamsakulrat 3.2.2 Mr. Jain Charnnarong
4. Phraboriban Co., Ltd. ("Phraboriban")	Assets for rent, such as warehouses	4.1 HARN's shareholder: as follow; 4.1.1 Mrs. Sirima Iamsakulrat, holding 14.41% of HARN, and holding 99.99% of Phraboriban 4.1.2 Mr. Jain Charnnarong (younger brother of Mrs. Sirima Iamsakulrat), holding 12.37% of HARN, and holding 0.005% of Phraboriban 4.2 HARN's Director: as follow; 4.2.1 Mrs. Sirima Iamsakulrat 4.2.2 Mr. Jain Charnnarong
5. Mr. Jain Charnnarong	-	Mr. Jain Charnnarong is the younger brother of Mrs. Sirima Iamsakulrat, and as the Director holding 12.73% of HARN
6. Jainnopsiri Co., Ltd. ("Jainnopsiri")	Investment, development, and management of real estate and land and buildings, including trading and auction	6.1 HARN's shareholder: as follow; 6.1.1 Mrs. Sirima Iamsakulrat, holding 14.41% of HARN, and holding 50% of Jainnopsiri 6.1.2 Mr. Jain Charnnarong (younger brother of Mrs. Sirima Iamsakulrat), holding 12.37% of HARN, and holding 50% of Jainnopsiri 6.2 HARN's Director: as follow; 6.2.1 Mrs. Sirima Iamsakulrat 6.2.2 Mr. Jain Charnnarong
7. Nutrix Public Company Limited ("Nutrix")	Factory manufacturing and distributing all types of animal feed products	7.1 HARN's shareholder: as follow; 7.1.1 Mrs. Valeeratn Chuerboonchai, holding 0.97% of HARN, and no shares held of Nutrix 7.2 HARN's Director: as follow; 7.2.1 Mrs. Valeeratn Chuerboonchai
8. Aiyarafun Co., Ltd. ("Aiyarafun")	Service provider for software design and development, information technology, and computers	8.1 HARN's subsidiaries Director: as follow; 8.1.1 Mr. Prasertsak Detudom

9.2.3 Sensibility of Connected Transactions

In 2021, HARN has connected transactions multiple related. The transaction is necessary and reasonable as it is a normal business operation to support HARN's normal business. The price of various transactions is set, which is a market price or fair price comparable to transactions with other third parties.

For transactions of employee benefit receivables, the price is referred to the employee benefit valuation by the actuary. In the past, transactions were all reasonable with fair prices.

The connected transactions the aforementioned, The Audit Committee considered, the opinion is needed and sensibility to HARN: as follow;

Connected transactions between HARN and Subsidiaries for Individuals, Juristic Persons with Potential Conflicts in 2021

Potential Conflicts	Type	As of December 31, 2021 (Unit : Baht)	Needed and Sensibility of Connected Transactions
1. Harn Vietnam Co., Ltd. ("Subsidiary")	1.1 Sales	18,741	List of products related to printing equipment and the sales price set according to the sales policy
	1.2 Connected Loan transactions		<u>Loans</u>
	• Long-term loans to related parties	6,649,380	On March 12, 2020, the Company entered into a short-term loan agreement with Harn Vietnam in the amount of USD 200,000, and interest is charged at the rate of 6.15 percent per annum, with a one-year repayment. Later, on March 11, 2021, at the expiration of the agreement, HARN changed the condition of the loan term to the subsidiary for a period of 5 years. The agreement expires on March 11, 2026, with an interest rate of 5.85 percent per annum.
	• Accrued interest receivable	314,388	
	• Interest income	393,275	
2. Aiyaraharn Co., Ltd. ("Subsidiary")	2.1 Sales	74,940	List of products related to fire extinguishing equipment and sales price set according to the sales policy
	2.2 HARN for renting an office		<u>Office Building Rental and Service Contract</u>
	• Lease office income	187,200	1. HARN agreed to rent the space on the 2nd floor, Room 211 of the office building no. 559 Soi Soonvijai 4, Rama 9 Road, Bangkapi Subdistrict, Huai Khwang District, Bangkok, with a total area of 52 square meters, at the rental rate of 15,600 baht and a service fee of 10,400 baht per month. The rental period is from November 22, 2020, to October 31, 2022. On the contract date, the lessee paid the security deposits for the rental and service contract in the amounts of 46,800 baht and 31,200 baht, respectively.
	• Office service income	124,800	
	• Rental security deposit	46,800	
	• Service security deposit	31,200	
	2.3 HARN provides HR and accounting services in accordance with financial reporting standards		<u>Service Contract</u>
	• Service income	300,000	1. HARN agreed to provide staffing services, preparing salary and employee welfare, submitting documents according to the regulations of the Social Security Office, contacting government agencies related to personnel work, and preparing accounting records and financial statements in accordance with the financial reporting standards and the relevant provisions of the Revenue Code, including filing tax returns, VAT, withholding tax, and corporate income tax. These services are charged at 25,000 baht per month.
	• Accrued income	-	
3. Harn Engineering Co., Ltd. ("Harn Engineering")	3.1 HARN rented an office from Harn Engineering		<u>Office Building Rental Contract</u>
	• Office lease expense	292,105	HARN agreed to rent and pay the rental of the office building no. 19/17-22 Soi Soonvijai, Rama 9 Road, Bang Kapi Subdistrict, Huai Khwang District, Bangkok, with a total area of 1,379.72 square meters at a rental rate of 300 baht per square meter per month, or equal to 413,916 baht per month. The lease agreement started on January 1, 2017 and ended on November 30, 2020, and the rental rate was changed from 413,916 baht per month to 292,105 baht per month from December 1, 2020 to January 31, 2021.
	• Other accounts payable	-	The aforementioned rental is the rental rate that is close to the market price of the rental of similar office buildings in nearby areas, whose rental rate is about 290 to 450 baht per square meter per month.
			<u>Pricing:</u> The market price by the rental rate is comparable to the rental price of nearby areas.

Potential Conflicts	Type	As of December 31, 2021 (Unit : Baht)	Needed and Sensibility of Connected Transactions
			<p><u>Trend of Future Transaction:</u> It is the transaction to be continued and in line with the building lease agreement.</p> <p><u>The Audit Committee's Opinion:</u> Such transaction is the space rental of office building. The transaction is necessary to operate HARN's business and to serve as the location of HARN's office. The rental rate is also reasonable and comparable to the rental prices of the space in nearby areas.</p>
	3.2 HARN receives employee benefits transfer from Harn Engineering <ul style="list-style-type: none"> • Other receivables 	1,747,319	<p>all employees' rights and obligations, and HARN Engineering agreed to accept the employee benefit obligations during the time of being employees of HARN Engineering until the date of transfer to HARN.</p> <p>From the purchase and acceptance of the entire business transfer of Chillmatch Co., Ltd. and its subsidiaries on November 29, 2016, it results in HARN taking over some additional rights in employee benefit debtors of HARN Engineering and the conditions of accepting the transfer of employees, which is the same as the transaction in the previous paragraph.</p> <p><u>Pricing:</u> The price is based on the independent expert's employee benefit obligation assessment.</p> <p><u>Trend of Future Transaction:</u> It is a continuous transaction because HARN has to record the change in employee benefits that change every year according to the conditions of transaction calculation.</p> <p><u>The Audit Committee's Opinion:</u> The transaction was caused by the personnel restructuring of HARN, resulting in the transfer of obligations and expenses related to the employees of HARN Engineering to HARN, which was considered a reasonable transaction.</p>
4. Phraboriban Co., Ltd. ("Phraboriban")	4.1 HARN rented a warehouse form Phraboriban <ul style="list-style-type: none"> • Security deposit for building rental • Office lease expense • Right-of-use assets • Lease liabilities 	150,000 93,678 1,302,794 1,338,259	<p><u>Warehouse Building Lease Agreement</u></p> <p>1. HARN agreed to pay the rent for the warehouse space for use as a place for goods storage, assembly, and maintenance of printers and equipment. The total area is 356.38 square meters with the rental rate of 64,080 baht per month, for the period from November 1, 2020 to October 31, 2023. The security deposit under the contract was placed in the amount of 150,000 baht.</p> <p><u>Pricing:</u> The market price by the rental rate is comparable to the rental price of nearby areas.</p> <p><u>Trend of Future Transaction:</u> It is the transaction to be continued and in line with the office building lease agreement.</p> <p><u>The Audit Committee's Opinion:</u> Such transaction is the rental of warehouse building space, which is necessary for the Company's business, and the rental rate is reasonable as the rental is comparable to the rental price of nearby areas.</p>
5. Jainnopsiri Co., Ltd. ("Jainnopsiri")	5.1 Sales <ul style="list-style-type: none"> • Revenue from Sales • Trade and other current receivables 	20,070 1,006	<p>List of products related to fire extinguishing system and refrigeration system and sales price set according to the sales policy.</p> <p><u>Office Building Rental Contract</u></p> <p>HARN agreed to lease and pay the rent for the office building no. 559 Soi Soonvijai 4, Rama 9 Road, Bang Kapi Subdistrict, Huai Khwang District, Bangkok, with a total area of 6,594 square meters at the rental rate of 130 baht per square meter per month or equal to 857,220 baht per month. The rent term under the lease contract started from January 1, 2021 to December 31, 2023 (3 years), and the lessor pledges to lease the building for another 7 years by increasing the rental rate by 10% every 3 years.</p>

Potential Conflicts	Type	As of December 31, 2021 (Unit : Baht)	Needed and Sensibility of Connected Transactions
	5.2 HARN rented an office from Jainnopsiri <ul style="list-style-type: none"> Interest expense Right-of-use assets Lease liabilities Security deposit for building rental 	2,168,929 92,182,855 102,425,395 2,000,000	<p>The said price is the rental rate close to the market price of renting office spaces with similar nature in nearby areas, which have a rental price of about 450 - 470 baht per square meter per month. The security deposit for renting the building under this contract was placed in the amount of 2,000,000 baht.</p> <p><u>Pricing:</u> The market price by the rental rate is comparable to the rental prices of nearby areas.</p> <p><u>Trend of Future Transaction:</u> It is the transaction to be continued and in line with the building lease contract.</p> <p><u>The Audit Committee's Opinion:</u> Such transaction is the space rental of the office building. The transaction is necessary to operate HARN's business and to serve as the location of HARN's office. The rental rate is also reasonable and comparable to the rental prices of the space in nearby areas.</p>
	5.3 HARN office space for lease <ul style="list-style-type: none"> Other income 	54,000	<p><u>Office Space Lease Agreement</u></p> <p>HARN has rented the office space at the office building no. 559 Soi Soonvijai 4, Rama 9 Road, Bang Kapi Subdistrict, Huai Khwang District, Bangkok, with a total area of 13.5 square meters at the rental rate of 500 baht per square meter per month or equal to 6,750 baht per month. The lease term starts from May 1, 2021, onwards. The said price is the rental rate close to the market price of the rental of office space of similar office buildings in nearby areas.</p>
6. Nutrix Public Company Limited ("Nutrix")	6.1 Sales 6.2 Trade and other current receivable	27,420 -	List of products related to digital printing system and sales price set according to the sales policy.
7. Aiyarafun Co., Ltd. ("Aiyarafun")	7.1 Interest expenses 7.2 Accrued interest 7.3 Short-term loans	7,808 7,808 500,000	Aiyaraharn Company Limited (a subsidiary of HARN) has taken on a short-term loan in the form of promissory notes from Aiyarafun Co., Ltd., valid for 3 months, in the amount of 500,000 baht, with interest at the rate of 3% (referring to the interest rate of commercial banks, MRR-3% per annum). The loan is an unsecured loan and is due for repayment on March 21, 2022. Items related to this short-term loan appear in the consolidated financial statements.

9.2.4 Policy Relating to Future Connected Transactions

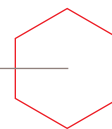
HARN expects to continue doing related party transactions from its normal business operation and in support of its normal business operation, i.e., rent of office building space and warehouse building and employee's benefit receivable. Moreover, HARN has no loan or facilities guarantee provided by the Boards' and/or loan security with the Boards' assets. Any related party transactions existing or those to take place in future will be subject to definite pricing policy with fair market prices and conditions and not resulting in transfer of benefits, and in the best interest of HARN. The Audit Committee shall review and give opinions on the related party transactions with general commercial conditions or in support of the normal business on a quarterly basis.

To enter into related party transactions in future, HARN shall comply with the securities and exchange law, provisions or notifications or stipulations of the Capital Market Supervisory Board and the Stock Exchange of Thailand, and abide by the regulations regarding disclosure of related party transaction information of HARN or Subsidiary according to the Thai Accounting Standards and Thai Financial Reporting Standards by the Federation of Accounting Professions under the Royal Patronage of His Majesty the King.

9.2.5 Appraisal Price for Related Transactions

- None -

Section 3



Financial Statements

Board of Directors' Responsibility on Financial Reports

The Board is responsible for the financial report of Harn Engineering Solutions Public Company Limited ("HARN") (previously known as Fire Victor Public Company Limited) and Subsidiary prepared in accordance with The Thai Accounting Standards and Thai Financial Reporting Standards under Accounting Act, B.E. 2543 (2000) and accounting interpretations and practices enforced by the Federation of Accounting Professions under the Royal Patronage of His Majesty the King, and pursuant to the regulations of the Securities and Exchange Commission (SEC) regarding preparation and presentation of financial report under the Securities and Exchange Act, taking into consideration appropriate and consistent accounting policies and accordance Financial Reporting Standards and based on careful judgments and reasonable reporting in the preparation of the financial report, as well as adequate and transparent disclosure of important information in the Notes to Financial Statements according to the Report of Independent Auditor, for the benefits of the shareholders and investors in general.

The Board has established and maintained good corporate governance and an effective risk management and internal control systems to assure that the accounting information is

correctly, completely and timely recorded, and adequate to sustain HARN assets and prevent any fraud and any material act of irregularities.

The Board has appointed an Audit Committee comprising Independent Directors to oversee and review the reliability and accuracy of the financial reports, the assessment of internal control, risk management and internal audit to ensure effectiveness. The Audit Committee opinions on these issues.

Details in Section 2 "8.2 Performance Report of the Audit Committee, page 124-125

The Board is of the opinion that the internal control and internal audit of HARN can give assurance that the financial statements of Harn Engineering Solutions Public Company Limited and Subsidiary for the year ended December 31, 2021 exhibit its financial position, operating results and cash flows accurately and appropriately in material aspects in accordance with the Thai Accounting Standards and Thai Financial Reporting Standards, and the audit of which has been performed by the Independent Auditor according to the auditing standards with opinion given unconditionally in the Report of Independent Auditor presented in this Annual Registration Statement / Annual Report 2021 (Form 56-1 One Report).

Dr. Thakol Nunthirapakorn

Chairman of the Board

Mr. Wirat Sukchai

Chief Executive Officer

Independent Auditor's Report

To The Shareholders and Board of Directors of
Harn Engineering Solutions Public Company Limited

Opinion

I have audited the consolidated financial statements of Harn Engineering Solutions Public Company Limited and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at December 31, 2021, and the consolidated statement of comprehensive income, consolidated statement of changes in shareholders' equity and consolidated statement of cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies, and I have audited the separate financial statements of Harn Engineering Solutions Public Company Limited (the Company), which comprise the statement of financial position as at December 31, 2021, and the statement of comprehensive income, statement of changes in shareholders' equity and statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In my opinion, the accompanying financial statements present fairly, in all material respects, the consolidated financial position of Harn Engineering Solutions Public Company Limited and its subsidiaries as at December 31, 2021, and its consolidated financial performance and its consolidated cash flows for the year then ended and the separate financial position of Harn Engineering Solutions Public Company Limited as at December 31, 2021, and its financial performance and its cash flows for the year then ended in accordance with Thai Financial Reporting Standards.

Basis for Opinion

I conducted my audit in accordance with Thai Standards on Auditing. My responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of my report. I am independent of the Group and the Company in accordance with the Federation of Accounting Professions Code of Ethics for Professional Accountants together with the ethical requirements that are relevant to my audit of the financial statements, and I have fulfilled my other ethical responsibilities in accordance with these requirements. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Emphasis of Matters

I draw attention to Note 2.5 to the financial statements. In the presentation of the financial statements for the year ended December 31, 2021, the Company has corrected the prior period's financial statements regarding the transactions recording related to share-based payments. The comparative information presented herewith has already been adjusted on such matter.

My opinion to the financial statements is not qualified in respect of these matters.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in my audit of the consolidated financial statements and separate financial statements of the current period. These matters were addressed in the context of my audit of the consolidated financial statements and separate financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

1) Recognition of revenue from sales and service

Risk

The Group and the Company had revenue from sales and service derived from five main business segments which are fire protection and projects, sanitary and air-conditioning systems, cold storage devices digital printing system and building-IoT solutions, for the year ended December 31, 2021 amounting to Baht 1,025.98 million and Baht 1,011.62 million, respectively, which have different terms and pricing conditions, including revenue from services under the fire protection installation project and building-IoT solutions, amounting to Baht 63.70 million and Baht 58.76 million or 6.21% and 5.81% of the Group's and the Company's total revenue from sales and service, respectively. The estimate of a performance obligation under the project agreement has an effect on the revenue that the Group and the Company recognized over time, which it has to recognize by the measuring progress towards complete satisfaction of a performance obligation as at December 31, 2021. I have identified that accuracy and completeness of revenue recognition from sales and service carries significant risk and requires special attention in the audit. The Group and the Company had disclosed its accounting policy of revenue from sales and service recognition and detail of revenue from sales and service in the notes to the financial statement No. 3.16 and 26, respectively.

Risk response by auditor

My audit approach on such matter includes understanding the revenue recognition process and internal control related to the revenue recognition, reviewing the design and implementation of the internal control procedures for such matter, performing the operating effectiveness testing over the internal control procedures around revenue recognition process, and performing substantive testing which consists of examining terms and conditions of the sales and services agreements and examining the related supporting documents of those revenues, examining the supporting documents for the revenue from sales and services transactions that occurred during the year and near the end of the accounting period, examining credit notes issued after the end of the accounting period, and performing analytical review and test of detail relating to the revenue from sales and services.

2) Testing for impairment of goodwill

Risk

The Group and the Company had goodwill of Baht 334.67 million and Baht 334.67 million or 19.85% and 19.89% of total assets as at December 31, 2021, respectively, which is the goodwill arising from the acquisition and transfer of the entire business, which is the cold storage devices segment and digital printing system segment. The Group and the Company have to test goodwill for impairment annually in accordance with the Thai Financial Reporting Standards. The test of impairment is significant to the audit as the amount has materiality to the financial statements. In addition, the procedure of impairment testing by the management is complex and requires using considerable judgment as well as relying on assumptions, especially the estimates of future cash flows to be received and paid that are expected to generate from the continuing operation of the cash generating unit, and the use of appropriate discount rate in order to discount future cash flow which can change according to the economic conditions and market conditions in the future. The Group and the Company have disclosed goodwill in the notes to the financial statements No. 3.10 which describes the accounting policies and No.14 which describes the amount and key assumptions that may affect the impairment in the future.

Risk response by auditor

In my audit approach, I have considered the reasonableness of the assumptions and methods used by the management in calculating the estimates of future cash flows to be received and paid that are expected to be generated by auditing the supporting evidence which presents the best estimate of the management, especially on the revenue forecast and gross profit and profit from operation of the business segments of the Company, the use of appropriate discount rate to discount future cash flow, as well as testing the calculation of the recovery amount. In addition, I have paid attention on the adequacy of the information disclosure relating to the assumptions which are most sensitive that may affect the testing result of impairment and has significant effect on the measurement of recovery amount of goodwill.

Other Information

Management is responsible for the other information. The other information comprises the information included in the annual report, but does not include the financial statements and my auditor's report thereon. The annual report is expected to be made available to me after the date of this auditor's report.

My opinion on the financial statements does not cover the other information and I will not express any form of assurance conclusion thereon.

In connection with my audit of the financial statements, my responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the financial statements or my knowledge obtained in the audit, or otherwise appears to be materially misstated.

When I read the annual report, if I conclude that there is a material misstatement therein, I am required to communicate the matter to those charged with governance in order for those charged with governance to correct the misstatement.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements and separate financial statements in accordance with Thai Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements and separate financial statements, management is responsible for assessing the Group's and the Company's ability to continue as a going concern, disclosing, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group and the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's and the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

My objectives are to obtain reasonable assurance about whether the consolidated financial statements and separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Thai Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and separate financial statements.

As part of an audit in accordance with Thai Standards on Auditing, I exercise professional judgment and maintain professional skepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and separate financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Company's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Company's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the consolidated financial statements and separate financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group and the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements and separate financial statements, including the disclosures, and whether the consolidated financial statements and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, I determine those matters that were of most significance in the audit of the consolidated financial statements and separate financial statements of the current period and are therefore the key audit matters. I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner responsible for the audit resulting in this independent auditor's report is Mr. Thanawut Piboonsawat.



