

2019

Annual 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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1

Vision, Mission, Core Values and Target

In 2019 to continue building the strategic focused organization, the Board of Directors agrees to review strategy, vision, mission, and business direction to ensure that our company has a prepared strategy to cope with the changing external and internal factors. The Board also delivers this strategic plan to the Executives and all staffs to be informed and monitor the strategy implementation to achieve goals and give a progress report back to the Board in every quarter.

Vision

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

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

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

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

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

P	O	S	i	T	i	V	E
Professional Responsibility	Ownership	Sustainable Development	Integrity	Teamwork	Innovation	Value Creation	Excellence
ความรับผิดชอบต่อ อย่างมืออาชีพ	มีความรัก ผูกพัน และเป็น เจ้าขององค์กร	การพัฒนา อย่างยั่งยืน	ความซื่อสัตย์ และยึดมั่น ในความถูกต้อง และเป็นธรรม	ความร่วมมือ ทำงานเป็นทีม	ความคิดริเริ่ม สร้างสรรค์	การสร้าง คุณค่า	การมุ่งมั่นสู่ ความเป็นเลิศ

Target

Enhance our product portfolio and increase the number of products in Safety Engineering Products. Refrigeration system And digital printing To increase the choice and support the needs of all customers standard product group.

Expand the distribution markets to neighboring countries, namely Myanmar, Vietnam, Cambodia, and so on.

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

Foster learning organization to enhance competitiveness for success.



2

Key Financial Information

		2019 ⁴⁾	2018	2017
Operating Results				
Sales and Services Revenues	MB.	1,366.88	1,344.26	1,285.96
Total Revenues	MB.	1,393.97	1,356.02	1,300.70
Costs of Sales and Services	MB.	948.69	931.22	897.55
Gross Profit	MB.	418.19	413.04	388.41
Net Profit/ (Loss)	MB.	149.62	134.36	129.68
Total Comprehensive Income	MB.	147.98	134.36	129.64
Financial Position				
Total Assets	MB.	1,596.30	1,548.59	1,457.34
Total Liabilities	MB.	274.64	281.38	242.66
Total Shareholders' Equity	MB.	1,321.66	1,267.21	1,214.68
Financial Ratios				
Return on Equity ¹⁾	%	11.43	10.83	11.02
Return on Assets ²⁾	%	11.89	11.15	11.36
Gross Profit Margin	%	30.59	30.73	30.20
Net Profit Margin ¹⁾	%	10.62	9.91	9.97
Debt to Equity Ratio	Times	0.21	0.22	0.20
Total Assets Turnover Ratio	Times	0.89	0.90	0.92
Stock Data Annual Average				
Par Value per Share	Baht	0.50	0.50	0.50
Book Value	Baht/Share	2.26	2.17	2.08
Dividend per Share ³⁾	Baht/Share	0.18	0.16	0.14
Dividend Payout Ratio	%	69.23	69.57	63.64
Basic Earnings/ (Loss) per Share	Baht/Share	0.26	0.23	0.22

Note : ¹⁾ Comprehensive income used in calculation.

²⁾ Earnings before interest and tax used in calculation.

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

⁴⁾ Referring to consolidated financial statement.

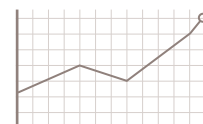
Sales and Services Revenues



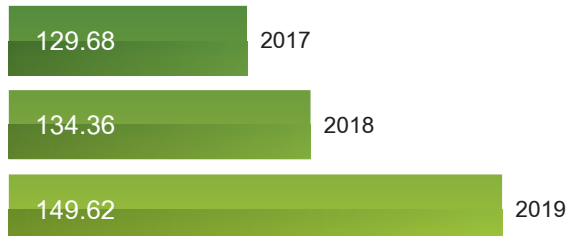
1,366.88 Million Baht



Net Profit/ (Loss)



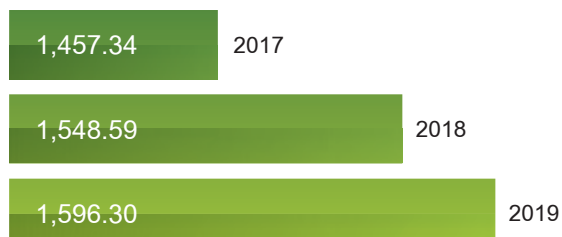
149.62 Million Baht



Total Assets



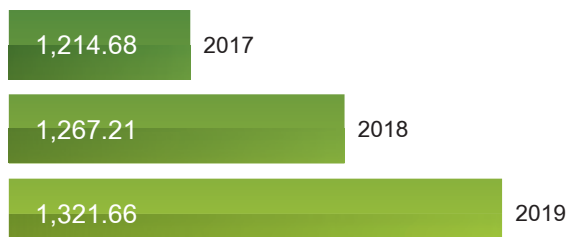
1,596.30 Million Baht



Total Shareholders' Equity



1,321.66 Million Baht

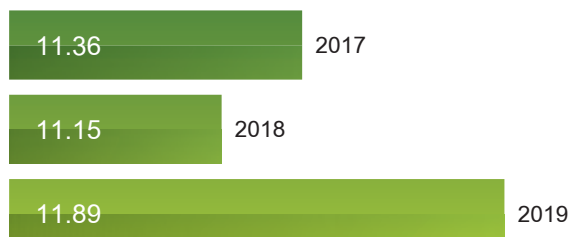


Return on Assets

(earnings before interest and tax used in calculation)