(Mr. Thanawut Piboonsawat)

Certified Public Accountant

Registration No. 6699

Dharmniti Auditing Company Limited

Bangkok, Thailand

February 25, 2022

Financial Statement

HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES STATEMENT OF FINANCIAL POSITION AS AT DECEMBER 31, 2021

		<u>ASSETS</u>			
		Baht			
		Consolidated financial statements		Separate financial statements	
		2021	2020	2021	2020
			(Restated)		(Restated)
Note					
CURRENT ASSETS					
Cash and cash equivalents	5	242,830,421	306,074,340	237,687,826	299,318,282
Trade and other current receivables	4.4, 6	255,438,587	250,986,608	253,139,212	250,372,389
Current contract assets	7	10,215,840	12,797,613	8,316,793	12,054,033
Short-term loans to related subsidiary	4.4	-	-	-	5,973,480
Inventories	8	328,295,971	257,851,968	325,990,471	254,155,366
Other current financial assets	9	39,614,195	6,957,944	39,614,195	6,957,944
Other current assets		1,306,314	399,582	1,113,274	342,083
TOTAL CURRENT ASSETS		877,701,328	835,068,055	865,861,771	829,173,577
NON-CURRENT ASSETS					
Investment in subsidiaries	10	-	-	2,357,444	2,357,444
Trade and other non-current receivables	6	9,182,927	11,251,986	9,182,927	11,251,986
Long-term loans to subsidiary	4.4	-	-	6,649,380	-
Investment property	11	153,942,681	154,591,332	153,942,681	154,591,332
Property, plant and equipment	12	135,775,492	129,528,171	135,659,285	129,411,048
Right-of-use assets	13	94,253,682	104,968,304	94,253,682	104,968,304
Goodwill	14	334,672,061	334,672,061	334,672,061	334,672,061
Customer relationship	15	26,477,794	40,332,654	26,477,794	40,332,654
Intangible assets	16	15,985,010	18,015,510	15,985,010	18,015,510
Deferred tax assets	17	9,425,953	4,589,612	9,389,839	4,572,978
Other non-current assets	4.4	28,306,373	25,186,460	28,306,373	25,186,460
TOTAL NON-CURRENT ASSETS		808,021,973	823,136,090	816,876,476	825,359,777
TOTAL ASSETS		1,685,723,301	1,658,204,145	1,682,738,247	1,654,533,354

HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF FINANCIAL POSITION (CONT.)
AS AT DECEMBER 31, 2021

LIABILITIES AND SHAREHOLDERS' EQUITY

		Baht			
		Consolidated financial statements		Separate financial statements	
	Note	2021	2020	2021	2020
CURRENT LIABILITIES					
Trade and other current payables	4.4, 18	203,950,149	167,659,996	202,279,112	164,045,038
Current portion of lease liabilities	4.4, 19	9,055,775	8,918,127	9,055,775	8,918,127
Short-term loan from related party	4.4	500,000	-	-	-
Corporate income tax payable		8,703,941	11,101,390	8,574,701	11,096,112
Other current provisions		2,097,485	1,750,320	2,097,485	1,750,320
Other current liabilities		1,410,913	1,644,589	1,410,913	1,644,589
TOTAL CURRENT LIABILITIES		225,718,263	191,074,422	223,417,986	187,454,186
NON-CURRENT LIABILITIES					
Lease liabilities	4.4, 19	87,382,191	96,052,606	87,382,191	96,052,606
Deferred tax liabilities	17	54,146	-	-	-
Non-current provisions for employee benefit	20	27,968,095	27,765,012	27,792,471	27,684,826
Other non-current liabilities		26,067,217	24,937,360	26,067,217	24,937,360
TOTAL NON-CURRENT LIABILITIES		141,471,649	148,754,978	141,241,879	148,674,792
TOTAL LIABILITIES		367,189,912	339,829,400	364,659,865	336,128,978
SHAREHOLDERS' EQUITY					
Share capital					
Authorized share capital					
584,500,000 ordinary shares of Baht 0.50 each		292,250,000	292,250,000	292,250,000	292,250,000
Issued and paid-up share capital					
584,500,000 ordinary shares of Baht 0.50 each		292,250,000	292,250,000	292,250,000	292,250,000
Share premium on ordinary shares	21	776,416,427	776,416,427	776,416,427	776,416,427
Surplus on share-based payment transaction	22	6,396,379	3,732,848	6,396,379	3,732,848
Retained earnings					
Appropriated					
Legal reserve	23	29,225,000	29,225,000	29,225,000	29,225,000
Unappropriated		213,716,829	216,598,102	213,790,576	216,780,101
Other components of shareholders' equity		(38,218)	(453,897)	-	-
TOTAL EQUITY ATTRIBUTABLE TO OWNERS OF THE PARENT					
		1,317,966,417	1,317,768,480	1,318,078,382	1,318,404,376
Non-controlling interest		566,972	606,265	-	-
TOTAL SHAREHOLDERS' EQUITY		1,318,533,389	1,318,374,745	1,318,078,382	1,318,404,376
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY		1,685,723,301	1,658,204,145	1,682,738,247	1,654,533,354

HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF COMPREHENSIVE INCOME
FOR THE YEAR ENDED DECEMBER 31, 2021

	Note	Baht			
		Consolidated financial statements		Separate financial statements	
		2021	2020 (Restated)	2021	2020 (Restated)
Revenues					
Revenues from sales	4.5	909,158,785	1,014,298,968	900,779,895	991,018,544
Revenue from rendering of services		116,823,737	138,026,608	110,838,266	133,939,773
Other income	4.5	20,149,943	17,100,899	21,186,787	16,930,894
Total revenues		1,046,132,465	1,169,426,475	1,032,804,948	1,141,889,211
Expenses					
Cost of sales		615,614,286	680,396,833	610,358,286	659,444,376
Cost of rendering of services		98,091,231	119,433,303	93,748,136	115,851,556
Distribution cost		107,571,584	108,689,563	105,425,962	107,445,685
Administrative expenses	4.5	132,500,700	139,105,101	131,158,613	138,030,922
Total expenses		953,777,801	1,047,624,800	940,690,997	1,020,772,539
Profit from operating activities		92,354,664	121,801,675	92,113,951	121,116,672
Finance cost	4.5	2,309,545	90,655	2,301,737	90,655
Profit before tax expenses		90,045,119	121,711,020	89,812,214	121,026,017
Tax expenses	28	17,813,273	23,821,695	17,649,327	23,833,054
Profit for the year		72,231,846	97,889,325	72,162,887	97,192,963
Other comprehensive income					
Components of other comprehensive income that will be reclassified to profit or loss:					
Exchange differences on translating financial statement		415,679	(400,233)	-	-
		415,679	(400,233)	-	-
Components of other comprehensive income that will not be reclassified to profit or loss:					
Gains (losses) on re-measurements of defined benefit plans, net of tax	20	832,146	-	832,146	-
		832,146	-	832,146	-
Other comprehensive income (expense) for the year, net of tax		1,247,825	(400,233)	832,146	-
Total comprehensive income for the year		73,479,671	97,489,092	72,995,033	97,192,963
Profit attributable to					
Owners of the parent		72,271,139	97,983,060	72,162,887	97,192,963
Non-controlling interest		(39,293)	(93,735)	-	-
		72,231,846	97,889,325	72,162,887	97,192,963
Total comprehensive income attributable to					
Owners of the parent		73,518,964	97,582,827	72,995,033	97,192,963
Non-controlling interest		(39,293)	(93,735)	-	-
		73,479,671	97,489,092	72,995,033	97,192,963
Basic earnings per share	29				
Profit attributable to owners of the parent		0.12	0.17	0.12	0.17
Weighted average number of ordinary shares (shares)		584,500,000	584,500,000	584,500,000	584,500,000

THARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
FOR THE YEAR ENDED DECEMBER 31, 2021

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HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY (CONT.)
FOR THE YEAR ENDED DECEMBER 31, 2021

		Baht					
		Separate financial statements					
Note		Issued and paid-up share capital	Premium on ordinary shares	Surplus on share-based payment transactions	Retained earnings		Total shareholders' equity
					Appropriated legal reserve	Unappropriated	
	Beginning balance as at January 1, 2020	292,250,000	776,416,427	-	29,225,000	224,796,706	1,322,688,133
	Dividend	-	-	-	-	(105,209,568)	(105,209,568)
	Employee joint investment program expenses	-	-	6,602,402	-	-	6,602,402
	Treasury shares	-	-	(2,869,554)	-	-	(2,869,554)
	Total comprehensive income for the year	-	-	-	-	-	-
	Profit for the year - as restated	-	-	-	-	97,192,962	97,192,962
	Ending balance as at December 31, 2020	292,250,000	776,416,427	3,732,848	29,225,000	216,780,101	1,318,404,376
	Beginning balance as at January 1, 2021	292,250,000	776,416,427	-	29,225,000	219,766,379	1,317,657,806
2.5	- as previously reported	-	-	-	-	(2,986,278)	746,570
	The cumulative effect of the correction of the financial statements	-	-	3,732,848	-	-	-
	Beginning balance as at January 1, 2021	292,250,000	776,416,427	3,732,848	29,225,000	216,780,101	1,318,404,376
	- as restated	-	-	-	-	(75,984,558)	(75,984,558)
	Dividend	-	-	-	-	-	-
	Employee joint investment program expenses	-	-	7,219,655	-	-	7,219,655
	Treasury shares	-	-	(4,556,124)	-	-	(4,556,124)
	Total comprehensive income for the year	-	-	-	-	-	-
	Profit for the year	-	-	-	-	72,162,887	72,162,887
	Other comprehensive income for the year	-	-	-	-	832,146	832,146
	Ending balance as at December 31, 2021	292,250,000	776,416,427	6,396,379	29,225,000	213,790,576	1,318,078,382

HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES

STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED DECEMBER 31, 2021

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
		(Restated)		(Restated)
Cash flows from operating activities				
Profit for the year	72,231,846	97,889,325	72,162,887	97,192,963
Adjustment to reconcile profit for the year to				
net cash provided by (used in) operating activities :				
Bad debt and expected credit losses	2,813,895	4,253,118	2,807,363	4,250,132
Depreciation and amortization	30,165,663	17,050,943	30,137,178	17,038,325
Amortization of customer relationship	13,854,860	17,947,159	13,854,860	17,947,159
Loss on devaluation of inventories	3,922,061	5,673,101	3,922,061	5,673,101
(Gain) loss on disposals of equipment and right-of-use assets	265,927	1,255,393	265,927	1,255,393
Unrealized (gain) loss on exchange rate	(1,464,834)	(333,095)	(1,615,513)	(41,531)
(Gain) loss on disposals of investment	-	(3,380,909)	-	(3,380,909)
Unrealized (gain) loss on revaluation of				
other current financial assets	(2,860,366)	4,430,330	(2,860,366)	4,430,330
Loss on impairment of other non-current financial assets	-	241,845	-	241,845
Loss on impairment of equipments (reversal)	(50,654)	50,654	(50,654)	50,654
Interest income	(182,520)	(959,594)	(570,968)	(1,255,502)
Employee's benefit expenses	1,907,265	2,651,166	1,811,828	2,570,980
Employee Joint Investment Program expenses	7,219,655	6,602,402	7,219,655	6,602,402
Finance cost	2,309,545	90,655	2,301,737	90,655
Tax expense	17,813,274	23,821,695	17,649,328	23,833,054
Profit from operating before changes in operating assets and liabilities	147,945,617	177,284,188	147,035,323	176,499,051
(Increase) decrease in operating assets				
Trade and other current receivables	(4,826,091)	67,964,781	(3,491,121)	68,360,442
Current contract assets	2,583,100	(3,256,681)	3,741,762	(2,513,101)
Inventories	(78,311,067)	20,744,512	(79,702,169)	22,183,741
Other current assets	(906,731)	327,034	(771,191)	80,643
Other non-current assets	(3,119,913)	(1,517,468)	(3,119,913)	(1,517,468)
Increase (decrease) in operating liabilities				
Trade and other current payables	34,062,382	(35,575,947)	36,409,853	(28,993,514)
Other current provisions	347,165	294,585	347,165	294,585
Other current liabilities	(233,675)	531,330	(233,675)	531,330
Non-current provisions for employee benefit	(664,000)	(400,000)	(664,000)	(400,000)
Other non-current liabilities	1,129,856	1,573,164	1,129,856	1,573,164
Cash generated from operating	98,006,643	227,969,498	100,681,890	236,098,873
Employee joint investment program expenses paid	(4,556,124)	(2,869,554)	(4,556,124)	(2,869,554)
Income tax paid	(25,200,914)	(40,659,717)	(25,195,635)	(40,659,717)
Net cash provided by operating activities	68,249,605	184,440,227	70,930,131	192,569,602

HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF CASH FLOWS (CONT.)
FOR THE YEAR ENDED DECEMBER 31, 2021

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020 (Restated)	2021	2020 (Restated)
Cash flows from investing activities				
Cash payments for purchases of other current financial assets	(29,795,885)	-	(29,795,885)	-
Cash receipts from redemption of other current financial assets	-	116,885,007	-	116,885,007
Cash payments for short-term loans	-	-	-	(6,352,000)
Cash payment for acquisition of investment in subsidiary	-	-	-	(1,300,000)
Cash payments for purchases of equipment	(14,095,266)	(16,808,367)	(14,072,892)	(16,679,091)
Cash receipts from disposal of equipment	171,199	237,573	171,199	237,573
Cash payments for purchases of intangible assets	(2,153,440)	(763,437)	(2,153,440)	(763,437)
Interest received	182,521	545,145	552,489	545,145
Net cash provided by (used in) investing activities	(45,690,871)	100,095,921	(45,298,529)	92,573,197
Cash flows from financing activities				
Cash payments for lease liabilities	(11,277,500)	(738,630)	(11,277,500)	(738,630)
Cash receipt from short-term loans	500,000	-	-	-
Cash receipts from investments in subsidiary of non-controlling interest	-	700,000	-	-
Dividend paid	(75,984,558)	(105,209,568)	(75,984,558)	(105,209,568)
Net cash used in financing activities	(86,762,058)	(105,248,198)	(87,262,058)	(105,948,198)
Net increase (decrease) in cash and cash equivalents	(64,203,324)	179,287,950	(61,630,456)	179,194,601
Cash and cash equivalents at beginning of year	306,074,340	127,099,721	299,318,282	120,123,681
Effect of translation adjustment on foreign currency financial statements	959,405	(313,331)	-	-
Cash and cash equivalents at end of year	242,830,421	306,074,340	237,687,826	299,318,282
Supplementally disclosures of cash flows information :				
Non-Cash transaction				
1) Liabilities incurred from acquisition of equipment and intangible assets				
Liabilities incurred from acquisition of equipment and intangible assets - beginning of year	630,517	475,280	630,517	475,280
Inventories transferred to equipment	(3,945,002)	(20,770,275)	(3,945,002)	(20,770,275)
Equipment transferred to expense	(606,987)	(52,982)	(606,987)	(52,982)
Add Purchases of equipment and intangible assets	23,564,478	38,550,298	23,542,104	38,421,022
Less Cash payments	(16,248,706)	(17,571,804)	(16,226,332)	(17,442,528)
Liabilities incurred from acquisition of fixed assets and intangible assets - ending of year	3,394,300	630,517	3,394,300	630,517
2) Transfer investment property to be used as property, plant and equipment				
Increase (decrease) in investment property	-	74,129,902	-	74,129,902
Increase (decrease) in property, plant and equipment	-	(74,129,902)	-	(74,129,902)

Notes to the Financial Statements

HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES

NOTES TO THE FINANCIAL STATEMENTS

DECEMBER 31, 2021

1. GENERAL INFORMATION

(a) Legal status and address of the company group

Company

The Company was registered to be a limited company with the Ministry of Commerce on May 9, 2001.

The Company has changed its status to be public company limited for trading their shares on the Stock Exchange of Thailand on May 22, 2014.

The address of its registered head office are as follows:

Locate at: 559 Soi Soonvijai 4, Rama 9 Road, Bangkapi, Huaykwang, Bangkok 10310, Thailand.

Subsidiaries

- 1) Harn Vietnam Company Limited is a company established in Vietnam on July 30, 2019.

The address of the subsidiary's head office is as follows:

5th floor, Vietcomreal Building, 68 Nguyen Hue, Ben Nghe Ward, District 1, Ho Chi Minh City, Vietnam

- 2) Aiyaraham Company Limited is a company established in Thailand on July 8, 2020.

The address of the subsidiary's head office is as follows:

Locate at: 559 Soi Soonvijai 4, Rama 9 Road, Bangkapi, Huaykwang, Bangkok 10310, Thailand.

(b) Nature of the Company's operations

The principal business is involved in wholesaling, retailing, and repairing, renting, leasing, contracting and installation services of fire protection system and fire suppression agent, trading cold storage devices, trading, repairing and renting of printing equipment.

The subsidiary 1 operates the main business related to the selling of printing equipment and subsidiary 2 operates in providing Smart Building Business Solution.

(c) Coronavirus disease 2019 pandemic

The Coronavirus disease 2019 pandemic is continuing to evolve, resulting in an economic slowdown and adversely impacting businesses and industries as a whole. This situation may affect the results of operations of business. Nevertheless, the management of the Company and its subsidiaries have continuously monitored ongoing developments and regularly assess the financial impact in respect of the valuation of assets, provisions and contingent liabilities.

2. BASIS FOR THE PREPARATION OF FINANCIAL STATEMENTS

2.1 Basis for the preparation of financial statements

The financial statements have been prepared in accordance with the accounting standards prescribed by Thai Accounts Act enunciated under the Accounting Profession Act B.E. 2547 by complying with the Thai Financial Reporting Standards. The presentation of the financial statements has been made in compliance with the Notification of the Department of Business Development, the Ministry of Commerce, re: the financial statements presentation for public limited company, issued under the Accounting Act B.E. 2543.

The financial statements have been prepared on a historical cost basis except where otherwise disclosed in the accounting policies.

The financial statements in Thai language are the official statutory financial statement of the Company. The financial statements in English language have been translated from such financial statement in Thai language.

2.2 Basis for the preparation of consolidated financial statements

2.2.1 The consolidated financial statements have included the financial statements of Harn Engineering Solutions Public Company Limited and its subsidiaries as follows;

Company name	Type of business	% of share capital		Country of establishment
		2021	2020	
Direct shareholding				
Harn Vietnam Co., Ltd.	Printing equipment	100.00	100.00	Vietnam
Aiyaraharn Co., Ltd.	Building-IoT Solutions	65.00	65.00	Thailand

The Company had purchased the investment in Harn Vietnam Co., Ltd. at 100% of total number of shared issued from such company and the Company has consolidated the financial statements in the preparation of consolidated financial statements of the group of the company from July 30, 2019, onwards.

The Company jointly invested in establishing "Aiyaraharn Co., Ltd." The Company and joint investor hold 65 percent and 35 percent stake of the total shares issued in such company, respectively. Therefore, the Company has consolidated the financial statements of such in the preparation of consolidated financial statements of the group of the company from July 8, 2020 onwards.

2.2.2 The Company is deemed to have control over an investee or subsidiary if it has rights, or is exposed, to variable returns from its involvement with the investee, and it has the ability to direct the activities that affect the amount of its returns.

2.2.3 Subsidiaries is fully consolidated, being the date on which the Company obtains control, and continue to be consolidated until the date when such control ceases.

2.2.4 The financial statements of an overseas subsidiaries is translated into Thai Baht at the closing exchange rate as to assets and liabilities, and at monthly average exchange rates as to revenues and expenses. The resultant differences have been shown under the caption of "Currency translation changes of the financial statements of foreign entity" in shareholders' equity.

2.2.5 The consolidated financial statements are prepared by using uniform accounting policies. So that the transaction and the others event which are the same or the similar circumstances have been used the identical policies to record those transaction.

2.2.6 Material balances and transactions between the Company and its subsidiaries companies have been eliminated from the consolidated financial statements.

2.3 Financial reporting standards that became effective in the current year

During the year, the Company and its subsidiaries have adopted the revised financial reporting standards and interpretations which are effective for fiscal years beginning on or after January 1, 2021. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards with most of the changes directed towards clarifying accounting treatment and providing accounting guidance for users of the standards.

The adoption of these financial reporting standards does not have any significant impact on the financial statements in the current year.

2.4 Financial reporting standards that will become effective in the future

The Federation of Accounting Professions has issued several revised financial reporting standards and has been published in the Government Gazette, which are effective for fiscal years beginning on or after 1 January 2022. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards with most of the changes directed towards clarifying accounting treatment and for some financial reporting standards, providing temporary reliefs or temporary exemptions for users.

The management of the Company and its subsidiaries have assessed that these revised standards will not have any significant impact on the financial statements in the year when they are adopted.

2.5 Correction of the prior period's financial statements

In the presentation of the financial statements for the year ended December 31, 2021, the Company amended the previous period's financial statements regarding the transactions recording related to the Employee Joint Investment Program (EJIP) (Note 22) in accordance with the Thai Financial Reporting Standard No. 2 Subject: Share-Based Payments. Previously, the Company recorded such transactions as expenses in profit and loss according to the amount paid in each period.

This TFRS requires the Company to recognize share-based payments to employees in its financial statements, whether the payment is in cash, other assets or equity instruments of the entity. The Company has restated the prior year's financial statements, presented as comparative information, as though the Company had always recognized the effects of share-based payments to employees in the financial statements. The Company has restated to the transactions with effects on the consolidated financial statements and separate financial statements as follows:

• Statement of financial position

	Baht					
	Consolidated financial statements			Separate financial statements		
	As at December 31, 2020			As at December 31, 2020		
	Previous report	Adjustment increase (decrease)	Restated	Previous report	Adjustment increase (decrease)	Restated
Assets						
Deferred tax assets	3,843,042	746,570	4,589,612	3,826,408	746,570	4,572,978
Shareholders' equity						
Surplus on share-based payment transaction	-	3,732,848	3,732,848	-	3,732,848	3,732,848
Retained earnings - unappropriated	219,584,380	(2,986,278)	216,598,102	219,766,379	(2,986,278)	216,780,101

• Statement of comprehensive income

	Baht					
	Consolidated financial statements			Separate financial statements		
	For the year ended December 31, 2020			For the year ended December 31, 2020		
	Previous report	Adjustment increase (decrease)	Restated	Previous report	Adjustment increase (decrease)	Restated
Expenses						
Cost of rendering of services	118,879,312	553,991	119,433,303	115,297,565	553,991	115,851,556
Distribution cost	107,327,727	1,361,836	108,689,563	106,083,849	1,361,836	107,445,685
Administrative expenses	137,288,080	1,817,021	139,105,101	136,213,901	1,817,021	138,030,922
Tax expenses	24,568,265	(746,570)	23,821,695	24,579,624	(746,570)	23,833,054
Profit attributable to						
Owners of the parent	100,969,338	(2,986,278)	97,983,060	100,179,241	(2,986,278)	97,192,963
Total comprehensive income attributable to						
Owners of the parent	100,569,105	(2,986,278)	97,582,827	100,179,241	(2,986,278)	97,192,963

● Statement of cash flows

	Baht					
	Consolidated financial statements			Separate financial statements		
	For the year ended December 31, 2020			For the year ended December 31, 2020		
	Previous report	Adjustment increase (decrease)	Restated	Previous report	Adjustment increase (decrease)	Restated
Cash flows from operating activities						
Profit for the year	100,875,603	(2,986,278)	97,889,325	100,179,241	(2,986,278)	97,192,963
Adjustment to reconcile profit for the year to net cash provided by (used in) operating activities:						
- Employee joint investment program expenses	-	6,602,402	6,602,402	-	6,602,402	6,602,402
- Tax expenses	24,568,265	(746,570)	23,821,695	24,579,624	(746,570)	23,833,054
Employee joint investment program expenses paid	-	(2,869,554)	(2,869,554)	-	(2,869,554)	(2,869,554)

3. SIGNIFICANT ACCOUNTING POLICIES

3.1 Business combinations

The Company and its subsidiaries applies the acquisition method for all business combinations except for the business combination under common control.

The Company's and its subsidiaries's control are achieved when the Company (1) has power over the investee (2) is exposed, or has rights, to variable returns from its involvement with the investee and (3) has the ability to use its power to affect its returns.

The Company reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control listed above.

Goodwill is measured as the fair value of the consideration transferred including the recognized amount of any non-controlling interest in the acquiree, less the net recognized amount (generally fair value) of the identifiable assets acquired and liabilities assumed, all measured as of the acquisition date.

Consideration transferred includes the fair values of the assets transferred, liabilities incurred by the Company and its subsidiaries to the previous owners of the acquiree, and equity interests issued by the Company and its subsidiaries. Consideration transferred also includes the fair value of any contingent consideration and share-based payment awards of the acquiree that are replaced mandatorily in the business combination.

A contingent liability of the acquiree is assumed in a business combination only if such a liability represents a present obligation and arises from a past event, and its fair value can be measured reliably.

The Company and its subsidiaries measures any non-controlling interest at its proportionate interest in the identifiable net assets of the acquiree.

Transaction costs that the Company and its subsidiaries incurs in connection with a business combination, such as legal fees, and other professional and consulting fees are expensed as incurred.

3.2 Foreign currencies

Transactions in foreign currencies

Transactions in foreign currencies are translated to Thai Baht at the foreign exchange rates ruling at the dates of the transactions.

Monetary assets and liabilities denominated in foreign currencies at the reporting date are translated to Thai Baht at the foreign exchange rates ruling at that date. Foreign exchange differences arising on translation are recognized as profit or loss in statement of profit or loss and other comprehensive income.

Non-monetary assets and liabilities measured at cost in foreign currencies are translated to Thai Baht using the foreign exchange rates ruling at the dates of the transactions.

3.3 Financial instruments

Classification and measurement of financial assets

Financial assets are classified, at initial recognition, as to be subsequently measured at amortized cost, fair value through other comprehensive income, or fair value through profit or loss. The classification of financial assets at initial recognition is driven by the Company and its subsidiaries' business model for managing the financial assets and the contractual cash flows characteristics of the financial assets.

Equity instruments can be classified and cannot be changed by two types of measurement which are measuring fair value through profit or loss or measuring fair value through other comprehensive income that without recycling to profit or loss.

The initial recognition of financial assets that are not measured at fair value through profit or loss with fair value plus or deduct transaction cost directly related to the acquisition or issuance. Financial assets that are measured at fair value through profit or loss, transaction costs are recognized as expense in profit or loss.

Subsequent measurement of debt instruments by 3 methods depend on the classification of debt instruments.

- Financial assets measured at amortized cost when financial assets are held to receive cash flow under the agreement and condition of the agreement of the financial assets that generate cash flow to pay the principal and interest from the principal balance on the specified date only. Such financial assets have to be calculated using the effective rate and are subject to impairment assessment. Profit or loss arising from derecognized, modified or impaired will be recognized in profit or loss.
- Financial assets measured at fair value through other comprehensive income when financial assets are held to receive cash flow under the agreement and to sell financial assets and the agreement condition of financial assets generating cash flow that only pays the principal and interest from the principal balance on the specified date. The change of value of financial assets is recognized through other comprehensive income except loss on impairment and interest income and gain and loss on exchange rate are recognized as profit or loss upon recognized of financial assets. Earning or deficit previously recognized in other comprehensive income has to be reclassified into profit or loss. Such financial asset has to be calculated using the effective interest rate same as financial assets measured at amortized cost.
- Financial assets measured at fair value through profit or loss when financial assets that do not meet the criteria for amortized cost or financial assets measured at fair value through other comprehensive income will be presented in the statement of financial position at fair value by recognizing the net change of fair value in profit or loss.

Subsequent valuation of equity instruments must present equity instruments using the fair value and record profit/loss from change in fair value through profit or loss or other comprehensive income depending on equity instruments classification.

Classification and valuation of financial liabilities

The Company and its subsidiaries are recognized initially of financial liabilities at fair value net of transaction costs and classified as financial liabilities as financial liabilities subsequently measured at amortized cost using the effective rate. The amortized cost is calculated taking into account fees or costs that are an integral part of the effective rate. Amortization by the effective rate is presented as part of financial costs in profit or loss.

Derecognition of financial instruments

Financial assets will be derecognized from the account when the right to receive cash flow of such asset has ended or when the right to receive cash flow of the assets is transferred including upon the transfer of all risk and consideration of that asset or transfer of internal control in that asset although there is no transfer or maintaining of nearly all risk and consideration of such asset.

Financial liabilities will be derecognized from the account when the obligation of such liabilities has been complied, the obligation is cancelled or the obligation has ended. In case existing financial liabilities are changed to new liabilities from one single lender with considerably different requirements or there is a significant amendment in the requirements of existing liabilities, these are considered as recognition old liabilities and recognizing new liabilities by recognizing the difference of such carrying value under profit or loss.

Impairment of financial assets

Expected credit loss for financial assets measured at amortized cost or debt instrument financial asset measured at fair value through other comprehensive income and assets arising from credit facility obligation and financial guarantee agreement are assessed without having to wait for the credit event to occur first. The Company and its subsidiaries use the general approach in considering the allowance for loss on impairment. For trade receivables, the Company and its subsidiaries apply a simplified approach in calculating ECLs. The Company and its subsidiaries recognize a loss based on lifetime ECLs at each reporting date. It is based on its historical credit loss experience and adjusted for forward-looking factors specific to the debtors and the economic environment.

Offset of financial instruments

Financial assets and liabilities will be offset and presented at net balance in the statement of financial position in the case legally enforced in offsetting the recognized amount. The Company and its subsidiaries intend to pay the net balance or intends to receive assets and settle payment of liabilities at the same time.

Derivatives and hedging activities

Derivatives are initially recognized at fair value on the date a derivative contract is entered into and are subsequently remeasured to their fair value at the end of each reporting period. The accounting for subsequent changes in fair value depends on whether the derivative is designated as a hedging instrument in hedge accounting, and if so, the nature of the item being hedged. The Company and its subsidiaries designate certain derivatives as either:

- hedges of the fair value of recognised assets or liabilities or unrecognized firm commitments (fair value hedges);
- or
- hedges of a particular risk associated with the cash flows of recognized assets and liabilities and highly probable forecast transactions (cash flow hedges).

Derivatives that is not applied hedge accounting is classified as an asset or liability when the remaining maturity of the hedged item is more than 12 months; it is classified as a current asset or liability when the remaining maturity of the hedged item is less than 12 months.

Certain derivative instruments do not qualify for hedge accounting. Changes in the fair value of any derivative instrument that does not qualify for hedge accounting are recognised immediately in profit or loss and are included in other gains (losses).

Derivative financial instruments

Derivative financial instruments are used to manage exposure to foreign exchange, interest rate and product price risks arising from operational, financing and investment activities.

The Company and its subsidiary entered into forward foreign exchange contracts in asset and liability management activities to control exposure to fluctuations in foreign exchange rates.

Gains and losses on forward foreign exchange contracts designated as hedges of existing assets and liabilities without using hedge accounting are recognized as income or expense in the statement of profit or loss.

Amounts to be paid and received are offset in the statement of financial position and included in assets or liabilities category in the statement of financial position.

The Company and its subsidiary have no policy to speculate in or engage in the trading of any derivative financial instruments.

3.4 Cash and cash equivalents

Cash and cash equivalents are cash on hand, cash at banks and bank deposits with a maturity date less than 3 months excluded deposits at bank used as collateral and short-term investments with high liquidity.

3.5 Trade and other current receivables / current contract assets

Trade other current receivables / current contract assets are recognized initially at the amount of consideration that is unconditional unless they contain significant financing components, when they are recognized at its present value.

Trade other current receivables / current contract assets are stated at the amount expected to be collectible. The Company and its subsidiaries apply the TFRS 9 simplified approach to measuring expected credit losses which uses a simplified approach, which requires expected lifetime losses to be recognised from initial recognition of the receivables. To measure the expected credit losses, trade receivables have been grouped based on the days past due. The expected loss rates are based on the payment profiles and the corresponding historical credit losses which are adjusted to reflect the current and forward-looking information on macroeconomic factors affecting the ability of the customers to settle the receivables. The Company and its subsidiaries have identified the GDP, the unemployment rate and the consumer price index of the countries in which it sells its goods and services to be the most relevant factors, and accordingly adjusts the historical loss rates based on expected changes in these factors. The impairment losses are recognised in profit or loss within administrative expenses.

3.6 Inventories

Inventories are valued at the lower of cost or net realizable value.

Cost of inventories is calculated by weighted average method which comprises all costs of purchases, costs of conversion and other costs incurred in bringing the inventories to their present location and condition. In the case of manufactured inventories, cost includes an appropriate share of overhead based on normal operating capacity.

Net realizable value is the estimated selling price in the ordinary course of business less the costs to make the sale.

An allowance is made for all deteriorated, damaged, obsolete and slow-moving inventories.

3.7 Investments in subsidiaries

Subsidiaries is a company in which the Company has the power to control the financial and operating policies generally accompanying a shareholding of more than one-half of the voting rights.

Investment in subsidiaries is stated at cost net from allowance on impairment (if any). Loss on impairment of investment will be recognized as loss in the statement of comprehensive income.

3.8 Investment property

Investment property is stated at cost less accumulated depreciation and allowance on impairment (if any).

Depreciation is charged as an expense to the statement of profit or loss and other comprehensive income on a straight-line basis over the estimated useful lives of each property. The estimated useful lives are as follows:

	Years
Factory building	40
Building improvements	10
Tool and equipment	5

Depreciation is included in determining income and no depreciation is provided for construction in progress.

3.9 Property, plant and equipment

Recognition and measurement

Land is stated at cost, plant and equipment are stated at cost less accumulated depreciation and allowance on decline in value (if any).

Cost includes expenditure that is directly attributable to the acquisition of the asset. The cost of self-constructed assets includes the cost of materials and direct labor, any other costs directly attributable to bringing the assets to a working condition for their intended use as part of that property plant and equipment.

When parts of an item of plant and equipment have different useful lives, they are accounted for as separate items (major components) of equipment.

Gains or losses on disposal of an item of property plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of property plant and equipment, and are recognized net within other income or other expense in the statement of profit or loss and other comprehensive income.

Subsequent costs

The cost of replacing a part of an item of property plant and equipment are recognized in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Company and its subsidiaries, and its cost can be measured reliably. The carrying amount of the replaced part is derecognized. The costs of the day-to-day servicing of equipment are recognized as an expense in statement of profit or loss and other comprehensive income as incurred.

Depreciation

Depreciation is calculated based on the depreciable amount of plant and equipment, which are the cost of an asset, or other amount substituted for cost, less its residual value.

Depreciation is charged as an expense to the statement of profit or loss and other comprehensive income on a straight-line basis over the estimated useful lives of each property. The estimated useful lives are as follows:

	Years
Factory building	40
Building improvements	10
Tool and equipment	5
Furniture and office equipment	5
Vehicles	5 - 7
Assets for rental and demonstration	5 - 10

Depreciation is included in determining income and no depreciation is provided for construction in progress.

Depreciation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

3.10 Goodwill

Goodwill that arises upon the acquisition of subsidiaries is included in intangible assets. The measurement of goodwill at initial recognition is described. Subsequent to the initial recognition, goodwill is measured at cost less impairment loss. The Company and its subsidiaries assess an impairment of goodwill annually, without consideration of indication that such goodwill may be impaired.

3.11 Intangible asset

Other intangible assets

Other intangible asset, which are acquired by the Company and its subsidiaries and have finite useful lives, are stated at cost less accumulated amortization and allowance for impairment (if any).

Amortization

Amortization is recognized as an expense in the statement of profit or loss and other comprehensive income on a straight-line basis over the estimated useful lives of intangible asset, other than goodwill, from the date that they are available for use as follows:

	Years
Computer software	5 - 10
Customer relationship	7

Amortization methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

3.12 Impairment of assets

The carrying amounts of the Company's and its subsidiaries's assets are reviewed at each the reporting period date to determine whether there is any indication of impairment. If any such indication exists, the asset's recoverable amount is estimated. For goodwill and customer relationship, the recoverable amount is estimated each year at the same time.

An impairment loss is recognized whenever the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. The impairment loss is recognized as expense in the statements of profit or loss and other comprehensive income unless it reverses a previous revaluation credited to equity and subsequently occurs impairment, in which case it is charged to statement of other comprehensive income.

Calculation of recoverable amount

The recoverable amount is the greater of the assets' fair value less cost to sell or value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate cash inflows largely independent of those from other assets, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Reversals of impairment

An impairment loss in respect of financial assets is reversed if subsequent increase in recoverable amount and the recoverable amount can be related objectively to an event after the impairment loss was recognized as an expense in the statement of profit or loss and other comprehensive income.

An impairment loss in respect of goodwill is not reversed. Impairment losses recognized in prior periods in respect of other non-financial assets are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, as if no impairment loss had been recognized.

3.13 Share-based payment

The fair value of the shares as at grant date to the management and employees is recognized as employee expense along with the increase in shareholder's equity throughout the period that employee is able to access the rights without restriction. The amount recognized is expense to be adjusted to reflect the rights to purchase shares under the term of service that is not the term of equity market.

3.14 Leases

At inception of a contract, the Company and its subsidiaries assess whether the contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

The Company and its subsidiaries assess the lease term for the non-cancellable period as stipulated in lease contract or the remaining period of active leases at the date of initial application (as at January 1, 2020) together with any period covered by an option to extend the lease if it is reasonably certain to be exercised or any periods covered by an option to terminate the lease if it is reasonably certain not to be exercise by considering the effect of changes in technology and/or the other circumstance relating to the extension of the lease term.

Right-of-use assets-as a lessee

Right-of-use assets are recognized at the commencement date of the lease. Right-of-use assets are stated at cost, less any accumulated depreciation and impairment losses (if any), and adjusted for any remeasurement of lease liabilities (if any). The cost of right-of-use assets includes the amount of lease liabilities recognized, initial direct costs incurred, and lease payments made at or before the commencement date, less any lease incentives received.

The cost of right-of-use assets also includes an estimate of costs to be incurred by the lessee in dismantling and removing the underlying asset, restoring the site on which it is located or restoring the underlying asset to the condition required by the terms and conditions of the lease.

Right-of-use assets are calculated by reference to their costs on a straight-line basis over the shorter of the lease term and the estimated useful lives for each of right-of-use assets.

Lease liabilities

At the commencement date of the lease, lease liabilities are stated at the present value of lease payments to be made over the lease term. The lease payments include fixed payments (including in-substance fixed payments) less any lease incentives receivable (if any) and amount expected to be paid under residual value guarantees. The lease payments also include the exercise price of a purchase option reasonably certain to be exercised by the Company and its subsidiaries and payments of penalties for terminating the lease, if the lease term reflects the Company and its subsidiaries exercising the option to terminate.

In calculating the present value of lease payments, the Company and its subsidiaries use its incremental borrowing rate, which is determined by referring to the government bond yield adjusted with risk premium depending on the lease term, at the lease commencement date if the interest rate implicit in the lease is not readily determinable. After the commencement date, the amount of lease liabilities is increased to reflect the accretion of the interest and reduced for the lease payments made. In addition, the carrying amount of lease liabilities is remeasured if there is a modification, a change in the lease term, a change in the lease payments or a change in the assessment of an option to purchase the underlying asset.

Short-term leases and leases of low-value assets

The Company and its subsidiaries apply the short-term lease recognition exemption to its short-term leases (those leases that have a lease term of 12 months or less from the commencement date and not contain a purchase option). It also applies the lease of low-value assets recognition exemption to leases that are considered of low value. Lease payments on short-term and leases of low-value assets are recognized as expense in profit and loss on a straight-line basis over the lease term.

3.15 Employee benefits**Short-term benefits**

The Company and its subsidiaries are recognizes salaries, wages, bonus and social security contribution as expenses when incurred.

Post-employment benefits - defined contribution plan

The Company operates a provident fund that is a defined contribution plan. The assets of which are held in a separate trust fund. The provident fund is funded by payments from employees and the Company. Contributions to the provident fund and obligations under contribution plan are charged as an expense to the statement of comprehensive income in the period to which they relate.

Post-employment benefits - defined benefit plan

The employee benefits liabilities for severance payment as the labor law is recognized as an expense over the employee's service period. It is calculated by estimating the amount of future benefit earned by employees in return for service provided to the Company and its subsidiaries in the current and future periods, with such benefit being discounted to determine the present value. The reference point for setting the discount rate is the yield rate of government bonds as at the reporting date. The calculation is performed by actuarial technique using the Projected Unit Credit Method.

When the employee benefits are improved, the portion of the increased benefit relating to past service by employees is recognized in the statement of profit or loss and other comprehensive income on a straight-line basis over the average period until the benefits become vested.

When the actuarial assumptions are changed, the Company and its subsidiaries recognizes all actuarial gains (losses) immediately in other comprehensive income.

3.16 Revenues**Revenue from sale of goods**

Revenue from sale of goods is recognized at the point in time when control of the asset is transferred to the customer, generally on delivery of the goods. Revenue is measured at the amount of the consideration received or receivable, excluding value added tax, of goods supplied after deducting returns and discounts.

For sale with warranties to assure that the goods comply with agree-upon specifications, the Company recognized the warranty as provisions, contingent liabilities and contingent assets.

The service-type warranties provided customers with a service in addition to the assurance that the product complies with agree-upon specifications is recognized as revenue over the period in which the service is provided.

Revenue from rendering of services

Revenue from project services is recognized over time in accordance with the measuring progress towards complete satisfaction of a performance obligation, based on the costs incurred to the satisfaction of a performance obligation relative to the total expected costs to the satisfaction of that performance obligation. In some circumstances, the Company and its subsidiaries may not be able to reasonably measure the outcome of a performance obligation, but the Company and its subsidiaries expect to recover the costs incurred in satisfying the performance obligation. In those circumstances, the Company and its subsidiaries shall recognize revenue only to the extent of costs incurred until such time that it can reasonably measure the outcome of the performance obligation.

Revenue from providing maintenance service is recognized over time when services have been rendered considering the straight-line method over the term of the contracts.

Revenue from other service is recognized when services have been rendered.

The recognized revenue which is not yet due per the contracts has been presented as "Accrued service income /Unbilled receivables" in the statement of financial position, which is classified as trade receivables when the Company has right to receive without condition such as upon completion of services and acceptance by the customer.

Revenue from rental

Revenue from rental is recognized over time on a straight-line method over the term of the contracts.

Deferred revenue

The obligation to transfer goods or service to a customer for which the Company and its subsidiaries have received consideration or an amount of consideration is due from the customer is presented as "Deferred revenue" in the statement of financial position, which is classified as other payables under trade and other payable. Deferred revenue will be recognized as revenue when the Company completely perform the obligation stated in the contract.

Interest income and other income

Interest income is recognized in the statements of profit or loss and other comprehensive income on an accrual basis, based on the effective rate method.

Other income is recognized on an accrual basis.

3.17 Expenses

Expenses are recognized in the statement of profit or loss and other comprehensive income on an accrual basis.

3.18 Borrowing costs

Finance costs comprise interest expense on borrowings and contingent consideration.

Borrowing costs that are not directly attributable to the acquisition, construction or production of a qualifying asset are recognized in statement of profit or loss and other comprehensive income using the effective interest method.

3.19 Income tax

Income tax expense for the year comprises current and deferred tax.

Current and deferred tax are recognized as income or expense in the statements of profit or loss and other comprehensive income except to the extent that they relate to a business combination, or items recognized directly in shareholders' equity or in other comprehensive income.

Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted and any adjustment to tax payable in respect of previous years.

Deferred tax is recognized in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is not recognized for the following temporary differences: the initial recognition of goodwill; the initial recognition of assets or liabilities in a transaction in the consolidated financial statement that is not a business combination and that affects neither accounting nor taxable profit or loss; and differences relating to investments in subsidiaries and jointly-controlled entities to the extent that it is probable that they will not reverse in the foreseeable future.

Deferred tax is measured at the tax rates that are expected to be applied to the temporary differences when they reverse, using tax rates enacted or substantively enacted at the reporting date.

In determining the amount of current and deferred tax, the Company takes into account the impact of uncertain tax positions and whether additional taxes and interest may be due. The Company and its subsidiaries believe that its accruals for tax liabilities are adequate for all open tax years based on its assessment of many factors, including interpretations of tax law and prior experience. This assessment relies on estimates and assumptions and may involve a series of judgements about future events. New information may become available that causes the Company and its subsidiaries to change its judgement regarding the adequacy of existing tax liabilities; such changes to tax liabilities will impact tax expense in the period that such a determination is made.

Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax assets and liabilities, and they relate to income taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realized simultaneously.

A deferred tax asset is recognized to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilized. Deferred tax assets are reviewed at the end of reporting period date and reduced to the extent that it is no longer probable that the related tax benefit will be realized.

3.20 Basic earnings per share

The calculations of basic earnings per share for the year were based on the profit for the year attributable to equity holders divided by the weighted average number of ordinary shares held by outsiders outstanding during the year. The calculations of diluted earnings per share for the year were based on the weighted average number of ordinary shares on the assumption that all dilutive potential ordinary shares have been converted to ordinary shares.

3.21 Fair value measurements

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. In estimating the fair value of an asset or a liability, the Company takes into account the characteristics of the asset or liability if market participants would take those characteristics into account when pricing the asset or liability at the measurement date. Fair value for measurement and/or disclosure purposes in the financial statements is determined on such a basis.

In addition, fair value measurements are categorized into Level 1, 2 or 3 based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirety, which are described as follows:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the entity can access at the measurement date.
- Level 2 inputs are inputs, other than quoted prices included within Level 1, which are observable for the asset or liability, either directly or indirectly.
- Level 3 inputs are unobservable inputs for the asset or liability.

3.22 Use of management's critical judgements in applying accounting policies

(1) Use of management's critical judgements in applying accounting policies

The preparation of financial statements in conformity with generally accepted accounting principles requires the Company and its subsidiaries are management to exercise judgments in order to determine the accounting policies, estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the end of reporting period and the reported amounts of revenue and expense during the reporting period. Although these estimates are based on management's reasonable consideration of current events, actual results may differ from these estimates.

Critical judgments in applying accounting policies are as follows:

Impairment

The Company and its subsidiaries shall assess the assets balance at the statement of financial position whether there is any indication that an asset may be impaired. If any such indication exists, the Company and its subsidiaries are shall estimate the recoverable amount of the asset.

Allowance for doubtful accounts

In determining an allowance for doubtful accounts, the management needs to make judgement and estimates the expected credit loss based on the payment profiles and the corresponding historical credit losses which are adjusted to reflect the current and forward-looking information on macroeconomic factors affecting the ability of the customers to settle the receivables such as GDP, the unemployment rate and the consumer price index.

Allowance for declining in value of inventory

The determination of allowance for declining in the value of inventory, requires management to make judgements and estimates of the loss expected to occur. The allowance for decline in net realizable value is estimated based on the selling price expected in the ordinary course of business less selling expense. The provision for obsolete slow-moving and deteriorated inventory, is estimated based on the approximate useful life of each type of inventory. The allowance for diminution in value of inventory as determined is compared with the original balance in the books of account and the increase or decrease in the allowance for diminution in value of inventory will be recognized as cost of sales and service in profit or loss.

Estimated construction project costs

The Company and its subsidiaries estimates costs of construction projects based on details of the construction work, taking into account the volume and value of construction materials to be used in the project, labour costs and other miscellaneous costs to be incurred to completion of service, taking into account the direction of the movement in these costs. Estimates are reviewed regularly or whenever actual costs differ significantly from the figures used in the original estimates.

Provision for losses on project services contract

The Company and its subsidiaries have provision incurred from delay delivery. The management applies judgement in estimating the penalty based on contract rate and the period of delay project work. The Company and its subsidiaries have recorded provision for penalty from delay delivery in the financial statements. However, actual results could differ from the estimates.

Provision for penalty from delay delivery

The Company and its subsidiaries have provision incurred from delay delivery. The management applies judgement in estimating the penalty based on contract rate and the period of delay project work. The Company and its subsidiaries have recorded provision for penalty from delay delivery in the financial statements. However, actual results could differ from the estimates.

Determining the lease term of contracts with renewal and termination options

The Company and its subsidiaries determine the lease term as the non-cancellable term of the lease, together with any period covered by an option to extend the lease if it is reasonably certain to be exercised, or any periods covered by an option to terminate the lease, if it is reasonably certain not to be exercised. The management is required to use judgment in evaluating whether it is reasonably certain whether or not to exercise the option to renew or terminate the lease, considering all relevant factors that create an economic incentive to exercise either the renewal or termination. After the commencement date, the Company and its subsidiaries reassess the lease term if there is a significant event or change in circumstances that is within its control and affects its ability to exercise or not to exercise the option to renew or to terminate.

Investment property/Depreciation

In determining depreciation of investment property, the management is required to make estimates of the useful lives and residual values of the investment property and to review the useful lives and residual values when there are any changes.

In addition, the management is required to review investment property for impairment on a periodical basis and record the impairment loss when it is determined that the recoverable amount is lower than the carrying amount. This requires judgement regarding forecast of future revenues and expenses relating to the assets subject to the review.

In determining the fair value disclosure of investment property, the management used the income approach supported by current and previous valuations by an independent appraiser.

Property, plant and equipment and right-of-use assets/Depreciation

In determining depreciation of plant and equipment and right-of-use assets, the management is required to make estimates of the useful lives and residual values of the plant and equipment and to review the estimated useful lives and residual values when there are any changes.

In addition, the management is required to review property, plant and equipment and right-of-use assets, for impairment on a periodical basis and record the impairment loss when it is determined that the recoverable amount is lower than the carrying amount. This requires judgement regarding forecast of future revenues and expenses relating to the assets subject to the review.

Intangible assets

In recording the initial recognition and measurement of intangible assets as at the acquired date and subsequent impairment testing, the management is required to make estimates of cash flows to be generated by the asset or the cash generating units and to choose a suitable discount rate in order to calculate the present value of those cash flows.

Employee benefit obligations

The present value of the employee benefit obligations depends on a number of factors that are determined on an actuarial basis using a number of assumptions, including the discount rate. Any changes in these assumptions will have an impact on the carrying amount of such obligations.

The Company and its subsidiaries determines the appropriate discount rate at the end of each year. This is the interest rate that should be used to determine the present value of estimated future cash outflows expected to be required to settle the employee benefit obligations. In determining the appropriate discount rate, the Company and its subsidiaries are considers the market yield of government bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating the terms of the related obligations. Additional information is disclosed in Note 20.

Deferred tax assets

Deferred tax assets are recognized for deductible temporary differences and unused tax losses to the extent that it is probable that taxable profit will be available against which the temporary differences and losses can be utilized. Significant management judgement is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and level of estimated future taxable profits.

Estimating the incremental borrowing rate

The Company and its subsidiaries cannot readily determine the interest rate implicit of the lease. Therefore, the market rate of the Company and its subsidiaries are used to discount lease liabilities. The incremental borrowing rate is the rate of interest that the Company and its subsidiaries would have to pay for necessary borrowing to acquire the assets, or assets with close value to right-of-use assets in similar economic environment, borrowing period and borrowing security.

(2) Key sources of estimation uncertainty

Fair value measurements and valuation processes

In estimating the fair value of an asset or liability, the Company and its subsidiaries use market-observable data to the extent it is available. Where Level 1 inputs are not available, the Company and its subsidiaries engage qualified external values to perform the valuation to establish the appropriate valuation techniques and inputs to the model.

Information about valuation techniques and inputs used in determining the fair value of various assets and liabilities are disclosed in Note 31.

4. RELATED PARTY TRANSACTIONS

The Company and its subsidiaries had transactions with related parties. These parties were related through common shareholders and/or directorships or close member of family. The significant transactions with related parties as included in the financial statements are determined at the prices in line occurring in the normal course of business based on the market price in general or the price as stipulated in the agreement if no market price exists.

4.1 Types of relationship of related parties were as follows:

Company/Person name	Country/ Nationality	Related	Relationship
Harn Vietnam Co., Ltd.	Vietnam	Subsidiary	Major shareholder
Aiyaraharn Co., Ltd.	Thailand	Subsidiary	Major shareholder
Harn Engineering Co., Ltd.	Thailand	Related company	Directorships and/or common shareholders
Phraboriban Co., Ltd.	Thailand	Related company	Directorships and/or common shareholders
Nutrix Plc.	Thailand	Related company	Directorships and/or common shareholders
Jannopsiri Co., Ltd.	Thailand	Related company	Directorships and/or common shareholders
Aiyarafun Co., Ltd.	Thailand	Related company	Directorships and/or common shareholders of subsidiary
Throughwave (Thailand) Co., Ltd.	Thailand	Related company	Close members of the director's family (The director resigned effective from January 1, 2020)
Mr. Jain Charnnarong	Thai	Related person	Shareholder and close member of the director's family
Mrs. Sirima Iamsakulrat	Thai	Related person	Shareholder and close member of the director's family
Key management personnel	Thai	Related person	Authorized person and responsible in management

4.2 Bases of measurement for intercompany revenues and expenses

	Pricing Policy
Sale of goods	Market price
Purchase of goods	Market price
Purchase and sale of equipment and intangible asset	Contractually agreed prices
Other income	Contractually agreed prices
Rental and service expenses	Contractually agreed prices
Compensation to management	As approved by director and / or shareholder
Interest income	Contract price
Interest expenses	Market price

4.3 Significant agreements with related parties. The Company and its subsidiaries entered into office building rental agreement as follows:

	As at December 31, 2021		
	Lessor	Period	Rate per month (Baht)
Office rental agreement	Jannopsiri Co., Ltd.	9 year	857,220
	Phraboriban Co., Ltd.	3 year	64,080

During the year ended December 31, 2021, there were rental agreements that were cancelled had been shown as follows:

	Lessor	Period	Rate per month (Baht)
Warehouse rental agreement	Mr. Jain Charnnarong	4.4 year	45,947 - 53,100
	Harn Engineering Co., Ltd.	4.7 year	292,105 - 413,916

4.4 Balances with the related parties as at December 31, 2021 and 2020 consisted of:

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Trade and other current receivables				
Subsidiaries				
Harn Vietnam Co., Ltd.	-	-	314,388	295,908
Aiyaraharn Co., Ltd.	-	-	-	57,933
Related company				
Harn Engineering Co., Ltd.	1,747,794	1,845,458	1,747,794	1,845,458
Nutrix Plc.	-	15,716	-	15,716
Jannopsiri Co., Ltd.	1,006	118,342	1,006	118,342
	<u>1,748,800</u>	<u>1,979,516</u>	<u>2,063,188</u>	<u>2,333,357</u>
Rental deposit				
Related company				
Phraboriban Co., Ltd.	150,000	150,000	150,000	150,000
Jannopsiti Co., Ltd.	2,000,000	-	2,000,000	-
	<u>2,150,000</u>	<u>150,000</u>	<u>2,150,000</u>	<u>150,000</u>

Loan to subsidiary

Movements of loans to subsidiary for the year ended December 31, 2021 and 2020 were as follows:

	Separate financial statements			
	2021		2020	
	USD	Baht	USD	Baht
Harn Vietnam Co., Ltd.				
Beginning balance	200,000	5,973,480	-	-
Addition	-	-	200,000	6,352,000
Deduction	-	-	-	-
Conversion of unrealized on exchange rate	-	675,900	-	(378,520)
Ending balance	200,000	6,649,380	200,000	5,973,480

On March 12, 2020, the Company entered into loan agreement with the subsidiary in the amount of USD 200,000. The interest rate has been charged at 6.15% per annum in the term of year. Later, on March 11, 2021, the company renewed the loan agreement to the subsidiary for another 5 years, the agreement expired on March 11, 2026 and charged the interest rate at 5.85% per annum.

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Trade and other current payables				
Subsidiary				
Aiyaraharn Co., Ltd.	-	-	78,000	-
Related company				
Aiyarafun Co., Ltd.	7,808	-	-	-
	7,808	-	78,000	-
Lease liabilities				
Related company				
Phraboriban Co., Ltd.	1,388,259	2,013,542	1,388,259	2,013,542
Jansopsiri Co., Ltd.	94,307,684	102,425,395	94,307,684	102,425,395
	95,695,943	104,438,937	95,695,943	104,438,937

Short-term loans from related parties

Changes in short-term loans from related company the year ended December 31, 2021 were as follows:

Aiyarafun Co., Ltd.	Baht			
	Consolidated financial statements			
	As at December	During the year		As at December
	31, 2020	Increase	Decrease	31, 2021
	-	500,000	-	500,000
	-	500,000	-	500,000

As at December 31, 2021, short-term loan represented the promissory notes from related parties has 3 months maturity, bearing interest rates of 3 percent per annum (according to commercial bank interest rates of MRR-3 percent per annum). The loans are unsecured and repayment on March 21, 2022.

4.5 Transactions for the years ended December 31, 2021 and 2020 with related parties were summarized as follows:

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Sale of goods				
Subsidiaries				
Harn Vietnam Co., Ltd.	-	-	18,741	322,085
Aiyaraharn Co., Ltd.	-	-	74,940	-
Related companies				
Nutrix Plc.	27,420	117,384	27,420	117,384
Jannopsiri Co., Ltd.	20,070	248,607	20,070	248,607
	<u>47,490</u>	<u>365,991</u>	<u>141,171</u>	<u>688,076</u>
Other income				
Subsidiaries				
Harn Vietnam Co., Ltd.	-	-	393,275	295,908
Aiyaraharn Co., Ltd.	-	-	612,000	157,933
Related company				
Phraboriban Co., Ltd.	-	28,137	-	28,137
Jannopsiri Co., Ltd.	54,000	-	54,000	-
	<u>54,000</u>	<u>28,137</u>	<u>1,059,275</u>	<u>481,978</u>
Office rental and service expenses				
Related companies				
Harn Engineering Co., Ltd.	292,105	1,368,430	292,105	1,368,430
Phraboriban Co., Ltd.	-	1,432,510	-	1,432,510
Related person				
Mr. Jain Charnnarong	-	630,047	-	630,047
	<u>292,105</u>	<u>3,430,987</u>	<u>292,105</u>	<u>3,430,987</u>
Interest expenses				
Related company				
Phraboriban Co., Ltd.	93,678	88,177	93,678	88,177
Jannopsiri Co., Ltd.	2,168,929	-	2,168,929	-
Aiyarafun Co., Ltd.	7,808	-	-	-
	<u>2,270,415</u>	<u>88,177</u>	<u>2,262,607</u>	<u>88,177</u>
Directors remuneration				
Directors remuneration	3,473,167	3,585,000	3,473,167	3,585,000
Management benefit expenses				
Shot-term employee's benefits	9,972,130	10,790,267	9,252,130	10,490,267
Post-employment benefits	324,870	312,240	321,470	310,640
	<u>13,770,167</u>	<u>14,687,507</u>	<u>13,046,767</u>	<u>14,385,907</u>

Management benefit expenses represents the benefits paid to the Company and its subsidiaries are management and directors such as salaries, related benefit and directors' remuneration, including the benefit paid by other means. The Company and its subsidiaries are management is the persons who are defined under the Securities and Exchange Act. The management is comprised managing director or the managements who have the top position at the management level from the four lists following by the manager level.

4.6 Guarantee

As at January 7, 2020, The Company has guaranteed the product cost to Harn Vietnam Co., Ltd. “subsidiary” in Vietnam under the product sale agreement in the full amount of GBP 472,586.

5. CASH AND CASH EQUIVALENTS

Cash and cash equivalents were consisted of:

		Consolidated financial statements			
		Foreign currencies		Baht	
		2021	2020	2021	2020
Cash on hand	- Baht			55,844	132,676
Cash at banks					
Current accounts	- Baht			36,730,898	37,480,163
Savings accounts	- Baht			201,461,323	263,247,654
	- Vietnamese Dong	3,145,062,796	4,035,484,667	4,582,356	5,213,847
				242,830,421	306,074,340
		Separate financial statements			
		Baht			
		2021	2020	2021	2020
Cash on hand				25,844	102,541
Cash at banks					
Current accounts				36,730,898	37,480,163
Savings accounts				200,931,084	261,735,578
				237,687,826	299,318,282

6. TRADE AND OTHER CURRENT RECEIVABLES

Trade and other current receivables were consisted of:

		Baht			
		Consolidated financial statements		Separate financial statements	
		2021	2020	2021	2020
Trade receivable					
Trade receivables - related parties		1,006	134,058	1,006	134,058
Trade receivables - other companies		235,053,496	218,158,000	233,148,403	217,783,212
Total		235,054,502	218,292,058	233,149,409	217,917,270
<u>Less</u> Allowance for expected credit losses		(12,640,865)	(11,455,792)	(12,635,976)	(11,454,371)
Net		222,413,637	206,836,266	220,513,433	206,462,899
Other receivables					
Other receivables - subsidiaries		-	-	314,388	353,841
Other receivables - related parties		1,747,319	1,845,458	1,747,319	1,845,458
Other receivables - other companies		1,939,926	3,585,280	1,720,078	3,515,280
Accrued retentions		9,072,015	15,104,338	8,997,247	15,104,338
Deposit		6,870,814	6,557,432	6,862,867	6,550,384
Prepaid expenses		5,054,904	5,151,224	4,643,908	4,784,669
Accrued income		1,766,779	3,802,728	1,766,779	3,651,638
Total other receivables		26,451,757	36,046,460	26,052,586	35,805,608

Lease receivables

Lease receivables - printing devices	15,767,761	19,412,311	15,767,761	19,412,311
<u>Less</u> Allowance for expected credit losses	(11,641)	(56,443)	(11,641)	(56,443)
Total	15,756,120	19,355,868	15,756,120	19,355,868
<u>Less</u> due between over 1 year	(9,182,927)	(11,251,986)	(9,182,927)	(11,251,986)
Net	6,573,193	8,103,882	6,573,193	8,103,882
Total trade and other current receivables - net	255,438,587	250,986,608	253,139,212	250,372,389

Trade receivables are classified by aging as follows:

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Current	150,580,310	141,009,078	148,706,871	140,815,378
Overdue				
Less than 3 months	67,370,369	55,102,089	67,338,715	54,921,001
Over 3 months up to 6 months	4,114,011	14,096,467	4,114,011	14,096,467
Over 6 months up to 12 months	8,176,950	4,670,478	8,176,950	4,670,478
Over 12 months	4,812,862	3,413,946	4,812,862	3,413,946
Total	235,054,502	218,292,058	233,149,409	217,917,270
<u>Less</u> Allowance for expected credit losses	(12,640,865)	(11,455,792)	(12,635,976)	(11,454,371)
Trade receivables, net	222,413,637	206,836,266	220,513,433	206,462,899

The minimum lease payments and present value of minimum lease payments which receivable will be paid under the lease agreements as at December 31, 2021 and 2020, are as follows:

	Baht			
	Consolidated financial statements/Separate financial statements			
	2021		2020	
	Minimum lease payments	Present value of minimum lease payments	Minimum lease payments	Present value of minimum lease payments
Collection period				
Within 1 year	9,575,286	6,573,193	10,978,046	8,103,882
Over 1 year but less than 5 years	13,385,234	9,182,927	15,127,108	11,251,986
	22,960,520	15,756,120	26,105,154	19,355,868
<u>Less</u> Deferred interest	(7,204,400)	-	(6,749,286)	-
	15,756,120	15,756,120	19,355,868	19,355,868

The allowance for expected credit losses as at December 31, 2021 and 2020 was as follows:

		Thousand Baht				
		Consolidated financial statements				
	Not yet due	Up to 3 months	3 - 6 months	6 - 12 months	Over 12 months	Total
As at December 31, 2021						
Trade and other current receivables	157,626	67,491	4,265	8,177	6,603	244,162
Lease receivables	22,708	244	20	-	-	22,972
Current contract assets	10,242	-	-	-	40	10,282
Loss allowance	446	441	855	6,087	4,924	12,753
		Thousand Baht				
		Consolidated financial statements				
	Not yet due	Up to 3 months	3 - 6 months	6 - 12 months	Over 12 months	Total
As at December 31, 2020						
Trade and other current receivables	155,407	55,798	14,107	4,670	3,414	233,396
Lease receivables	25,948	204	10	-	-	26,162
Current contract assets	12,825	-	-	-	40	12,865
Loss allowance	413	313	4,172	3,101	3,580	11,579
		Thousand Baht				
		Separate financial statements				
	Not yet due	Up to 3 months	3 - 6 months	6 - 12 months	Over 12 months	Total
As at December 31, 2021						
Trade and other current receivables	155,677	67,459	4,265	8,177	6,603	242,181
Lease receivables	22,708	244	20	-	-	22,972
Current contract assets	8,338	-	-	-	40	8,378
Loss allowance	436	441	855	6,086	4,925	12,743
		Thousand Baht				
		Separate financial statements				
	Not yet due	Up to 3 months	3 - 6 months	6 - 12 months	Over 12 months	Total
As at December 31, 2020						
Trade and other current receivables	155,214	55,616	14,107	4,671	3,414	233,022
Lease receivables	25,948	204	10	-	-	26,162
Current contract assets	12,080	-	-	-	40	12,120
Loss allowance	411	312	4,172	3,101	3,580	11,576

7. CURRENT CONTRACT ASSETS

Current contract assets were consisted of:

		Baht			
		Consolidated financial statements		Separate financial statements	
		2021	2020	2021	2020
Current contract assets		10,281,575	12,864,676	8,377,768	12,119,531
Less Allowance for doubtful account		(65,735)	(67,063)	(60,975)	(65,498)
Net		10,215,840	12,797,613	8,316,793	12,054,033

8. INVENTORIES

Inventories were consisted of:

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Finished goods	288,639,413	247,098,155	286,333,913	245,120,206
Goods in transit	73,645,662	40,820,856	73,645,662	39,102,203
Total	362,285,075	287,919,011	359,979,575	284,222,409
<u>Less</u> Allowance for loss on devaluation of inventories	(33,989,104)	(30,067,043)	(33,989,104)	(30,067,043)
Net	328,295,971	257,851,968	325,990,471	254,155,366

Decline in value of inventory (reversal) recognized as cost of goods sold for the years ended December 31, 2021 and 2020 were Baht 3.92 million and Baht 5.67 million, respectively (for the Company's only amounting to Baht 3.92 million and Baht 5.67 million, respectively).

9. OTHER CURRENT FINANCIAL ASSETS

Other current financial assets were consisted of:

	Baht		
	Consolidated financial statements/ Separate financial statements		
	2021		
	Cost value	Unrealized gain (loss) on revaluation of investments	Fair value
Investment in debt instruments			
- Investment in unit trusts	39,421,139	193,056	39,614,195
Total	39,421,139	193,056	39,614,195

	Baht		
	Consolidated financial statements/ Separate financial statements		
	2020		
	Cost value	Unrealized gain (loss) on revaluation of investments	Fair value
Investment in debt instruments			
- Investment in unit trusts	9,625,255	(2,667,311)	6,957,944
Total	9,625,255	(2,667,311)	6,957,944

10. INVESTMENT IN SUBSIDIARIES

Investment in subsidiaries consisted of:

Subsidiaries	Paid-up capital	Baht			
		Percentage of shareholding		Separate financial statements	
		(%)		Cost method	
		2021	2020	2021	2020
Han Vietnam Co., Ltd.	Vietnamese Dong 800 million	100.00	100.00	1,057,444	1,057,444
Aiyaraham Co., Ltd.	Baht 2 million	65.00	65.00	1,300,000	1,300,000
Total				2,357,444	2,357,444

The company registered Harn Vietnam Co.,Ltd. “subsidiary” in Vietnam on July 30, 2019 with the registered capital of Vietnamese Dong 800 million (Baht 1.06 million). The company held shares in the subsidiary at 100 percent of the registered capital. The principal business is sale of printing equipment with the objective to enhance competitive capacity and enhance customer service by starting from a business unit “digital printing system” as the first business unit.

On July 8, 2020, The Company joined invest in developing the digital business with Aiyarafun Group by establishment of company under the name “Aiyaraharn Company Limited” with the registered capital of Baht 2 million. The Company and the joint investor in Aiyarafun Group hold the shares in such company at 65 percent and 35 percent of the registered capital, respectively. The establishment of such company was in accordance with the resolution of the Board of Directors' Meeting No. 4/2020, held on May 14, 2020. The new registered company will have status as the company's subsidiary. Such investment has an objective to develop IT Products and Solutions system. The operation plan will focus in rendering Smart Building service, in order to extending the existing business of Aiyarafun Group and expending the business for further growth.

11. INVESTMENT PROPERTY

Investment property were consisted of:

	Baht			
	Consolidated financial statements / Separate financial statements			
	Balance	Transactions during the year		Balance
	Dec. 31, 2020	Additions	Decrease	Dec. 31, 2021
<u>Cost</u>				
Land	135,286,506	-	-	135,286,506
Factory building	19,349,556	-	-	19,349,556
Building improvements	948,427	-	-	948,427
Tool and equipment	350,350	-	-	350,350
Total	155,934,839	-	-	155,934,839
<u>Accumulated depreciation</u>				
Factory building	(1,001,936)	(483,739)	-	(1,485,675)
Building improvements	(196,441)	(94,842)	-	(291,283)
Tool and equipment	(145,130)	(70,070)	-	(215,200)
Total	(1,343,507)	(648,651)	-	(1,992,158)
Investment property-net	154,591,332			153,942,681

	Baht			
	Consolidated financial statements / Separate financial statements			
	Balance	Transactions during the year		Balance
	Dec. 31, 2019	Additions	Decrease	Dec. 31, 2020
<u>Cost</u>				
Land	172,645,421	-	-	135,286,506
Factory building	55,675,068	-	-	19,349,556
Building improvements	2,671,760	-	-	948,427
Tool and equipment	957,751	-	-	350,350
Total	231,950,000	-	-	155,934,839
<u>Accumulated depreciation</u>				
Factory building	(1,491,024)	(935,327)	-	(1,001,936)
Building improvements	(286,208)	(180,538)	-	(196,441)
Tool and equipment	(205,192)	(130,477)	-	(145,130)
Total	(1,982,424)	(1,246,342)	-	(1,343,507)
Investment property-net	229,967,576			154,591,332

	Baht			
	Consolidate financial statements		Separate financial statements	
	2021	2020	2021	2020
Depreciation for the year				
- Administrative expenses	648,651	1,246,342	648,651	1,246,342

According to the Board of Directors' Meeting No. 5/2018 held on November 9, 2018, the Board of Directors had a resolution to approve entering into the to buy/to sell land and building agreement for the purpose to use as a single warehouse in the future. Later, the Company has entered into to buy/to sell land and building agreement at the amount of Baht 117.00 million. In 2020, such land and building had a renter. The lease agreements end on March 15, 2020 (the lessee can extend the agreement period for another 1 year with the same rate. The lessee shall notify at least the months before the agreement expires). Later, on March 31, 2021, the former renter did not renew the lease agreement and there is a new renter. The lease agreement commencing on July 1, 2021, ends on June 30, 2024.

During the year 2020, the Company has changed its objective for land holding for rent to be used as a warehouse. Therefore, the Company transferred such investment property as owner-occupied property with the cost at Baht 74.13 million.

During the year 2020, the Company was appraised by 2 independent appraisers by applying the market price approach for land and the replacement cost approach for building and its construction in the valuation in according to the report, had its fair value in the amount of Baht 159.51 million.

The Company and its subsidiaries had rental incomes of investment property for the year ended December 31, 2021 and 2020 in total amounting of Baht 2,752,271 and Baht 6,098,772, respectively (for the Company's only amounting to (2,752,271 Baht and Baht 6,098,772, respectively) and recognized as operating expenses amounting to Baht 1,402,004 and Baht 973,699, respectively (for the Company's only amounting to Baht 1,402,004 and Baht 973,699, respectively), which was recognized in the statement of comprehensive income.

12. PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment were consisted of:

	Baht						
	Consolidated financial statements						
	Balance	Transactions during the year					Balance
	Dec. 31, 2020	Additions	Decrease	Transfer in/out	Transfer classified transactions	Exchange difference on transactions financial statements	Dec. 31, 2021
<u>Cost</u>							
Land	37,358,915	-	-	-	-	-	37,358,915
Buildings and structures	36,325,512	-	-	-	-	-	36,325,512
Tool and equipment	8,950,805	391,793	(7,180)	533,354	-	-	9,868,772
Furniture and office equipment	33,200,805	1,807,833	(3,450,763)	17,563,072	-	7,080	49,128,027
Vehicles	25,170,243	82,736	(1,315,646)	-	-	-	23,937,333
Assets for rent and demonstration	33,139,623	3,720,173	(2,804,563)	18,621,703	-	-	52,676,936
Assets in progress	22,630,403	15,309,525	(574,019)	(36,718,129)	(30,280)	-	617,500
Total	196,776,306	21,312,060	(8,152,171)	-	(30,280)	7,080	209,912,995
<u>Accumulated depreciation</u>							
Building and structures	(1,880,965)	(908,137)	-	-	-	-	(2,789,120)
Tool and equipment	(4,206,291)	(1,272,323)	7,178	-	-	-	(5,471,436)
Furniture and office equipment	(21,695,324)	(4,696,394)	3,403,640	-	-	(525)	(22,987,553)
Vehicles	(14,744,320)	(1,815,468)	1,172,150	-	-	-	(15,387,638)
Assets for rental and demonstration	(24,670,581)	(5,292,891)			-	-	(27,501,774)
			2,461,698	-			
Total	(67,197,481)	(13,985,213)	7,044,666	-	-	(525)	(74,137,503)
Less allowance for impairment	(50,654)	-	50,564	-	-	-	-
Property, plant and equipment-net	129,528,171						135,775,492

	Baht						
	Consolidated financial statements						
	Balance	Transactions during the year					Balance
	Dec. 31, 2019	Additions	Decrease	Transfer in/out	Transfer classified transactions	Exchange difference on transactions financial statements	Dec. 31, 2020
<u>Cost</u>							
Land	-	-	-	-	37,358,915	-	37,358,915
Buildings and structures	-	-	-	-	36,325,512	-	36,325,512
Tool and equipment	5,406,733	580,890	(107,038)	2,462,819	607,401	-	8,950,805
Furniture and office equipment	26,682,463	1,126,968	(3,255,943)	6,926,356	1,723,333	(2,372)	33,200,805
Vehicles	24,503,724	834,743	(168,224)	-	-	-	25,170,243
Assets for rent and demonstration	40,071,980	2,810,072	(9,742,429)	-	-	-	33,139,623
Assets in progress	-	32,072,560	(52,982)	(9,389,175)	-	-	22,630,403
Total	96,664,900	37,425,233	(13,326,616)	-	76,015,161	(2,372)	196,776,306
<u>Accumulated depreciation</u>							
Building and structures	-	(456,550)	-	-	(1,424,415)	-	(1,880,965)
Tool and equipment	(3,381,209)	(713,377)	78,834	-	(190,539)	-	(4,206,291)
Furniture and office equipment	(20,981,630)	(3,502,736)	3,058,883	-	(270,305)	464	(21,695,324)
Vehicles	(12,535,942)	(2,322,665)	114,287	-	-	-	(14,744,320)
Assets for rental and demonstration	(29,099,377)	(4,071,734)	8,500,530	-	-	-	(24,670,581)
Total	(65,998,158)	(11,067,062)	11,752,534	-	(1,885,259)	464	(67,197,481)
Less allowance for impairment	-	(50,654)	-	-	-	-	(50,654)
Property, plant and equipment-net	30,666,742						129,528,171

Baht						
Separate financial statements						
Balance	Transactions during the year					Balance
Dec. 31, 2020	Additions	Decrease	Transfer in/out	Transfer classified transactions		Dec. 31, 2021
<u>Cost</u>						
Land	37,358,915	-	-	-	-	37,358,915
Buildings and structures	36,325,512	-	-	-	-	36,325,512
Tool and equipment	8,948,395	394,203	(7,180)	533,354	-	9,868,772
Furniture and office equipment	33,073,939	1,785,459	(3,450,763)	17,563,072	-	48,971,707
Vehicles	25,170,243	82,736	(1,315,646)	-	-	23,937,333
Assets for rent and demonstration	33,139,623	3,720,173	(2,804,563)	18,621,703	-	52,676,936
Assets in progress	22,630,403	15,309,525	(574,019)	(36,718,129)	(30,280)	617,500
Total	196,647,030	21,292,096	(8,152,171)	-	(30,280)	209,756,675
<u>Accumulated depreciation</u>						
Buildings and structures	(1,880,965)	(908,137)	-	-	-	(2,789,102)
Tool and equipment	(4,206,205)	(1,271,842)	7,178	-	-	(5,470,869)
Furniture and office equipment	(21,683,257)	(4,668,390)	3,403,640	-	-	(22,948,007)
Vehicles	(14,744,320)	(1,815,468)	1,172,150	-	-	(15,387,638)
Assets for rental and demonstration	(24,670,581)	(5,292,891)	2,461,698	-	-	(27,501,774)
Total	(67,185,328)	(13,956,728)	7,044,666	-	-	(74,097,390)
Less Equipment allowance	(50,654)	-	50,654	-	-	-
Property, plant and equipment-net	129,411,048					135,659,285

	Baht				
	Separate financial statements				
	Balance	Transactions during the year			Balance
	Dec. 31, 2019	Additions	Decrease	Transfer	Dec. 31, 2020
				Transfer in/out classified transactions	
<u>Cost</u>					
Land	-	-	-	-	37,358,915
Buildings and structures	-	-	-	-	36,325,512
Tool and equipment	5,406,733	578,480	(107,038)	2,462,819	607,401
Furniture and office equipment	26,682,463	997,730	(3,255,943)	6,926,356	1,723,333
Vehicles	24,503,724	834,743	(168,224)	-	-
Assets for rent and demonstration	40,071,980	2,810,072	(9,742,429)	-	-
Assets in progress	-	32,072,560	(52,982)	(9,389,175)	-
Total	96,664,900	37,293,585	(13,326,616)	-	76,015,161
<u>Accumulated depreciation</u>					
Buildings and structures	-	(456,550)	-	-	(1,424,415)
Tool and equipment	(3,381,209)	(713,291)	78,834	-	(190,539)
Furniture and office equipment	(20,981,630)	(3,490,204)	3,058,882	-	(270,305)
Vehicles	(12,535,942)	(2,322,665)	114,287	-	-
Assets for rental and demonstration	(29,099,377)	(4,071,734)	8,500,530	-	-
Total	(65,998,158)	(11,054,444)	11,752,533	-	(1,885,259)
<u>Less</u> Equipment allowance	-	(50,654)	-	-	-
Property, plant and equipment-net	30,666,742				129,411,048

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Depreciation for the years				
- cost of sale	4,070,940	3,833,232	4,070,459	3,833,145
- Distribution cost and administrative expenses	9,914,273	7,233,830	9,886,269	7,221,299
Total	13,985,213	11,067,062	13,956,728	11,054,444

As at December 31, 2021 and 2020, the Company and its subsidiaries had equipment which were fully depreciated but still in use with the cost price of Baht 34.68 million and Baht 36.52 million, respectively (for the Company's only amounting to Baht 34.68 million and Baht 36.52 million, respectively).

During the year 2020, the Company has transferred investment property to property, plant and equipment with book value of Baht 74.13 million, due to change in holding objective (Note 11).

13. RIGHT-OF-USE ASSETS

Right-of-use assets consists of:

	Baht			
	Consolidated financial statements / Separate financial statements			
	Balance as at	Transactions during the year		Balance as at
	December 31, 2020	Addition	Change in conditions/written-off	December 31, 2021
<u>At cost</u>				
Building	104,557,640	-	-	104,557,640
Equipment	541,917	442,996	-	984,913
Total	105,099,557	442,996	-	105,542,553
<u>Less Accumulated depreciation</u>				
Building	(118,458)	(10,953,288)	-	(11,071,746)
Equipment	(12,795)	(204,330)	-	(217,125)
Total	(131,253)	(11,157,618)	-	(11,288,871)
Right-of-use assets - net	104,968,304			94,253,682

	Baht			
	Consolidated financial statements / Separate financial statements			
	Balance as at	Transactions during the year		Balance as at
	December 31, 2019	Addition	Change in conditions/written-off	December 31, 2020
<u>At cost</u>				
Building	2,814,619	104,557,640	(2,814,619)	104,557,640
Equipment	-	541,917	-	541,917
Total	2,814,619	105,099,557	(2,814,619)	105,099,557
<u>Less Accumulated depreciation</u>				
Building	-	(665,746)	547,288	(118,458)
Equipment	-	(12,795)	-	(12,795)
Total	-	(678,541)	578,541	(131,253)
Right-of-use assets - net	2,814,619			104,968,304

The Company and its subsidiary lease several assets including office building which lease term 10 years, warehouse which lease term 3 years and equipment of which lease term 4 years.

14. GOODWILL

On November 29, 2016, Chillmatch Co., Ltd. and Q II S Co., Ltd. were transferred their entire business into the Company by issuing capital increase shares for Baht 675.36 million to exchange for the identifiable net assets of both companies for Baht 340.69 million, resulting in a goodwill of Baht 334.67 million.

Testing for impairment of goodwill

During the year ended December 31, 2020 and 2019, the Company has tested for impairment of goodwill that arises from the acquisition of Chillmatch Co., Ltd. and Q II S Co., Ltd. which were the subsidiaries under Entire Business Transfer (EBT) process and allocation of Cash Generating Unit ("CGU") which consists of Refrigeration System Unit and Digital Printing System Unit by comparing the carrying amount of the unit includes the goodwill, with the recoverable amount. The recovery amount was based on its value in use, determined by future cash flows to be generated from the continuing use of the unit. The cash flows were projected over a period of 5 years before a terminal growth rate.

Later, during the year ended December 31, 2021 the Company has tested for impairment of goodwill by hiring an independent appraiser in assessing the value of the Refrigeration System and Digital Printing System dated October 26, 2021. In assessing the Value in Use, the present value of future free cash flow or DCF expected to be received in each year from the financial forecast 5 years (from January 1, 2022 to December 31, 2026) with discounted rate obtained from the calculation of the weighted average cost of capital : WACC of the business unit.

After consideration, management believed that goodwill is not impaired.

The key assumptions used in estimating the value in use are as follows:

Key assumption	Value		Approach used to determine the value
	2021	2020	
- Discount rate	8.72% (Weighted Average Cost of Capital: WACC)	6.12% (Weighted Average Cost of Capital: WACC)	The discount rate which is a pre-tax rate that reflects the specific risk of the particular business unit
- Terminal Value Growth Rate	0%	0%	Appropriate estimated rate

15. CUSTOMER RELATIONSHIP

Customer relationship were consisted of:

	Baht		
	Consolidated financial statements / Separate financial statements		
	Balance	Transactions during the year	Balance
	Dec. 31, 2020	Addition	Dec. 31, 2021
<u>Cost</u>			
Customer relationship	104,307,663	-	104,307,663
<u>Less</u> accumulated amortization	(63,975,009)	(13,854,860)	(77,829,869)
Customer relationship - net	40,332,654		26,477,794

	Baht		
	Consolidated financial statements / Separate financial statements		
	Balance	Transactions during the year	Balance
	Dec. 31, 2019	Addition	Dec. 31, 2020
<u>Cost</u>			
Customer relationship	104,307,663	-	104,307,663
<u>Less</u> accumulated amortization	(46,027,850)	(17,947,159)	(63,975,009)
Customer relationship - net	58,279,813		40,332,654

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Depreciation for the years				
- Administrative expenses	13,854,860	17,947,159	13,854,860	17,947,159

16. INTANGIBLE ASSET

Intangible asset were consisted of:

Baht					
Consolidated financial statements / Separate financial statements					
Balance	Transactions during the year				Balance
Dec. 31, 2020	Addition	Decrease	Transfer In / out	Transfer classified transactions	Dec. 31, 2021
<u>Cost</u>					
Software licenses	39,901,355	312,500	-	2,031,180	42,245,035
Software in progress	-	2,000,900	-	(2,031,180)	-
Total	39,901,355	2,313,400	-	30,280	42,245,035
<u>Less Accumulated amortization</u>					
Software licenses	(21,885,845)	(4,374,180)	-	-	(26,260,025)
Total	(21,885,845)	(4,374,180)	-	-	(26,260,025)
Intangible asset-net	18,015,510				15,985,010

Baht					
Consolidated financial statements / Separate financial statements					
Balance	Transactions during the year				Balance
Dec. 31, 2019	Addition	Decrease	Transfer In / out		Dec. 31, 2020
<u>Cost</u>					
Software licenses	38,035,264	364,000	(168,298)	1,670,389	39,901,355
Software in progress	906,952	763,437	-	(1,670,389)	-
Total	38,942,216	1,127,437	(168,298)	-	39,901,355
<u>Less Accumulated amortization</u>					
Software licenses	(17,995,143)	(4,058,998)	168,296	-	(21,885,845)
Total	(17,995,143)	(4,058,998)	168,296	-	(21,885,845)
Intangible asset-net	20,947,073				18,015,510

Baht				
Consolidated financial statements		Separate financial statements		
2021	2020	2021	2020	
Depreciation for the years				
- cost of rendering of services	871,654	881,186	871,654	881,186
- Administrative expenses	3,502,526	3,177,812	3,502,526	3,177,812
Total	4,374,180	4,058,998	4,374,180	4,058,998

As at December 31, 2021 and 2020, the Company and its subsidiaries had intangible assets which were fully depreciated but still in use with the cost price of Baht 3.66 million and Baht 3.42 million, respectively (for the Company's only amounting to Baht 3.66 million and Baht 3.42 million, respectively).

17. DEFERRED TAX ASSETS AND DEFERRED TAX LIABILITIES

Deferred tax assets and deferred tax liabilities were consisted of:

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020 (Restated)	2021	2020 (Restated)
Deferred tax assets	9,425,953	4,589,612	9,389,839	4,572,978
Deferred tax liabilities	(54,146)	-	-	-
	<u>9,371,807</u>	<u>4,589,612</u>	<u>9,389,839</u>	<u>4,572,978</u>

Changes in deferred tax assets and deferred tax liabilities for the years ended December 31, 2021 and 2020 were summarized as follows:

	Baht			
	Consolidated financial statements			
	Balance as at	Income (expenses) during the year		Balance as at
	Dec. 31, 2020	In profit or loss	In other	Dec. 31, 2021
	(Restated)		comprehensive	
			income	
Deferred tax assets:				
Allowance for doubtful accounts	2,315,859	234,797	-	2,550,656
Allowance for devaluation of inventories	6,013,408	784,413	-	6,797,821
Allowance for impairment of investment	49,564	-	-	49,564
Allowance for impairment of equipment	10,131	(10,131)	-	-
Lease agreements	486	436,371	-	436,857
Non-current provisions for employee benefit	5,183,911	404,280	(208,036)	5,380,155
Derivatives liabilities	83,377	(38,442)	-	44,935
Unearned revenue	-	29,386	-	29,386
Employee joint investment program expenses	746,570	532,706	-	1,279,276
Total	14,403,306	2,373,380	(208,036)	16,568,650
Deferred tax liabilities:				
Inventories (from fair value adjustment of business combination)	93,358	34,775	-	58,583
Equipment (from fair value adjustment of business combination)	54,161	53,673	-	488
Unrealized gain (loss) on temporary investments	-	(487,854)	-	487,854
Customer relationship (from fair value adjustment of business combination)	8,066,531	2,770,972	-	5,295,559
Depreciation of equipment	231,351	(33,330)	-	264,681
Finance lease assets	1,368,293	355,465	-	1,012,828
Prepaid expenses	-	(76,850)	-	76,850
Total	9,813,694	2,616,851	-	7,196,843
Deferred tax assets (liabilities) - net	4,589,612			9,371,807
Deferred tax income (expenses) - net		4,990,231	(208,036)	

Baht				
Consolidated financial statements				
	Balance as at	Income (expenses) during the year		Balance as at
	Dec. 31, 2019	In profit or loss	In other comprehensive income	Dec. 31, 2020 (Restated)
Deferred tax assets:				
Allowance for doubtful accounts	1,465,236	850,623	-	2,315,859
Allowance for devaluation of inventories	4,878,788	1,134,620	-	6,013,408
Allowance for impairment of investment	1,195	48,369	-	49,564
Allowance for impairment of equipment	-	10,131	-	10,131
Lease agreements	-	486	-	486
Non-current provisions for employee benefit	4,732,365	451,546	-	5,183,911
Derivatives liabilities	129,613	(46,236)	-	83,377
Employee joint investment program	-	746,570	-	746,570
Total	11,207,197	3,196,109	-	14,403,306
Deferred tax liabilities:				
Inventories (from fair value adjustment of business combination)	110,138	16,780	-	93,358
Equipment (from fair value adjustment of business combination)	204,113	149,952	-	54,161
Unrealized gain (loss) on temporary investments	650,411	650,411	-	-
Customer relationship (from fair value adjustment of business combination)	11,655,963	3,589,432	-	8,066,531
Depreciation of equipment	188,805	(42,546)	-	231,351
Finance lease assets	564,065	(804,228)	-	1,368,293
Total	13,373,495	3,559,801	-	9,813,694
Deferred tax assets (liabilities) - net	(2,166,298)			4,589,612
Deferred tax income (expenses) - net		6,755,910	-	

Baht				
Separate financial statements				
	Balance as at	Income (expenses) during the year		Balance as at
	Dec. 31, 2020 (Restated)	In profit or loss	In other comprehensive income	Dec. 31, 2021
Deferred tax assets:				
Allowance for doubtful accounts	2,315,262	233,417	-	2,548,679
Allowance for devaluation of inventories	6,013,408	784,413	-	6,797,821
Allowance for impairment of investment	49,564	-	-	49,564
Allowance for impairment of equipment	10,131	(10,131)	-	-
Lease agreements	486	436,371	-	436,857
Non-current provisions for employee benefit	5,167,874	385,193	(208,036)	5,345,031
Derivatives liabilities	83,377	(38,442)	-	44,935
Employee joint investment program expenses	746,570	532,706	-	1,279,276
Total	14,386,672	2,323,527	(208,036)	16,502,163
Deferred tax liabilities:				
Inventories (from fair value adjustment of business combination)	93,358	34,775	-	58,583
Equipment (from fair value adjustment of business combination)	54,161	53,673	-	488

	Baht			
	Separate financial statements			
	Balance as at	Income (expenses) during the year		Balance as at
	Dec. 31, 2020	In profit or loss	In other	Dec. 31, 2021
	(Restated)		comprehensive income	
Unrealized gain (loss) on temporary investments	-	(487,854)	-	487,854
Customer relationship (from fair value adjustment of business combination)	8,066,531	2,770,972	-	5,295,559
Depreciation of equipment	231,351	(25,661)	-	257,012
Finance lease assets	1,368,293	355,465	-	1,012,828
Total	9,813,694	2,701,370	-	7,112,324
Deferred tax assets (liabilities) - net	4,572,978			9,389,839
Deferred tax income (expenses) - net		5,024,897	(208,036)	

18. TRADE AND OTHER CURRENT PAYABLES

Trade and other current payables were consisted of:

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Trade payables				
Trade payables - other companies	115,246,936	93,625,735	114,457,732	90,604,594
Other current payables				
Accrued commission expenses	13,220,166	13,891,115	13,220,166	13,891,115
Accrued bonus	10,202,941	13,957,340	10,202,941	13,849,556
Advance from customers for goods and services	35,351,729	20,832,788	35,091,043	20,533,687
Other accrued expenses	18,842,437	14,228,808	18,315,201	14,105,711
Account payable - Revenue department	2,978,290	4,330,726	2,806,379	4,266,891
Other deposit	1,244,220	1,094,940	1,322,220	1,094,940
Other	6,863,430	5,698,544	6,863,430	5,698,544
Total	88,703,213	74,034,261	87,821,380	73,440,444
Total trade and other current payables	203,950,149	167,659,996	202,279,112	164,045,038

19. LEASE LIABILITIES

The carrying amounts of lease liabilities and the movement for the year ended December 31, 2021 and 2020 are presented below.

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Beginning balance	104,970,733	2,814,619	104,970,733	2,814,619
Addition	442,996	105,099,557	442,996	105,099,557
Accretion of interest	2,301,737	90,655	2,301,737	90,655
Payments	(11,277,500)	(738,630)	(11,277,500)	(738,630)
Decrease from contract cancellation	-	(2,295,468)	-	(2,295,468)
Ending balance	96,437,966	104,970,733	96,437,966	104,970,733
Less: current portion	(9,055,775)	(8,918,127)	(9,055,775)	(8,918,127)
Lease liabilities - net of current portion	87,382,191	96,052,606	87,382,191	96,052,606

Amounts recognized in the statement of comprehensive income for the years ended December 31, 2021 and 2020 are comprise;

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Depreciation of right-of-use assets	11,157,618	678,541	11,157,618	678,541
Interest expense on lease liabilities	2,301,737	90,655	2,301,737	90,655
Expense relating to short-term lease	380,552	8,987,586	380,552	8,836,786
Leases of low-value assets	268,214	511,399	237,756	508,950
Total	14,108,121	10,268,181	14,077,663	10,114,932

For the year ended December 31, 2021 and 2020, the Company and its subsidiaries had rental income from investment property in the amount of Baht 11,926,266 and Baht 10,237,615, respectively (for the Company's only amounting to Baht 11,895,808 and Baht 10,084,366, respectively) and also had non-cash additions to right-of-use assets and lease liabilities of Baht 442,996 and Baht 105,099,557, respectively (for the Company's only amounting to Baht 442,996 and Baht 105,099,557, respectively).

20. NON-CURRENT PROVISIONS FOR EMPLOYEE BENEFIT

Movements of non-current provisions for employee benefit for the years ended December 31, 2021 and 2020 were as follows:

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Beginning balance defined benefit obligations	27,765,012	25,513,846	27,684,826	25,513,846
Current service costs and interest	1,907,265	2,651,166	1,811,827	2,570,980
Actuarial (gain) loss	(1,040,182)	-	(1,040,182)	-
Benefits paid by the plan	(664,000)	(400,000)	(664,000)	(400,000)
Ending balance defined benefit obligations	27,968,095	27,765,012	27,792,471	27,684,826

The statements of comprehensive income for the years ended December 31, 2021 and 2020 are as follows:

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Current service costs				
Cost of sales	219,465	410,182	204,414	379,291
Distribution cost	569,377	852,641	569,377	852,641
Administrative expenses	728,697	964,055	648,310	914,760
Interest on obligation	389,726	424,288	389,726	424,288
Total	1,907,265	2,651,166	1,811,827	2,570,980

Actuarial (gain) loss

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Actuarial (gain) loss arising from				
Changes in demographic assumptions	387,723	-	387,723	-
Changes in financial assumptions	(2,371,661)	-	(2,371,661)	-
Experience adjustments	943,756	-	943,756	-
Total	(1,040,182)	-	(1,040,182)	-

Principal actuarial assumptions at the reporting date for the years ended December 31, 2021 and 2020 are as follow:

	Percentage			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Discount rate	1.92 - 2.32	1.50 - 1.80	1.92 - 2.32	1.50 - 1.80
Salary increase rate	4.00	4.50	4.00	4.50
Employee turnover rate	4.78 - 28.65	4.78 - 28.65	4.78 - 28.65	4.78 - 28.65
Mortality rate	105.00% of Thai	100% of Thai	105.00% of Thai	100.00% of Thai
	Mortality Ordinary	Mortality Ordinary	Mortality Ordinary	Mortality Ordinary
	Table 2017	Table 2017	Table 2017	Table 2017

Sensitivity analysis

The results of sensitivity analysis for significant assumptions that affect the present value of the long-term employee benefit obligations as at December 31, 2021 and 2020 are summarized below:

	2021			
	Consolidated financial statements/Separate financial statements			
	%		Baht	
	Increase	Decrease	Increase	Decrease
Discount rate	1	(1)	(2,440,716)	2,850,146
Salary increase rate	1	(1)	2,402,291	(2,092,552)
Turnover rate	20	(20)	(2,862,237)	3,448,983
Mortality rate	20	(20)	(282,946)	286,890

	2020			
	Consolidated financial statements/Separate financial statements			
	%		Baht	
	Increase	Decrease	Increase	Decrease
Discount rate	1	(1)	(2,507,936)	2,929,634
Salary increase rate	1	(1)	2,645,897	(2,292,562)
Turnover rate	20	(20)	(3,346,202)	4,149,202
Mortality rate	20	(20)	(316,605)	321,329

21. PREMIUM ON ORDINARY SHARES

According to the Public Companies Act B.E. 2535, under the provision of section 51, the Company is required to set aside share subscription received in excess of the par value of the shares issued to a reserve account ("premium on ordinary shares"). The premium on ordinary shares is not available for dividend distribution.

22. THE EMPLOYEE JOINT INVESTMENT PROGRAM (EJIP)

On May 22, 2015, the Securities and Exchange Commission approved the Employee Joint Investment Program (EJIP). The details of the program are as follows;

The period of EJIP	May 1, 2020 to April 30, 2025, with a total duration of 5 years. (Formerly from May 1, 2015 to April 30, 2020)
Eligible employees under EJIP	The employees has over one year working experience or employees at director on the voluntary basis.
EJIP arrangement	The Company will make deduction from the payroll of eligible employees who voluntarily join the EJIP, at the rate 5% of each month and director at the rate 5-30% of each month (Formerly 5-25%). The Company will contribute 100% of the amount contributed by EJIP participants on a monthly basis.
EJIP buying schedule	Monthly basis.
Conditions for holding the securities	During the 1 st year - 2 nd year, cannot sell any shares After the 2 nd year, can sell 25% of accumulated shares After the 3 rd year, can sell 50% of accumulated shares After the 4 th year, can sell 75% of accumulated shares After the 5 th year, can sell all shares
EJIP program manager	Philip Securities (Thailand) Public Company Limited

Movements of the employee joint investment program for the years ended December 31, 2021 and 2020 were as follows:

	Baht					
	Consolidated financial statements			Separate financial statements		
	2021			2020		
	Surplus on	(Less)	Net	Surplus on	(Less)	Net
	share-based	Treasure		share-based	Treasure	
	payment	shares		payment	shares	
	transactions			transactions		
Beginning balance	6,602,402	(2,869,554)	3,732,848	-	-	-
Movements of the year						
- Employee joint investment program expenses	7,219,655	-	7,219,655	6,602,402	-	6,602,402
- Employee joint investment program expenses	-	(4,556,124)	(4,556,124)			
paid				-	(2,869,554)	(2,869,554)
Ending balance	13,822,057	(7,425,678)	6,396,379	6,602,402	(2,869,554)	3,732,848

The statements of comprehensive income for the years ended December 31, 2021 and 2020 are as follows:

	Baht	
	Consolidated financial statements / Separate financial	
	statements	
	2021	2020
Cost of sales	1,049,582	979,861
Distribution cost	2,683,116	2,408,721
Administrative expenses	3,486,957	3,213,820
	7,219,655	6,602,402

23. LEGAL RESERVE

According to the Public Companies Act B.E. 2535, under provision of section 115, the Company is required to set aside a statutory reserve of at least 5 percent of its net profit after deducting accumulated deficit brought forward (if any) until the reserve reaches 10 percent of the registered share capital. The statutory reserve could not be used for dividend payment.

24. APPROPRIATION OF RETAINED EARNINGS

According to the resolution of the Board of Directors' Meeting No. 1/2021 held on February 25, 2021, the Board of Directors approved dividend payment at Baht 0.13 per share for 584,500,000 issued and paid-up ordinary shares, in total amount of Baht 75,984,558. The dividend declaration had been approved from Annual General Shareholders' Meeting No. 1/2021 on April 23, 2021. The dividend was paid on May 14, 2021.

According to the Annual General Meeting of shareholders for the year 2020, held on August 3, 2020, the shareholders approved the appropriation of legal reserve at 5% of annual net profit in the amount of Baht 2.16 million and considered the acknowledgement the interim dividend payment approved by the Board of directors' meeting No.3/2020 held on April 16, 2020, the directors approved the interim dividend payment at the rate of 0.18 baht per share for the issued and paid-up shares of 584,500,000 shares, amounting to Baht 105,209,568. The dividend was paid on May 15, 2020.

25. PROVIDENT FUND

The Company and its employees jointly registered a provident fund scheme under the Provident Fund Act B.E. 2530. The Fund is contributed to by both the employees and the Company. The Fund is managed by UOB Asset Management (Thailand) Company Limited. This Fund is registered under the conditions of Ministry of Finance and the Fund is managed by the approved fund manager.

For the years ended December 31, 2021 and 2020, the Company and its subsidiaries paid contributions to provident fund and recognized as expenses amounting to Baht 4.46 million and Baht 4.23 million, respectively (for the Company's only amounting to Baht 4.46 million and Baht 4.23 million, respectively).

26. OPERATING SEGMENT

Segment information is presented in respect of the business segments. The primary format in segment information report is based on the management and internal reporting structure.

The Company and its subsidiaries comprises the following main business segments:

- Segment 1 Fire Protection Products and Project
- Segment 2 Sanitary and Air-Conditioning System
- Segment 3 Refrigeration System
- Segment 4 Digital Printing System
- Segment 5 Building-IoT Solutions

Operating segment by business in the consolidated statement of comprehensive income for the ended December 31, 2021 and 2020 were as follows:

	Thousand Baht											
	Consolidated financial statements											
	2021						2020					
							(Restated)					
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Total	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Total
Revenue from sale of goods	351,478	47,848	197,352	312,481	-	909,159	438,907	63,816	202,828	308,747	-	1,014,298
Revenue from rendering of												
services	72,459	-	-	39,421	4,944	116,824	95,275	-	-	40,317	2,435	138,027
Cost of sale of goods	(250,652)	(33,741)	(143,173)	(188,048)	-	(615,614)	(313,761)	(43,868)	(138,122)	(184,646)	-	(680,397)
Cost of rendering of services	(60,723)	-	-	(33,995)	(3,373)	(98,091)	(83,608)	-	-	(33,752)	(2,072)	(119,432)
Gross profit	112,562	14,107	54,179	129,859	1,571	312,278	136,813	19,948	64,706	130,666	363	352,496
Other income						20,150						17,101
Distribution cost						(107,572)						(108,690)
Administrative expenses						(132,501)						(139,105)
Profit from operation						92,355						121,802
Finance cost						(2,310)						(91)
Tax expense						(17,813)						(23,822)
Profit for the periods						72,232						97,889
Other comprehensive income (expenses)						1,248						(400)
Total comprehensive income for the periods						73,480						97,489

Thousand Baht										
Separate financial statements										
	2021					2020 (Restated)				
	Segment 1	Segment 2	Segment 3	Segment 4	Total	Segment 1	Segment 2	Segment 3	Segment 4	Total
Revenue from sale of goods	351,553	47,848	197,352	304,027	900,780	438,907	63,816	202,828	285,467	991,018
Revenue from rendering of services	72,459	-	-	38,379	110,838	95,275	-	-	38,665	133,940
Cost of sale of goods	(250,719)	(33,741)	(143,173)	(182,725)	(610,358)	(313,761)	(43,868)	(138,122)	(163,693)	(659,444)
Cost of rendering of services	(60,724)	-	-	(33,024)	(93,748)	(83,607)	-	-	(32,244)	(115,851)
Gross profit	112,569	14,107	54,179	126,657	307,512	136,814	19,948	64,706	128,195	349,663
Other income					21,187					16,931
Distribution cost					(105,426)					(107,446)
Administrative expenses					(131,159)					(138,031)
Profit from operation					92,114					121,117
Finance cost					(2,302)					(91)
Income tax expense					(17,649)					(23,833)
Profit for the years					72,163					97,193
Other comprehensive income					832					-
Total comprehensive income for the years					72,995					97,193

Operating segment by business in the statement of financial position as at December 31, 2021 and 2020 were as follows:

Thousand Baht												
Consolidated financial statements												
	2021						2020					
							(Restated)					
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Total	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Total
Assets for reportable segments												
Trade receivables - other companies	122,386	16,377	45,003	51,288	-	235,054	119,907	16,737	35,533	46,115	-	218,292
Inventories	183,577	4,063	66,656	73,795	205	328,296	127,853	6,282	58,918	64,799	-	257,852
Goodwill	-	-	200,066	134,606	-	334,672	-	-	200,066	134,606	-	334,672
Customer relationship	-	-	19,242	7,236	-	26,478	-	-	29,318	11,015	-	40,333
Assets under common use												
- Investment property	-	-	-	-	-	153,943	-	-	-	-	-	154,591
- Property, plant and equipment	-	-	-	-	-	135,775	-	-	-	-	-	129,528
- Right-of-use assets	-	-	-	-	-	94,254	-	-	-	-	-	104,968
- Intangible assets	-	-	-	-	-	15,985	-	-	-	-	-	18,016
- Others	-	-	-	-	-	361,266	-	-	-	-	-	399,952
Total assets for reportable segments	305,963	20,440	330,967	266,925	205	1,685,723	247,760	23,019	323,835	256,535	-	1,658,204
Total liabilities for reportable segments	-	-	-	-	-	367,190	-	-	-	-	-	339,829

Thousand Baht										
Separate financial statements										
2021					2020					
					(Restated)					
Segment 1	Segment 2	Segment 3	Segment 4	Total	Segment 1	Segment 2	Segment 3	Segment 4	Total	
Assets for reportable segments										
Trade receivables - other companies										
	122,385	16,377	45,003	49,383	233,148	119,907	16,737	35,533	45,741	217,918
Inventories	183,577	4,063	66,655	71,695	325,990	127,853	6,282	58,918	61,103	254,156
Goodwill	-	-	200,066	134,606	334,672	-	-	200,066	134,606	334,672
Customer relationship	-	-	19,242	7,236	26,478	-	-	29,318	11,015	40,333
Assets under common use										
- Investment property	-	-	-	-	153,943	-	-	-	-	154,591
- Property, plant and equipment	-	-	-	-	135,659	-	-	-	-	129,411
- Right-of-use assets	-	-	-	-	94,254	-	-	-	-	104,968
- Intangible assets	-	-	-	-	15,985	-	-	-	-	18,016
- Others	-	-	-	-	362,609	-	-	-	-	400,468
Total assets for reportable segments	305,962	20,440	330,966	262,920	1,682,738	247,760	23,019	323,835	252,465	1,654,533
Total liabilities for reportable segments	-	-	-	-	364,660	-	-	-	-	336,129

For the years ended December 31, 2021 and 2020, there was no revenue from sales and service with a single external customers contributed 10% or more to the total revenue.

27. EXPENSE BY NATURE

Expenses by nature for the years ended December 31, 2021 and 2020 consist of the significant expenses were as follows:

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
		(Restated)		(Restated)
Purchases of finished goods	675,993,144	634,274,550	671,651,943	611,319,681
Other changes in finished goods and work in process	(70,444,004)	47,187,888	(71,835,105)	48,627,117
Employee expenses	184,861,927	189,859,891	179,543,249	186,721,203
Office rental and service expenses	1,036,850	10,429,235	987,127	10,227,436
Depreciation and amortization	44,020,523	34,998,103	43,992,038	34,985,483
Others	118,309,361	130,875,133	116,351,745	128,891,619
Total	953,777,801	1,047,624,800	940,690,997	1,020,772,539

28. INCOME TAX EXPENSE

28.1 Major components of income tax expense

For the years ended December 31, 2021 and 2020 consisted of:

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020 (Restated)	2021	2020 (Restated)
Income tax expense shown in profit or loss :				
Current tax expense:				
Income tax expense for the years	22,803,504	30,577,605	22,674,224	30,572,330
Deferred tax expense (income):				
Changes in temporary differences relating to the original recognition and reversal	(4,990,231)	(6,755,910)	(5,024,897)	(6,739,276)
Total	<u>17,813,273</u>	<u>23,821,695</u>	<u>17,649,327</u>	<u>23,833,054</u>
Income tax relating to components of other comprehensive income:				
Deferred tax expenses (income) relating to Gain (loss) on re-measurements of defined benefits plans	208,036	-	208,036	-
Total	<u>18,021,309</u>	<u>23,821,695</u>	<u>17,857,363</u>	<u>23,833,054</u>

28.2 A numerical reconciliation between income tax expense and the product of accounting profit multiplied by the applicable tax rate.

For the years ended December 31, 2021 and 2020, which were summarized as follows:

	Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020 (Restated)	2021	2020 (Restated)
Accounting profit for the years	90,045,119	121,711,020	89,812,214	121,026,017
The applicable tax rate (%)	20%	20%	20%	20%
Income tax expense at the applicable tax rate	<u>18,009,024</u>	<u>24,342,204</u>	<u>17,962,443</u>	<u>24,205,203</u>
Reconciliation items:				
Tax effect of expenses that are not deductible in determining tax profit:				
- Expenses not allowed as expenses in determining taxable profit	417,247	184,927	362,777	122,762
Addition expenses deductible for tax purpose	(705,156)	(498,287)	(701,781)	(494,911)
Other	92,158	(207,149)	25,888	-
Total reconciliation items	<u>(195,751)</u>	<u>(520,509)</u>	<u>(313,116)</u>	<u>(372,149)</u>
Total tax expense (income)	<u>17,813,273</u>	<u>23,821,695</u>	<u>17,649,327</u>	<u>23,833,054</u>

28.3 A numerical reconciliation between the average effective tax rate and the applicable tax rate.

For the years ended December 31, 2021 and 2020 were summarized as follows:

	Consolidated financial statements			
	2021		2020 (Restated)	
	Tax amount (Baht)	Tax rate (%)	Tax amount (Baht)	Tax rate (%)
Accounting profit before income tax expense for the years	<u>90,045,119</u>		<u>121,711,020</u>	
Income tax expense at the applicable tax rate	18,009,024	20.00	24,342,204	20.00
Reconciliation items	(195,751)	(0.22)	(520,509)	(0.43)
Income tax expense at the average effective tax rate	<u>17,813,273</u>	<u>19.78</u>	<u>23,821,695</u>	<u>19.57</u>

	Separate financial statements			
	2021		2020	
			(Restated)	
	Tax amount (Baht)	Tax rate (%)	Tax amount (Baht)	Tax rate (%)
Accounting profit before income tax expense for the years	89,812,214		121,026,017	
Income tax expense at the applicable tax rate	17,962,443	20.00	24,205,203	20.00
Reconciliation items	(313,116)	(0.35)	(372,149)	(0.30)
Income tax expense at the average effective tax rate	17,649,327	19.65	23,833,054	19.70

29. BASIC EARNINGS PER SHARE

Basic earnings per share is calculated by dividing the profit for the years by the weighted average number of ordinary shares in issue during the years.

	Consolidated financial Statements		Separate financial statements	
	2021	2020 (Restated)	2021	2020 (Restated)
Profit for the years of parent company (Baht)	72,271,139	97,983,060	72,162,887	97,192,963
Weighted average number of ordinary shares (Shares)	584,500,000	584,500,000	584,500,000	584,500,000
Basic earnings per share (Baht per share)	0.12	0.17	0.12	0.17

30. COMMITMENTS AND CONTINGENT LIABILITIES

As at December 31, 2021 and 2020, the Company and its subsidiaries had commitments and contingent liabilities as follows :

30.1 As at December 31, 2021 and 2020, the Company and its subsidiaries have letters of guarantee issued by banks for goods and work under system installation service agreement of:

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Million Baht	32.90	21.04	32.90	21.04
Million US dollars	0.15	0.27	0.15	0.27

30.2 The credit facilities with financial institutions as at December 31, 2021 and 2020 consisted of :

Type of credit	Consolidated financial statements / Separate financial statements			
	Facilities (Million Baht)		Referred interest rate (% per annum)	
	2021	2020	2021	2020
Bank overdrafts	10.00	10.00	MOR, MOR-0.50	MOR, MOR-0.50
Letter of credit/trust receipt	150.00	150.00	MLR-1, MMR	MLR-1, MMR
Letter of guarantee	74.00	74.00	1.25 - 2%	1.25 - 2%
Forward exchange contracts	560.00	560.00	-	-
Total	794.00	794.00		
Forward foreign exchange contracts (Million US dollars)	7.00	7.00		

30.3 Minimum lease and service payments are as follows :

Payment periods	Million Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Due not later than 1 year	0.53	0.84	0.52	0.81
Due later than 1 year but not later than 5 years	1.04	1.38	1.04	1.37

Rental and service expenses for the years ended December 31, 2021 and 2020 are Baht 1.04 million and Baht 10.43 million, respectively (for the Company's only to Baht 0.99 million and Baht 10.23 million, respectively).

30.4 Commitment on capital expenditure

30.4.1 As at December 31, 2021 the Company has commitment to pay under computer equipment and access control system for office building contract totaled Baht 13.89 million. The Company has an outstanding commitment under the agreement amounted Baht 5.93 million.

30.4.2 As at December 31, 2021 the Company has commitment to pay under furniture and fixtures purchase contract totaled Baht 2.18 million. The Company has an outstanding commitment under the agreement amounted Baht 0.45 million

31. FAIR VALUE MEASUREMENT

The Company and its subsidiaries uses the market approach to measure its assets and liabilities that are required to be measured at fair value by relevant TFRS, except that the cost approach or income approach is used when there is no active market or when a quoted market price is not available.

Fair value hierarchy

In applying the above-mentioned valuation techniques, the Company and its subsidiaries endeavors to use relevant observable inputs as much as possible. TFRS 13 Fair Value Measurement establishes a fair value hierarchy categorizing such inputs into three levels as follows:

Level 1 - Use of quoted market prices in an observable active market for such assets or liabilities

Level 2 - Use of other observable inputs for such assets or liabilities, whether directly or indirectly

Level 3 - Use of unobservable inputs such as estimates of future cash flows.

As at December 31, 2021 and 2020, the Company and its subsidiaries had the following financial assets and liabilities that were measured at fair value on which the fair value hierarchy is classified as follows

	Baht			
	Consolidated financial statements / Separate financial statement			
	2021			
	Level 1	Level 2	Level 3	Total
Financial assets (liabilities) measured at fair value				
Investments in unit trusts	-	39,614,195	-	39,614,195
Foreign currency forward contracts	-	(16,713)	-	(16,713)
:				
	Baht			
	Consolidated financial statements / Separate financial statements			
	2020			
	Level 1	Level 2	Level 3	Total
Financial assets (liabilities) measured at fair value				
Investments in unit trusts	-	6,957,944	-	6,957,944
Foreign currency forward contracts	-	(361,039)	-	(361,039)

Fair valuation techniques and inputs to Level 2 fair valuation

The fair value of investments in investment units that are not listed on the Stock Exchange of Thailand is determined by using the net asset value per unit as announced by the fund managers.

The fair value of derivatives has been determined by using a discounted future cash flow model and a valuation model technique. Most of the inputs used for the valuation are observable in the relevant market, such as spot rates of foreign currencies, forward rate of the respective currencies, and interest rate yield curves.

During the year, there were no transfers within the fair value hierarchy.

Certain financial assets and financial liabilities is measured at fair value

The following table gives information about how the fair values of these financial assets and financial liabilities are measured at fair value on fair value hierarchy as at December 31, 2021 and 2020.

Financial assets and financial liabilities	Fair value (Baht)		Fair value Hierarchy	Valuation techniques and key inputs for fair value measurement
	Consolidated financial statements/Separate financial statements			
	2021	2020		
<u>Financial assets (liabilities)</u>				
Foreign currency forward contracts	(16,713)	(361,039)	Level 2	Discounted cash flow The estimated future cash flows is from foreign currency exchange rates (from observable forward exchange rates at the end of the reporting period) and contract forward rates, discounted at a rate that reflects the credit risk of various counterparties.

These financial assets and financial liabilities are presented as a part of other current assets and other current liabilities in the statement of financial position.

Valuation technique for financial instruments not measured at fair value of the Company and its subsidiaries are as follows:

Cash and cash equivalents, trade and other current receivables, current portion of financial lease receivable had carrying values approximate their fair values due to the relatively short-term maturity of these financial instruments.

General investment had not significantly different from the carrying values stated in the reporting date.

Trade and other current payables, short-term provisions and other current liabilities - the carrying amounts stated in the reporting date of these financial liabilities approximate their fair values because of the short-term period to maturity of these financial instruments.

32. FINANCIAL INSTRUMENTS

Financial risk management policies

The Company and its subsidiaries are exposed to normal business risks from changes in interest rates and currency exchange rates and from non-performance of contractual obligations by counterparties. The Company and its subsidiaries do not hold or use derivative financial instruments for speculative or trading purposes.

Risk management is integral to the whole business of the Company and its subsidiaries. The Company and its subsidiaries have a system of controls in place to create an acceptable balance between the cost of risks occurring and the cost of managing the risks. The management continually monitors the Company and its subsidiaries are risk management process to ensure that an appropriate balance between risk and control is achieved.

Capital management

The Board of Directors' policy is to maintain a strong capital base so as to maintain investor, creditor and market confidence and to sustain future development of the business. The Board monitors the return on capital, which the Company and its subsidiaries define as result from operating activities divided by total shareholders' equity, and also monitors the level of dividends to ordinary shareholders.

Foreign currency risk

The Company and its subsidiaries are exposed to foreign currency risk relating to purchases which are denominated in foreign currencies. The Company and its subsidiaries primarily utilize forward foreign exchange contracts with maturities of less than one year to hedge such financial assets and liabilities denominated in foreign currencies. The forward foreign exchange contracts entered into at the reporting date also relate to anticipated purchases, denominated in foreign currencies, for the subsequent period.

As at December 31, 2021 and 2020, the Company and its subsidiaries have financial liabilities in foreign currencies as follows;

	Foreign Currencies			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Not hedged				
US dollar	722,806	-	722,806	-
EURO	124,492	178,477	124,492	178,477
GBP	364,620	234,891	361,055	234,891
SGD	-	1,250	-	1,250

Derivatives

Derivatives are forward foreign exchange contracts used for economic hedging purposes and not as speculative investments. However, derivatives do not meet the hedge accounting criteria, therefore they are classified as 'held for trading' for accounting purposes and are accounted for at fair value through profit or loss. They are presented as current assets or liabilities to the extent they are expected to be realized within 12 months after the end of the reporting period.

As at December 31, 2021 and 2020, the Company had gain (loss) from changes in fair value of derivatives in the amount of Baht (0.02) million and Baht (0.36) million, respectively.

Net foreign exchange gains (losses)

For the years ended December 31, 2021 and 2020, the aggregate net foreign exchange gains (losses) recognized in profit or loss are as follow:

	Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Unrealized gain (loss) on exchange rates	1,464,834	333,095	1,615,513	41,531
Gain (loss) on exchange rates				
- Sales	2,140,457	1,604,608	2,081,156	1,296,854
Total net gain (loss) on exchange rate				
recognized in profit before income tax	3,605,291	1,937,703	3,696,669	1,338,385

Credit risk

Credit risk is the potential financial loss resulting from the failure of a customer or a counterparty to settle its financial and contractual obligations to the Company as and when they fall due.

Management has a credit policy in place and the exposure to credit risk is monitored on an ongoing basis. Credit evaluations are performed on all customers requiring credit over a certain amount. At the reporting date, there were no significant concentrations of credit risk. The maximum exposure to credit risk is represented by the carrying amount of each financial asset in the statement of financial position. However, due to the large number of parties comprising the Company and its subsidiaries are customer base, management does not anticipate material losses from its debt collection.

Liquidity risk

The Company and its subsidiaries monitor its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Company's and its subsidiaries's operations and to mitigate the effects of fluctuations in cash flows.

Classification and measurement of financial asset and financial liabilities

Baht						
Consolidated financial statements						
	2021			2020		
	FVPL	Amortized cost	Total	FVPL	Amortized cost	Total
Financial assets						
Cash and cash equivalents	-	242,830,421	242,830,421	-	306,074,340	306,074,340
Trade and other current receivables	-	255,438,587	255,438,587	-	250,986,608	250,986,608
Current contract assets	-	10,215,840	10,215,840	-	12,797,613	12,797,613
Other non-current financial assets	39,614,195	-	39,614,195	6,957,944	-	6,957,944
Trade and other non-current receivables	-	9,182,297	9,182,297	-	11,251,986	11,251,986
Other non-current assets	-	28,306,373	28,306,373	-	25,186,460	25,186,460
	<u>39,614,195</u>	<u>545,973,518</u>	<u>585,587,713</u>	<u>6,957,944</u>	<u>606,297,007</u>	<u>613,254,951</u>
Financial liabilities						
Trade and other current payables	-	203,950,149	203,950,149	-	167,659,996	167,659,996
Current portion for lease liabilities	-	9,055,775	9,055,775	-	8,918,127	8,918,127
Short-term loan from related party	-	500,000	500,000	-	-	-
Lease liabilities	-	87,382,191	87,382,191	-	96,052,606	96,052,606
Other non-current liabilities	-	26,067,217	26,067,217	-	24,937,360	24,937,360
	<u>-</u>	<u>326,955,332</u>	<u>386,955,332</u>	<u>-</u>	<u>297,568,089</u>	<u>297,568,089</u>
Baht						
Separate financial statements						
	2021			2020		
	FVPL	Amortized cost	Total	FVPL	Amortized cost	Total
Financial assets						
Cash and cash equivalents	-	237,687,826	237,687,826	-	299,318,282	299,318,282
Trade and other current receivables	-	253,139,212	253,139,212	-	250,372,389	250,372,389
Current contract assets	-	8,316,793	8,316,793	-	12,054,033	12,054,033
Other non-current financial assets	39,614,195	-	39,614,195	6,957,944	-	6,957,944
Trade and other non-current receivables	-	9,182,927	9,182,927	-	11,251,986	11,251,986
Other non-current assets	-	28,306,373	28,306,373	-	25,186,460	25,186,460
	<u>39,614,195</u>	<u>536,633,131</u>	<u>576,247,326</u>	<u>6,957,944</u>	<u>598,183,150</u>	<u>605,141,094</u>
Financial liabilities						
Trade and other current payables	-	202,279,112	202,279,112	-	164,045,038	164,045,038
Current portion for lease liabilities	-	9,055,775	9,055,775	-	8,918,127	8,918,127
Lease liabilities	-	87,382,191	87,382,191	-	96,052,606	96,052,606
Other non-current liabilities	-	26,067,217	26,067,217	-	24,937,360	24,937,360
	<u>-</u>	<u>324,784,295</u>	<u>324,784,295</u>	<u>-</u>	<u>293,953,131</u>	<u>293,953,131</u>

33. RECONCILIATION OF LIABILITIES ARISING FROM FINANCING ACTIVITIES

Changes in the liabilities arising from financing activities for the years ended December 31, 2021 and 2020 are as follows:

	Baht			
	Consolidated financial statements / Separate financial statements			
	Balance as at	Cash flows	Non-cash transaction	Balance as at
	Jan. 1, 2021	Increase (decrease)*	Increase	Dec. 31, 2021
Lease liabilities	104,970,733	(11,277,500)	2,744,733	96,437,966
Total	104,970,733	(11,277,500)	2,744,733	96,437,966

	Baht			
	Consolidated financial statements / Separate financial statements			
	Balance as at	Cash flows	Non-cash transaction	Balance as at
	Jan. 1, 2020	Increase (decrease)*	Increase	Dec. 31, 2020
Lease liabilities	2,814,619	(738,630)	102,894,744	104,970,733
Total	2,814,619	(738,630)	102,894,744	104,970,733

* Financing cash flows included net proceed and repayment cash transactions in the statements of cash flows.

34. EVENT AFTER THE REPORTING PERIOD

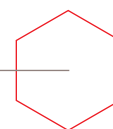
Dividend payment

According to the resolution of the Board of Directors' Meeting No. 1/2022 held on February 25, 2022, the Board of Directors approved dividend payment at Baht 0.10 per share for 584,500,000 issued and paid up ordinary shares, in total amount of Baht 58,450,000. The dividend declaration will be proposed to the next Annual General Shareholders' Meeting for approval.

35. APPROVAL OF FINANCIAL STATEMENTS

These financial statements were authorized for issue by the Board of Directors of the Company on February 25, 2022.

Section 4



Certification of Data Accuracy




Having carefully verified the information and data shown in this annual registration statement / annual report, HARN certifies that they are completely accurate, factual, and not misleading or lacking in essential detail. In addition:

1. The financial statements and data summarized in annual registration statement / annual report show essentially accurate information and data about its financial standing, performance, and cash flow of HARN and its subsidiaries.

2. It has put in place a good information and data disclosure system to ensure that it discloses essential details about itself and its subsidiaries completely and accurately, while ensuring due compliance.

3. It has put in place a good internal control system and ensured due compliance with such system. HARN has provided internal control system assessment details as of February 25, 2021, to the external auditor and the Audit Committee, including defects and key changes in the internal control system together with wrongdoing potentially affecting the preparation of the financial reports for itself and its subsidiaries.

As evidence that all documents are identical to those certified by HARN, has assigned Mr. Wirat Sukchai to put her initials on every page of the documents. Therefore, if he initials are missing on any given page, HARN will disown such data.

Name	Position	Signature
1. Mr. Wirat Sukchai	Authorized Director	
2. Mr. Jain Charnnarong	Authorized Director	
Authorized Name	Position	Signature
Mr. Wirat Sukchai	Authorized Director	

Attachment 1

Details of the Board, Executives, The person taking the highest responsibility in finance and accounting, The person supervising accounting and Company Secretary

The Board and Authorized

As of December 31, 2021



01 Dr. Thakol Nunthirapakorn

Independent Director (Non-Executive) / Chairman of the Board and Chairman of the Audit Committee



02 Miss Voranuch Supaibulpipat

Independent Director (Non-Executive) / Member of the Audit Committee and Chairperson of the Nomination and Remuneration Committee



03 Mr. Prasert Deejongkit

Independent Director (Non-Executive) and Member of the Audit Committee



04 Mr. Parkphum Wongpaitoon

Independent Director (Non-Executive) and Member of the Nomination and Remuneration Committee



05 Mrs. Valeeratn Chuerboonchai

Directors (Non-Executive)



06 Mr. Wirat Sukchai

Directors (Executive) / Chairman of the Executive Committee / (Acting) Chairman of the Risk Management Committee / Authorized Director



07 Mr. Thammanoon Tripetchr

Directors (Executive) / Member of the Executive Committee / Member of the Risk Management Committee / Authorized Director



08 Dr. Jain Charnnarong

Directors (Non-Executive) / Member of the Executive Committee and Authorized Director



09 Mrs. Sirima Iamsakulrat

Directors (Non-Executive) / Member of the Nomination and Remuneration Committee and Authorized Director

References information disclosed on HARN website, be in the links below, shall be deemed to be part of Form 56-1 One Report.

<https://www.harn.co.th/en/about/board-of-directors/>

The person taking the highest responsibility in finance and accounting, The person supervising accounting and Company Secretary

As of December 31, 2021



01 Mr. Wirat Sukchai

Chief Executive Officer / Managing Director: Fire Protection System, Air-conditioning system and sanitary and Investor Relations



02 Mr. Thammanoon Tripetchr

Managing Director : Digital Printing System



03 Mr. Wisit Wachiralappaitoon

Chief Financial Officer and The person taking the highest responsibility in finance and accounting



04 Mrs. Varinkan Teraumranon

Chief operating officer



05 Mr. Rattanaphan Mukhariwattananon

Sales Director: Fire Protection System, Air-conditioning system and sanitary



06 Mr. Pracha Phromphornchai

Project Sales Director: Fire Protection System, Air-conditioning system and sanitary



07 Mr. Suchat Suwatnodom

Project Sales Director (Petrochemical): Fire Protection System, Air-conditioning system and sanitary



08 Mr. Kittiphong Kittimethawenun

Sales Director: Refrigeration System



09 Mr. Vachiravit Akaraseranee

Project Sales Director: Refrigeration System



10 Mr. Sukit Litikorn

Engineering Support Director: Refrigeration System



11 Mr. Withoon Thamee

Sales Director: Digital Printing System



12 Mr. Pongsawat Penglengpol

Sales Special Products Director: Digital Printing System



13 Miss Ananya Proyngoen

The person supervising accounting



14 Miss Wasukan Boonmee

Company Secretary

References information disclosed on HARN website, be in the links below, shall be deemed to be part of Form 56-1 One Report.

<https://www.harn.co.th/en/management/> and

<https://www.harn.co.th/en/investor-relations/shareholders-information/information/>



Dr. Thakol Nunthirapakorn

Independent Director (Non-Executive) /

Chairman of the Board and Chairman of the Audit Committee

Age 76 Yrs.

• **Shareholding proportion (As at December 31, 2021)** - None -

• **Appointment date** (September 5, 2012)
(HARN was listed on the Stock Exchange of Thailand in 2014, resulting in holding the position continuously.)

• **Education**

- Ph.D. (Accounting, MIS, Economics),
University of Arkansas, Fayetteville, Arkansas, USA.
- M.B.A. (Quantitative Analysis),
Northeast Louisiana University, Monroe, Louisiana, USA.
- B.S. (Finance), West Liberty State University, West Virginia, USA.
- High Vocational Certificate (Finance and Banking),
University of the Thai Chamber of Commerce

• **Training participation**

Training program of Thai Institute of Directors Association (IOD):

1. Role of the Chairman Program (RCP), Class 43/2018
2. Anti-Corruption the Practical Guide (ACPG) Class 36/2017
3. Chairman Forum (R-CF), Class 1/2016
4. Directors Certification Program (DCP), Class 228/2016
5. Ethical Leadership Program (ELP), Class 3/2016
6. Audit Committee Program (ACP), Class 8/2005
7. Director Accreditation Program (DAP), Class 8/2004

Other courses:

1. Preliminary to Corporate Sustainability (P01)
2. Corporate Sustainability Strategy (S01-S03)
3. Sustainability Risk and Materiality Analysis (S04)
4. Sustainability Evaluation and Data Management (S05)
5. Thai economic for 2020
6. Internal Audit's Challenge in Value Adding

• **Work experience in the 5 preceding years**

- 2019 - Present Director and Member of the Audit Committee,
United Paper Public Company Limited
- 2015 - Present Independent Director, Chairman of the Board of Directors
and Chairman of Audit Committee,
Harn Engineering Solutions Plc.
- 2002 - Present Independent Director and Chairman of Audit Committee,
Ratchthani Leasing Plc.
- 2012 - 2015 Independent Director and Chairman of Audit Committee,
Harn Engineering Solutions Plc.
- 2012 - 2015 Dean of Accounting,
University of the Thai Chamber of Commerce
- 2005 - 2011 Vice-Rector for Administration,
University of the Thai Chamber of Commerce

• **Other Positions**

1. Listed Company (2)
 - Ratchthani Leasing Plc.
 - United Paper Plc.
2. Limited Company/Public Company Limited - None -
3. Other Organizations/Institutions - None -
4. State Enterprise - None -

• **Having a Special Interest that is Different from Other Directors** - None -

• **Family Relation with Other Directors** - None -

• **Dispute in the 10 Preceding Years** - None -

• **Participation in administration, staff, employees or consultants who receive a regular salary** - None -

• **Being a professional service provider, such as an auditor, legal advisor** - None -

• **Significant business relationships that May result in inability to perform duties independently** - None -



Miss Voranuch Supaibulpipat

Independent Director (Non-Executive) /
Member of the Audit Committee and
Chairperson of the Nomination and
Remuneration Committee

Age 58 Yrs.

- **Shareholding proportion (As at December 31, 2021)** - None -
- **Appointment date:** September 5, 2012
(HARN was listed on the Stock Exchange of Thailand in 2014, resulting in holding the position continuously.)
- **Education**
 - MBA, Middle Tennessee State University, USA.
 - BA (Economics), Chulalongkorn University
- **Training participation**
Training program of Thai Institute of Directors Association (IOD):
 1. Board Nomination & Compensation Program (BNCP), Class 8/2019
 2. Director Certification Program (DCP), Class 281/2019
 3. Director Accreditation Program (DAP), Class SET/2012**Other courses:**
 1. Executive Development Program, Thai Listed Companies Association, Class 10
- **Work experience in the 5 preceding years:**
 - 2018 - Present Independent Director, Member of the Audit Committee and Chairperson of the Nomination and Remuneration Committee, Harn Engineering Solutions Plc.
 - 2012 - 2018 Independent Director and Member of the Audit Committee, Harn Engineering Solutions Plc.
 - 1987 - 2018 First Senior Vice President, TISCO Financial Group Plc.
- **Other Positions**
 1. Listed Company - None -
 2. Limited Company/Public Company Limited - None -
 3. Other Organizations/Institutions - None -
 4. State Enterprise - None -
- **Having a Special Interest that is Different from Other Directors** - None -
- **Family Relation with Other Directors** - None -
- **Dispute in the 10 Preceding Years** - None -
- **Participation in administration, staff, employees or consultants who receive a regular salary** - None -
- **Being a professional service provider, such as an auditor, legal advisor** - None -
- **Significant business relationships that May result in inability to perform duties independently** - None -



Mr. Prasert Deejongkit

Independent Director (Non-Executive)
and Member of the Audit Committee

Age 55 Yrs.

- **Shareholding proportion (As at December 31, 2021)** - None -
- **Appointment date:** April 23, 2021
- **Education**
 - MBA (Financial Management (2nd honours)), National Institutes of Development Administration (NIDA)
 - LLB, Sukhothai Thamathirath Open University, Nonthaburi
 - BE (Mechanical Engineering), Chulalongkorn University
- **Training participation**
Training program of Thai Institute of Directors Association (IOD):
 1. Director Accreditation Program (DAP), Class 184/2021**Other courses:**
 1. Islamic Banking and Finance: Legal, Regulatory & Risk Management, Euromoney Training, November 2008
 2. Sasin Executives Program (SEP) 24, Sasin Graduate Institute of Business Administration of Chulalongkorn University, September 2010
 3. Leadership Succession Program (LSP) 2, Institute of Research and Development for Public Enterprises of Thailand Foundation (IRDPT), June 2014
 4. Strategic and Innovation for Business in Asia (SIBA) 4, CMMU, Mahidol University and Sloan School of Management, Massachusetts Institute of Technology, June 2015
 5. Executive Development Program (EDP) 12, Fiscal Policy Research Institute Foundation, Ministry of Finance, August 2016
- **Work experience in the 5 preceding years:**
 - 2021 - Present Independent Director, Member of the Audit Committee, Harn Engineering Solutions Plc.
 - 2021 - Present Director, CMDP Digital Infrastructure for Capital Market Co., Ltd.
 - 2020 - Present EVP & Manager, Corporate Finance Department, Bangkok Bank Plc.
 - 2019 - Present Director, TRIS Corporation Limited
 - 2015 - Present Director, Club's Board of Directors, Investment Banking Club, Association of Securities Companies (Thailand)
 - 2013 - Present Director, the Registered Provident Fund of Bangkok Bank Plc.
 - 2020 - 2021 Director of Sub-Committee on Director on Debt Securities, The Securities and Exchange Commission
 - 2009 - 2019 SVP & Manager, Corporate Finance Department, Bangkok Bank Plc.
- **Other Positions**
 1. Listed Company (1)
 - Bangkok Bank PCL
 2. Limited Company/Public Company Limited (2)
 - TRIS Corporation Limited
 - CMDP Digital Infrastructure for Capital Market Co., Ltd.
 3. Other Organizations/Institutions (2)
 - Investment Banking Club, Association of Securities Companies (Thailand)
 - The Registered Provident Fund of Bangkok Bank Public Company Limited
 4. State Enterprise - None -
- **Having a Special Interest that is Different from Other Directors** - None -
- **Family Relation with Other Directors** - None -
- **Dispute in the 10 Preceding Years** - None -
- **Participation in administration, staff, employees or consultants who receive a regular salary** - None -
- **Being a professional service provider, such as an auditor, legal advisor** - None -
- **Significant business relationships that May result in inability to perform duties independently** - None -



Mr. Parkphum Wongpaitoon

Independent Director (Non-Executive)
and Member of the Nomination and
Remuneration Committee

Age 81 Yrs.

- **Shareholding proportion** 4,230,325 shares (0.72%)
(As at December 31, 2021)
- **Appointment date** February 25, 2021
- **คุณวุฒิการศึกษา**
 - MSc. (Electrical Engineering), Illinois Institute of Technology, USA.
 - BSc. (Electrical Engineering), University of Illinois, USA.
- **Training participation**
Training program of Thai Institute of Directors Association (IOD):
 1. Anti-Corruption for Executive Program (ACEP), Class 14/2015
 2. Role of Chairman Program (RCP), Class 36/2015
 3. Director Accreditation Program (DAP), Class 42/2005**Other courses:**
 1. ISO : 2000 Quality System Management Course
 2. Self-Improvement (7-Habits) Course
 3. Summary of the New Labor Protection Act B.E. 2551 Course
 4. Internal Audit and Control for Efficiency Enhancement Course
 5. "Lean" Accounting Course
 6. EVA for Executives Course
 7. Application of the Balance Scorecard & KPIs Course
- **Work experience in the 5 preceding years:**
 - 2021 - Present Independent Director / Member of the Nomination and Remuneration Committee, Harn Engineering Solutions Plc.
 - 2015 - 2021 Director, Harn Engineering Solutions Plc.
 - 1999 - 2017 Director, Harn Engineering Co., Ltd.
 - 2002 - 2016 Director, QIIS Co., Ltd.
 - 1999 - 2016 Director, Chillmatch Co., Ltd.
 - 2012 - 2015 Chairman of the Board, Harn Engineering Solutions Plc.
 - 2001 - 2012 Member of the Executive Committee, Fire Victor Co., Ltd.
 - 1998 - 2001 Managing Director, Harn Engineering Group
 - 1992 - 1997 Managing Director, Thailand Carpet Manufacturing Plc.
 - 1985 - 1991 Director and General Manager, Carpet International Thailand Plc.
- **Other Positions**
 1. Listed Company - None -
 2. Limited Company/Public Company Limited - None -
 3. Other Organizations/Institutions - None -
 4. State Enterprise - None -
- **Having a Special Interest that is Different from Other Directors** - None -
- **Family Relation with Other Directors** - None -
- **Dispute in the 10 Preceding Years** - None -
- **Participation in administration, staff, employees or consultants who receive a regular salary** - None -
- **Being a professional service provider, such as an auditor, legal advisor** - None -
- **Significant business relationships that May result in inability to perform duties independently** - None -



Mrs. Valeeratn Chuerboonchai

Directors (Non-Executive)

Age 67 Yrs.

- **Shareholding proportion** 5,677,686 shares (0.97%)
As at December 31, 2021
- **Appointment date** September 5, 2012
(HARN was listed on the Stock Exchange of Thailand in 2014, resulting in holding the position continuously.)
- **Education:**
 - B.B.A. (Accounting), Assumption University
- **Training participation**
Training program of Thai Institute of Directors Association (IOD):
 1. Financial Statements for Directors (FSD), Class 28/2015
 2. Director Certification Program (DCP), Class 205/2015
 3. Anti-Corruption for Executive Program (ACEP), Class 14/2015
 4. Director Accreditation Program (DAP), Class SET/2012**Other courses:**
 1. 12 Quality Leaders toward Digital Age and AEC Course
 2. Risk Management of Organization Course
 3. 4 Super Strategic Ideas Course
 4. Finance for Non-finance Executive Course
 5. The Habits of Highly Effective Working Person Course
 6. Marketing 3.0 Human Spirit Marketing Course
 7. Insight of Income Tax on Wages and Welfare Course
 8. New Accounting Standard and Impact on Business Course
 9. Accounting and Finance Data for Executives Course
- **Work experience in the 5 preceding years:**
 - 2018 - Present Director, Nutrix Public Company Limited
 - 2018 - Present Director, Harn Engineering Solutions Plc.
 - 2012 - 2018 Director and Member of the Executive Committee, Harn Engineering Solutions Plc.
 - 2012 - 2017 Assistant Managing Director: Operations, Harn Engineering Solutions Plc.
 - 2007 - 2016 Director and Member of the Executive Committee, Chillmatch Co., Ltd.
 - 2007 - 2016 Director and Member of the Executive Committee, QIIS Co., Ltd.
 - 2009 - 2015 Director, Promark Co., Ltd.
 - 2007 - 2012 Finance Director, Fire Victor Co., Ltd.
- **Other Positions**
 1. Listed Company - None -
 2. Limited Company/Public Company Limited (1)
 - Nutrix Public Company Limited
 3. Other Organizations/Institutions - None -
 4. State Enterprise - None -
- **Conflict of Interest in the company** - None -
- **Family Relation with Other Director** - None -
- **Dispute in the 10 Preceding Years** - None -



Mr. Wirat Sukchai

Directors (Executive) /
Chairman of the Executive Committee /
(Acting) Chairman of the Risk Management
Committee / Authorized Director / Chief
Executive Officer and Managing Director: Fire
Protection System, Air-conditioning system
and sanitary

Age 56 yrs.

- **Shareholding proportion** 87,775,858 shares (15.02%)
(As at December 31, 2021)
- **Appointment date** September 5, 2012
(HARN was listed on the Stock Exchange of Thailand in 2014, resulting in holding the position continuously.)
- **Education**
 - M.B.A. (E-MBA), National Institute of Development Administration (NIDA)
 - B.B.A. (Sales and Marketing), Bangkok University
- **Training participation**
Training program of Thai Institute of Directors Association (IOD):
 1. How to Develop a Risk Management (HRP) Class 12/2017
 2. Successful Formulation & Execution of Strategy (SFE), Class 24/2015
 3. Director Certification Program (DCP), Class 204/2015
 4. Role of Chairman Program (RCP), Class 36/2015
 5. Anti-Corruption for Executive Program (ACEP), Class 14/2015
 6. Director Accreditation Program (DAP), Class SET/2012**Other courses:**
 1. Senior Executive Program (CMA), Class 29
 2. ISO 9001 : 2015 Understanding and Implementation
 3. 12 Quality Leaders toward Digital Age and AEC Course
 4. Risk Management of Organization Course
 5. 4 Super Strategic Ideas Course
 6. Finance for Non-finance Executive Course
 7. Marketing 3.0 : Human Spirit Marketing Course
 8. Vice Excellence Course
 9. Root Cause Analysis & Corrective Actions Course
 10. Academic Development and Enhancement 4th Refreshment Program
 11. TQM : Total Quality Management Course
 12. Inspection of Building Fire Safety System Course
- **Work experience in the 5 preceding years**
 - 2016 - Present Chief Executive Officer and Managing Director: Fire Protection System, Air-conditioning System and Sanitary, Harn Engineering Solutions Plc.
 - 2012 - 2016 Managing Director, Harn Engineering Solutions Plc.
 - 2002 - 2012 General Manager, Fire Victor Co., Ltd.
- **Other Positions**
 1. Listed Company - None -
 2. Limited Company/Public Company Limited - None -
 3. Other Organizations/Institutions - None -
 4. State Enterprise - None -
- **Conflict of Interest in the company** - None -
- **Family Relation with Other Director** - None -
- **Dispute in the 10 Preceding Years** - None -



Mr. Thammanoon Tripetchr

Directors (Executive) /
Member of the Executive Committee /
Member of the Risk Management
Committee / Authorized Director and
Managing Director: Digital Printing System

Age 54 Yrs.

- **Shareholding proportion** 22,373,795 shares (3.83%)
(As at December 31, 2021)
- **Appointment date** November 1, 2016
- **Education**
 - B.B.A. (Management), Assumption University of Thailand
- **Training participation**
Training program of Thai Institute of Directors Association (IOD):
 1. Director Certification Program (DCP), Class 211/2015
 2. Successful Formulation & Execution of Strategy (SFE), Class 24/2015
 3. Financial Statements for Directors (FSD), Class 28/2015
 4. Director Accreditation Program (DAP), Class 116/2015**Other courses:**
 1. Chief Transformation Officer (CTO)
 2. Preliminary to Corporate Sustainability (P01)
 3. Strategic CSR Management (S01)
 4. Supply Chain and Stakeholder Engagement (S02)
 5. Corporate Social Initiatives for Sustainable Development (S03)
 6. ISO 9001 : 2015 Understanding and Implementation
 7. Safety Officer
 8. Development of strategic thinking
 9. Leadership Skill
 10. Internal Quality Audit
 11. Application of KPIs to ISO 9001: 2000
 12. CRM - Strategy & Technology
- **Work experience in the 5 preceding years**
 - 2021 - Present Director, Harnvietnam Co., Ltd.
 - 2020 - Present Director, Aiyaraharn Co., Ltd.
 - 2016 - Present Managing Director: Digital Printing System, Harn Engineering Solutions Plc.
 - 2015 - 2016 Managing Director, Q II S Co., Ltd.
 - 2014 - 2016 Director, Chillmatch Co., Ltd.
- **Other Positions**
 1. Listed Company - None -
 2. Limited Company/Public Company Limited (2)
 - Aiyaraharn Co., Ltd.
 - Harnvietnam Co., Ltd.
 3. Other Organizations/Institutions - None -
 4. State Enterprise - None -
- **Conflict of Interest in the company** - None -
- **Family Relation with Other Director** - None -
- **Dispute in the 10 Preceding Years** - None -



Dr. Jain Charnnarong

Directors (Non-Executive) /
Member of the Executive Committee
and Authorized Director

Age 55 Yrs.



Mrs. Sirima Iamsakulrat

Directors (Non-Executive) /
Member of the Nomination and
Remuneration Committee and
Authorized Director

Age 59 Yrs.

- **Shareholding proportion** 72,319,130 shares (12.37%)
(As at December 31, 2021)

- **Appointment date** April 28, 2017

- **Education**

- Doctoral Philosophy of Mechanical Engineering, Minor in Management, Massachusetts Institute of Technology, Cambridge, USA.
- Master of Science in Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, USA.
- Bachelor of Engineering (First Class of Honor), Chulalongkorn University, Thailand

- **Training participation**

Training program of Thai Institute of Directors Association (IOD):

1. How to Develop a Risk Management Plan (HRP), Class 8/2015
2. Successful Formulation & Execution of Strategy (SFE), Class 23/2015
3. Family Business Sustainability (FBS), Class 1/2014
4. Director Certification Program (DCP), Class 173/2013

Training Other:

1. The direction of driving business in accordance with the sustainable development goals
2. Directions and trends of key technologies to Digital Transformation
3. Preliminary to Corporate Sustainability (P01)
4. Strategic CSR Management (S01)
5. Supply Chain and Stakeholder Engagement (S02)
6. Corporate Social Initiatives for Sustainable Development (S03)
7. Sustainability Risk and Materiality Analysis (S04)
8. Sustainability Evaluation and Data Management (S05)
9. Sustainability Reporting (S06)

- **Work experience in the 5 preceding years**

- 2020 - Present Director, Aiyara Harn Co., Ltd.
- 2017 - Present Director and Member of the Executive Committee, Harn Engineering Solutions Plc.
- 2017 - Present Director, Jainnopsiri Co., Ltd.
- 2017 - Present Director, Phraboriban Co., Ltd.
- 2007 - Present Director, Harn Engineering Co., Ltd.
- 2001 - 2014 Founder & CEO, Siam General Aviation Company Limited (SGA)
- 1999 - 2001 Directors & General Manager, Siam Land Flying Company Limited (SGA)
- 1998 - 2000 Business Analyst, Siam Commercial Bank Public Company Limited

- **Other Positions**

1. Listed Company - None -
2. Limited Company/Public Company Limited (4)
 - Harn Engineering Co., Ltd.
 - Aiyara Harn Co., Ltd.
 - Jainnopsiri Co., Ltd.
 - Phraboriban Co., Ltd.
3. Other Organizations/Institutions - None -
4. State Enterprise - None -

- **Conflict of Interest in the company** - None -

- **Family Relation with Other Director**

The younger brother of Mrs. Sirima Iamsakulrat

- **Dispute in the 10 Preceding Years** - None -

- **Shareholding proportion** 84,234,151 shares (14.41%)
(As at December 31, 2021)

- **Appointment date** September 5, 2012

(HARN was listed on the Stock Exchange of Thailand in 2014, resulting in holding the position continuously.)

- **Education**

- M.B.A., Stanford University, USA.
- B.Econ. (Economics), Chulalongkorn University

- **Training participation**

Training program of Thai Institute of Directors Association (IOD):

1. Board Nomination & Compensation Program (BNCP), Class 5/2018
2. Successful Formulation & Execution of Strategy (SFE), Class 24/2015
3. Director Certification Program (DCP), Class 211/2015
4. Director Accreditation Program (DAP), Class SET/2012

Training Other:

1. Preliminary to Corporate Sustainability (P01)
2. Strategic CSR Management (S01)
3. Supply Chain and Stakeholder Engagement (S02)
4. Corporate Social Initiatives for Sustainable Development (S03)
5. Sustainability Risk and Materiality Analysis (S04)
6. Sustainability Evaluation and Data Management (S05)
7. Sustainability Reporting (S06)
8. Challenges of internal auditors towards value creation in the current economic climate

- **Work experience in the 5 preceding years**

- 2018 - Present Director and Member of the Nomination and Remuneration Committee, Harn Engineering Solutions Plc.
- 2017 - Present Director, Jainnopsiri Co., Ltd.
- 2017 - Present Director, Phraboriban Co., Ltd.
- 1989 - Present Member of the Executive Committee, Harn Engineering Co., Ltd.
- 2016 - 2018 Director and Chairperson of the Executive Committee, Harn Engineering Solutions Plc.
- 2012 - 2016 Member of the Executive Committee, Harn Engineering Solutions Plc.

- **Other Positions**

1. Listed Company - None -
2. Limited Company/Public Company Limited (3)
 - Harn Engineering Co., Ltd.
 - Jainnopsiri Co., Ltd.
 - Phraboriban Co., Ltd.
3. Other Organizations/Institutions - None -
4. State Enterprise - None -

- **Conflict of Interest in the company** - None -

- **Family Relation with Other Director**

The sister of Dr. Jain Charnnarong

- **Dispute in the 10 Preceding Years** - None -



Mr. Wisit Wachiralappaitoon

Chief Financial Officer
and The person taking the highest
responsibility in finance and accounting
Age 47 Yrs.

- **Shareholding proportion** 542,345 shares (0.09%)
(As at December 31, 2021)
- **Appointment date** March 16, 2016
- **Education**
 - Master of Science (Accounting), Thammasat University
 - LL.B. (Laws), Ramkhamhaeng University
 - B.B.A. (Accounting), Ramkhamhaeng University
- **Training participation**
 1. Training for Continuing Professional Knowledge (CPD) for auditors and accountants According to the regulations of the Federation of Accounting Professions.
 2. Executive Accountant Testing Program (Financial Strategy)
 3. Training for Continuing Professional Knowledge (CPD) for auditors and accountants According to the regulations of the Federation of Accounting Professions.
 4. Executive Accountant Testing Program (Financial Strategy)
 5. Update tax law 2020 and tax issues that corporations should not miss.
 6. Account Management for Listed Company (SET)
 7. Financial Management Strategy To revive the organization and create growth in the New Normal
 8. The New CFO (Crisis Finance Officer) (SET)
 9. Changes in TFRS15, and Draft TFRS9, TFRS16, effective 2019 and 2020
 10. Prepare Financial Reporting Standard No. 9 Financial Instruments (TFRS 9) and No. 16 Lease Agreement (TFRS 16)
- **Work experience**
 - 2019 - Present Chief Financial Officer, Harn Engineering Solutions Plc.
 - 2016 - 2019 Finance Director, Harn Engineering Solutions Plc.
 - 2012 - 2016 Chief Financial Officer, Hot Pot Plc.



Mrs. Varinkan Teraumranon

Chief operating officer
Age 56 Yrs.

- **Shareholding proportion** 1,222,162 shares (0.21%)
(As at December 31, 2021)
- **Appointment date** October 10, 2019
- **Education**
 - BBA (Accounting), Rajamangala Institute of Technology
- **Training participation**

Training program of Thai Institute of Directors Association (IOD):

 1. Effective Minute Taking Plan (EMT), Class 36/2016
 2. Company Reporting Program (CRP), Class 16/2016
 3. Company Secretary Program (CSP), Class 72/2016
 4. How to Develop a Risk Management Plan (HRP), Class 8/2015

Other courses:

 1. Personal Data Protection Act (PDPA)
 2. CSR for Corporate Sustainability(P01)
 3. Business Sustainability Strategy (S01-S03)
 5. Sustainability Risk and Materiality Analysis (S04)
 6. CSR Evaluation and Data Management (S05)
 7. Sustainability Reporting (S06)
 8. Organizational Success Assessment through KPI Course
 9. 360° Marketing Communication Techniques Course
 10. Finance for Non-finance Executive Course
 11. Finance for the Boss Course
- **Work experience**
 - 2021 - Present Chief operating officer, Harn Engineering Solutions Plc.
 - 2019 - 2021 Chief operating officer and Company Secretary, Harn Engineering Solutions Plc.
 - 2016 - 2019 Corporate Governance Director and Company Secretary, Harn Engineering Solutions Plc.
 - 2016 - 2017 Assistant Managing Director: Corporate Governance and Secretary Company, Harn Engineering Solutions Plc.
 - 2014 - 2016 Operation Support Director (General Management Group), Harn Engineering Solutions Plc.



Mr. Rattanaphan Mukhariwattananon

Sales Director: Fire Protection System,
Air-conditioning system and sanitary

Age 43 yrs.

- **Shareholding proportion** 3,087,621 shares (0.53%)
(As at December 31, 2021)
- **Appointment date** January 1, 2014
- **Education**
 - Executive M.B.A. KU 25, Kasetsart University
 - B.Ind.Tech. (Mechanical), Sriprathum university
- **Training participation**
 1. Basic of Air-conditioning System
 2. HVAC Training by Victaulic
 3. CSR for Corporate Sustainability (P01)
 4. ISO 9001 : 2015 Understanding and Implementation
 5. Risk Management Certificate Program, Class 10
 6. Sprinkler System Design
 7. Warehouse Sprinkler System and Clean Agent Fire Extinguishing Design
- **Work experience**
 - 2014 - Present Sales Director: Fire Protection System, Air-conditioning system and sanitary, Harn Engineering Solutions Plc.
 - 2008 - 2013 Sales Manager, Fire Victor Co., Ltd.
 - 2003 - 2008 Sales Engineer, Fire Victor Co., Ltd.



Mr. Pracha Phromphornchai

Project Sales Director: Fire Protection
System, Air-conditioning system and
sanitary

Age 48 yrs.

- **Shareholding proportion** 11,540,145 shares (1.97%)
(As at December 31, 2021)
- **Appointment date** January 1, 2014
- **Education**
 - B.Eng. (Mechanical), King Mongkut's University of Technology Thonburi.
- **Training participation**
 1. Knowledge of halocarbon fire suppression system
 2. ISO 9001 : 2015 Understanding and Implementation
 3. ISO 9000:2000 Introduction & Implementation's training course
 4. Industrial Sales's training course
 5. Aggressive Sales Plan's training course.
 6. Risk Management of Organization's training course.
- **Work experience**
 - 2014 - Present Project Sales Director: Fire Protection System, Air-conditioning system and sanitary, Harn Engineering Solutions Plc.
 - 2003 - 2013 Project Sales Manager, Fire Victor Co., Ltd.
 - 2002 - 2003 Sales Engineer, Tyco International (Thailand) Co., Ltd.



Mr. Suchat Suwatnodom

Project Sales Director (Petrochemical):
Fire Protection System, Air-conditioning
system and sanitary

Age 48 yrs.

- **Shareholding proportion** 635,095 shares (0.11%)
(As at December 31, 2021)
- **Appointment date** March 2, 2015
- **Education**
 - B.Eng. (Industrial), Chiang Mai University
- **Training participation**
 1. ISO 9001 : 2015 Understanding and Implementation
 2. Leadership Skill for Job improvement
 3. ANSUL Gas suppression Design and training
 4. Professional Selling and Marketing Skills
 5. Code of Conduct And business
 6. Business Preparation Before AEC
- **Work experience**
 - 2015 - Present Project Sales Director (Petrochemical): Fire Protection System, Air-conditioning system and sanitary, Harn Engineering Solutions Plc.
 - 2014 - 2015 Sale Director Trinity Dynamic Co., Ltd.
 - 1998 - 2014 Sales Manager, Guardfire Limited



Mr. Kittiphong Kittimethawenun

Sales Director: Refrigeration System

Age 36 yrs.

- **Shareholding proportion** 70,564 shares (0.012%)
(As at December 31, 2021)
- **Appointment date** January 1, 2020
- **Education**
 - B.Eng. (Refrigeration and Air-Conditioning), King Mongkut's University of Technology North Bangkok
- **Training participation**
 1. Knowledge of BITZER screw compressors
 2. Knowledge of electricity, electrical installation design and intelligent system technology (Internet of Thing)
- **Work experience**
 - 2020 - Present Sales Director: Refrigeration System, Harn Engineering Solutions Plc.
 - 2015 - 2020 Sale Manager, Harn Engineering Solutions Plc.



Mr. Vachiravit Akaraseranee

Project Sales Director:
Refrigeration System

Age 31 yrs.

- **Shareholding proportion** 62,552 shares (0.011%)
(As at December 31, 2021)
- **Appointment date** January 1, 2020
- **Education**
 - B.Eng. (Mechanical), Sirindhorn International Institute of Technology, Thammasat University
- **Training participation**
 1. Knowledge of BITZER screw compressors
 2. Knowledge of electricity, electrical installation design and intelligent system technology (Internet of Thing)
- **Work experience**
 - 2020 - Present Project Sales Director: Refrigeration System, Harn Engineering Solutions Plc.
 - 2016 - 2020 Sale Manager, Harn Engineering Solutions Plc.



Mr. Sukit Litikorn

Engineering Support Director:
Refrigeration System

Age 47 yrs.

- **Shareholding proportion** 526,853 shares (0.090%)
(As at December 31, 2021)
- **Appointment date** December 1, 2016
- **Education**
 - D.Eng. (Mechanical), Kasetsart University
 - M.Eng. (Mechanical), Chulalongkorn University
 - B.Eng. (Mechanical), Kasetsart University
- **Training participation**
 1. Knowledge of electricity, electrical installation design and intelligent system technology (Internet of Thing)
 2. Risk Management, Chulalongkorn University
 3. Bitzer International Seminar and Training, "Compressor and Application of Refrigeration System", Stuttgart, Germany
 4. Creative Sales and Marketing Strategies and Prediction
 5. Technical knowledge of KUBA products
- **Work experience**
 - 2015 - Present Engineering Support Director: Refrigeration System, Harn Engineering Solutions Plc.
 - 2004 - 2015 Engineering Manager / Sales Manager, Chillmatch Co., Ltd.
 - 2001 - 2014 Engineer, Chillmatch Co., Ltd.
 - 2000 - 2001 Consulting Air Condition Engineer, Project Planning Service Co., Ltd.



Mr. Withoon Thamee

Sales Director: Digital Printing System

Age 43 yrs.

- **Shareholding proportion** 612,773 shares (0.105%)
(As at December 31, 2021)
- **Appointment date** December 1, 2016
- **Education**
 - M.B.A. (Management), Ramkhamhaeng University
 - B.Eng. (Electrical), Mahanakorn University of Technology
- **Training participation**
 1. Personal Data Protection Act (PDPA)
 2. Open to the medical device industry
 3. CSR for Corporate Sustainability (P01)
 4. Business Sustainability Strategy (S01-S03)
 5. Advance Strategic Planning: ASP Model The 21st Century Strategic Management Tool
 6. Development of strategic thinking.
 7. Finance for Non-finance Executive
- **Work experience**
 - 2015 - Present Sales Director: Digital Printing System, Harn Engineering Solutions Plc.
 - 2006 - 2015 Director Sales Inkjet (Bangkok-OCG-Country) / Sales Engineer, QIIS Co., Ltd.
 - 1999 - 2005 Technician/ Service Engineer /Sales Engineer, B.Grimm Power Co., Ltd.



Mr. Pongsawat Penglengpol

Sales Special Products Director:
Digital Printing System

Age 48 yrs.

- **Shareholding proportion** 8,689 shares (0.001%)
(As at December 31, 2021)
- **Appointment date** March 5, 2018
- **Education**
 - M.B.A. (Business Administration), Mahasarakham University
 - B.B.A. (Personnel Administration), University of the Thai Chamber of Commerce
- **Work experience**
 - 2018 - Present Sales Special Products Director: Digital Printing System, Harn Engineering Solutions Plc.
 - 2016 - 2018 Sales Director Huynh Long Industrial Equipment JSC
 - 2014 - 2016 Regional Sales Manager Videojet Technology (S) PTE LTD
 - 2005 - 2014 Sales Manager: Laser Product, QIIS Co., Ltd.



Miss Ananya Proyngoen

The person supervising accounting
Age 48 yrs.

- **Shareholding proportion** 73,832 shares (0.013%)
(As at December 31, 2021)
- **Appointment date** December 1, 2016
- **Education**
 - Master of Accountancy (M.Acc.), Chulalongkorn University
 - B.B.A. (Accounting), Rajamangala Institute of Technology Chakrabongsa Bhuvanarth Campus
- **Training participation**
 1. Professional tax accounting
 2. FOCUS-Key Issues in Financial Statement Audit
 3. Inventory accounting
 4. Tips for preparing and presenting a simple cash flow statement
 5. Executive Accountant Testing Program (Financial Strategy)
- **Work experience**
 - 2016 - Present Account Manager, Harn Engineering Solutions Plc.
 - 2014 - 2015 Account Manager, I AM Consulting Co., Ltd.
 - 2013 - 2014 Accounting Supervisor, Yum Restaurants International



Miss Wasukan Boonmee

Company Secretary
Age 42 yrs.

- **Shareholding proportion** 42,692 shares (0.007%)
(As at December 31, 2021)
- **Appointment date** August 11, 2021
- **Education**
 - B.B.A. (Business Computer), Chandrakasem Rajabhat University
- **Training participation**
Training program of Thai Institute of Directors Association (IOD):
 1. Effective Minute Taking Plan (EMT), Class 65/2015
 2. Company Secretary Program (CSP), Class 64/2015
- **Work experience**
 - 2021 - Present Company Secretary, Harn Engineering Solutions Plc.
 - 2016 - 2021 Assistant Company Secretary, Harn Engineering Solutions Plc.
 - 2015 - 2016 Company Secretary and Secretary of the Audit Committee, Chillmatch Co., Ltd.
 - 2007 - 2015 Administrative, Harn Engineering Co., Ltd.

Details Position the Board and the Management of HARN / Subsidiaries / Related Companies

Name		Company	Position of HARN / Subsidiaries / Related Companies								
			Harn Engineering Solutions Plc.	Ratchhani Leasing Plc.	United Paper Plc.	Nutrix Plc.	Jainnopsiri Co., Ltd.	Phraboriban Co., Ltd.	Harn Vietnam Co., Ltd.	Aiyara Harn Co., Ltd.	Bangkok bank Plc.
1. Mr. Thakol	Nunthirapakorn	X , /		/	/						
2. Mr. Wirat	Sukchai	/ , // , ///									
3. Mr. Thammanoon	Tripetchr	/ , // , ///						/ , //	/		
4. Mrs. Sirima	Iamsakulrat	/	/				/	/			
5. Mr. Jain	Charnnarong	/ , //	/				/	/	/		
6. Mrs. Valeeratn	Chuerboonchai	/				/					
7. Mr. Parkphum	Wongpaitoon	/									
8. Mr. Prasert	Deejongkit	/								/	
9. Miss Voranuch	Supaibulpipat	/									
10. Mr. Wisit	Wachiralappaitoon	// , ///									
11. Mrs. Varinkan	Teraumaranon	// , ///									
12. Mr. Pracha	Phromphornchai	///									
13. Mr. Rattanaphan	Mukhariwattananon	///									
14. Mr. Suchat	Suwatnodaom	///									
15. Mr. Kittiphong	Kittimethawenun	///									
16. Mr.Vachiravit	Akaraseranee	///									
17. Mr. Sukit	Litikorn	///									
18. Mr. Withoon	Thamee	///									
19. Mr. Pongsawat	Penglengpol	///									

Note : X = Chairman / = Director // = Executive /// = Management

Attachment 2

Details of Subsidiaries Directors

Han Vietnam Company Limited

The Board of Directors at the Meeting No. 5/2018, held on November 9, 2018 resolved to establish a subsidiary in Vietnam which HARN owns 100%. To support the market expansion into Asian countries AEC and enhance the efficiency of customer service base in Ho Chi Minh City, Vietnam, focuses the target group Global Accounts of Domino UK and other companies in main industrial of Vietnam for Digital Printing Products.

HARN registered the establishment of Harn Vietnam Company Limited ("subsidiary"), Vietnam, with a registered capital of 800,000,000 Vietnamese dong or approximately 1,057,444 baht. HARN holds 100% of the subsidiary's shares of the registered capital on July 30, 2019. Specifying the Directors having authority to sign on behalf of the Subsidiary as follow Mr. Thammanoon Tripetchr, sign and affix the company seal.

Aiyaraharn Company Limited

The Board of Directors at the Meeting No. 4/2020, held on May 14, 2020 resolved to establish a subsidiary which HARN owns 65%. To the operate a business on developing of Smart Building under the name "Aiyarahan".

HARN registered the establishment of Aiyarahan Company Limited ("subsidiary"), with a registered capital of Baht 2,000,000. HARN holds 65% of the subsidiary's shares of the registered capital on July 8, 2020. Specifying the Directors having authority to sign on behalf of the Subsidiary as follow Mr. Thammanoon Tripetchr, Mr. Jain Charnnarong, Mr. Prasertsak Detudom, two (2) of these three (3) shall jointly sign.

Details Position of the Subsidiaries

Name	Position of Subsidiaries	
	Harn Vietnam Co., Ltd.	Aiyara Harn Co., Ltd.
1. Mr. Thammanoon Tripetchr	/, //	/
2. Mr. Jain Charnnarong		/
3. Mr. Prasertsak Detudom		/, //

หมายเหตุ : / = Director // = Management

References information disclosed on HARN website, be in the links below, shall be deemed to be part of Form 56-1 One Report.

<https://www.harn.co.th/en/about/business-structure/>

Attachment 3

Details of Head of Internal Audit and Head of Compliance Department

Head of Internal Audit

HARN hired Ultima Advisory Co., Ltd., as internal audit namely Ultima Advisory Company Limited by assigning Miss Chonlada Thirapattananon and Miss Siriphan Tantipanichphan as head of internal audit of HARN: as follow;

Miss Chonlada Thirapattananon

Managing Director

Age 53 Yrs.

Shareholding proportion (As at December 31, 2021) - None -

• **Appointment date** December 2, 2016

• **Education**

- M.Acc. (Accounting and Finance), Chulalongkorn University
- Graduate Diploma Program in Auditing, Thammasat University
- B.Acc. (Accounting), Thammasat University

• **Certified Public Accountant of Thailand** License No. 4994

• **Training participation**

1. Training project to receive a certificate in internal audit, class 3
2. COSO 2013 course
3. Internal Audit in Information System, Class 2/2016

• **Work experience in the 5 preceding years**

- 2010 - Present Managing Director, Ultima Advisory Co., Ltd.
- 2005 - 2010 Manager, Deloitte Touche Tohmatsu Jaiyos Advisory Co., Ltd.
- 1997 - 2005 Financial Controller, Sensient Technologies (Thailand) Ltd. Accounting and Finance Department, Amex Team Advertising Group Manager, Gilbete Reed Co., Ltd.
- 1991 - 1996 Audit Manager, Amex Team Advertising Group / Gilbete Reed Co., Ltd. / Ernst & Young Office Limited

• **Having a Special Interest that is Different from Other Directors** - None -

• **Participation in administration, staff, employees or consultants who receive a regular salary** - None -

• **Significant business relationships that May result in inability to perform duties independently** - None -

Miss Siriphan Tantipanichphan

Senior Internal Audit Manager

Age 52 Yrs.

Shareholding proportion (As at December 31, 2021) - None -

• **Appointment date** August 10, 2017

• **Education**

- M.B.A, National Institute of Development Administration
- B.Acc. (Accounting), Thammasat University

• **Certified Public Accountant of Thailand** License No. 4820

• **Training participation**

1. Training project to receive a certificate in internal audit, class 13
2. COSO 2013 course
3. COSO ERM 2017 course
4. Internal Audit in Information System, Class 2/2016
5. Corruption Prevention Course in Organizations, Class 16

• **Work experience in the 5 preceding years**

- 2016 - Present Senior Manager, Ultima Advisory Co., Ltd.
- 1993 - 2015 Senior Manager, Ernst & Young Office Limited

• **Having a Special Interest that is Different from Other Directors** - None -

• **Participation in administration, staff, employees or consultants who receive a regular salary** - None -

• **Significant business relationships that May result in inability to perform duties independently** - None -

Head of Compliance

The person by position assigned as Head of Compliance of HARN as Chief Operating Officer, currently appoint Mrs. Varinkan Teraumranon as responsible for HARN's compliance, and profile details also appear in Attachment 1, page 207

References information disclosed on HARN website, be in the links below, shall be deemed to be part of Form 56-1 One Report.
<https://www.harn.co.th/en/corporate-governance/corporate-governance-policy/>



Attachment 4

Business Assets and Details on Asset Valuation

The details are reported under **Section 1 “1.2.5 Business Assets”** page 36-39 and disclosed on HARN website, be in the links below, shall be deemed to be part of Form 56-1 One Report.

<https://www.harn.co.th/en/corporate-governance/corporate-governance-policy/>

Asset Valuation

- None -

Attachment 5

Corporate Governance Policy and Code of Conduct Full Version

Harn Engineering Solutions Public Company Limited (“HARN”) has defined the corporate governance policy for the Board of Directors, executives, all employees, subsidiaries, joint venture, companies under the control of HARN, include representative (if any), to adhere to as a guiding principle in their work, together with the code of conduct and other policies, to promote HARN as a company with efficient business operations, excellent corporate governance and management, integrity, transparency and auditability.

HARN has announced its good corporate governance principles and formulated the Policies and Principles of Corporate Governance, Code of Conduct and other policy for the acknowledgement and adoption of the Board of Directors, executives, employees as their practical guidelines at work. The Policy is publicized on HARN website, for information disclosed on HARN website, be in the links below, shall be deemed to be part of Form 56-1 One Report.

<https://www.harn.co.th/en/corporate-governance/corporate-governance-policy/>

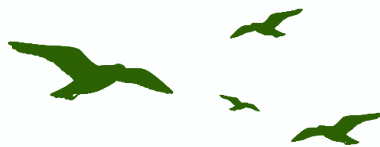
Attachment 6

Report of the Audit Committee

The details are reported under **Section 2 “8.2 Report of the Audit Committee”** page 124-125 and disclosed on HARN website, be in the links below, shall be deemed to be part of Form 56-1 One Report.

<https://www.harn.co.th/en/corporate-governance/board-committee-directors/>







Quality Living Through Sustainable Engineering



Fire Protection & Safety



Air Conditioning & Sanitary



Refrigeration



Digital Printing



Harn 3DMed



บริษัท หาญ เอ็นจิเนียริง โซลูชั่นส์ จำกัด (มหาชน)

559 ซอยศูนย์วิจัย 4 ถนนพระราม 9 แขวงบางกะปิ เขตห้วยขวาง กรุงเทพฯ 10310

Harn Engineering Solutions Public Company Limited

559 Soi Soonvijai 4, Rama 9 Road, Bangkapi, Huaykwang, Bangkok 10310, Thailand



02 318 9744



02 318 9744 ต่อ 4000



Harn Engineering Solutions



www.harn.co.th