11.89 %

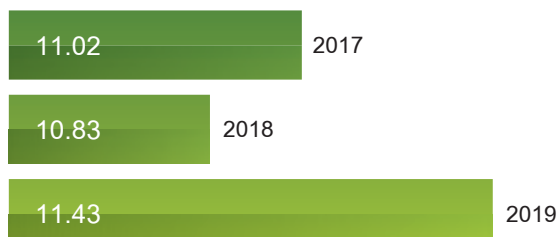


Return on Equity

(comprehensive income used in calculation)



11.43 %



3

Message from the Board of Directors



Harn Engineering Solutions Public Company Limited, with the securities abbreviation of “HARN”, distributes products and provides services in several types of engineering system including fire protection system, air-conditioning system, refrigeration system and digital printing system. Our company maintained a good operating result last year. Major business achieved growth in sales and profits amid a slowdown in domestic economy, baht appreciation, trade war, international conflicts, and business disruption requiring massive adaptation to cope with the rapid changes. However, the Board of Directors and all staffs still devote ourselves to make progress and achieve a sustainable growth, proved by our thriving business performance. The company also has a plan to export new products to the potential markets. For example, we established an affiliated company in 2019 in Vietnam to run a digital printing business, evidently opening to the international market. Besides, we expand services in each business to generate more revenue from our growing services in every year as well as make personal development and give trainings to our staffs in order to broaden knowledge and prepare to serve an operation plan in the future. We ensure that our company can sustain a steady growth.

As for the operation under the good corporate governance policy, the company has consistently given importance to the practice of good corporate governance principles. We operate with responsibility to all stakeholders fairly. Transparent and can be inspected, which can be seen as a tangible result of receiving the highest level of good corporate governance scores (CG Score 5 stars) 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 who have supported and contributed to the successful operation of the Company. Please be assured of the dedication and commitment of all the Board, management and staff members to jointly drive the development of the Company towards sustainable business growth under good corporate governance for the maximum benefits of all stakeholders and the society as well as the country as a whole.

Mr. Thakol Nunthirapakorn
Chairman of the Board

Mr. Wirat Sukchai
Chief Executive Officer

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Board of Directors

**Dr. Thakol Nunthirapakorn**

Independent Director (Non-Executive),
Chairman of the Board and
Chairman of the Audit Committee
Age 74 Yrs.

- **Shareholding proportion (As at December 31, 2019)** - None -
- **Appointment date** September 5, 2012
(The company 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. Internal Audit's Challenge in Value Adding
- **Work experience in the 5 preceding years**
Business
 - 2562 - Present Directors 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.
- **Other Positions**
 1. Listed Company (2)
 - Ratchthani Leasing Plc.
 - United Paper Plc.
 2. Limited Company - 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 56 Yrs.

- **Shareholding proportion (As at December 31, 2019)** - None -
- **Appointment date** September 5, 2012
(The company 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 - 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 -



Dr. Sothitorn Mallikamas

Independent Director (Non-Executive),
Member of the Audit Committee and Member
of the Nomination and Remuneration Committee
Age 57 Yrs.

- **Shareholding proportion (As at December 31, 2019)** - None -
- **Appointment date** September 5, 2012
(The company was listed on the Stock Exchange of Thailand in 2014, resulting in holding the position continuously.)
- **Education**
 - PhD (Economics), University of Wisconsin, USA.
 - MA (Economics), University of Wisconsin, 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 278/2019
 3. Director Accreditation Program (DAP), Class 102/2013**Other courses :**
 1. Internal Audit's Challenge in Value Adding
- **Work experience in the 5 preceding years**
 - 2018 - Present Independent Director, Member of the Audit Committee and Member of the Nomination and Remuneration Committee, Harn Engineering Solutions Plc.
 - 2012 - Present Chairman of Bachelor of Arts Program in Economics, Chulalongkorn University
 - 2012 - 2018 Independent Director and Member of the Audit Committee, Harn Engineering Solutions Plc.
 - 2006 - 2009 Dean, Faculty of Economics, Chulalongkorn University
 - 2003 - 2006 Deputy Dean, Faculty of Economics, Chulalongkorn University
 - 1999 - 2003 Director, Economics Research Center, Faculty of Economics, Chulalongkorn University
 - 1992 - 1998 Advisor, Phatra Research Institute, Phatra Securities Plc.
 - 1994 - 1995 Advisor, Monetary and Finance Commission, House of Representatives
- **Other Positions**
 1. Listed Company - None -
 2. Limited Company - None -
 3. Other Organizations/Institutions (1)
 - Chulalongkorn University
 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 -



Dr. Supot Tiarawut

Independent Director (Non-Executive)
and Chairman of the Risk Management Committee
Age 53 Yrs.

(Resigned from Independent Director and Chairman of the Risk Management Committee: January 1, 2020)

- **Shareholding proportion (As at December 31, 2019)** - None -
- **Appointment date** November 1, 2016
- **Education**
 - Doctor of Engineering (Electronic Engineering), The University of Tokyo, Japan
 - Master of Engineering (Information and Computer Sciences), Toyohashi University of Technology, Japan
 - Bachelor of Engineering (1st Class Honor) (Electrical Engineering) Chulalongkorn University
- **Training participation**
Training program of Thai Institute of Directors Association (IOD) :
 1. IT Governance & Cyber Resilience Program (ITC) 11/2019
 2. How to Develop a Risk Management Plan (HRP), Class 12/2017
 3. Director Certification Program (DCP), Class 195/2014
 4. Finance for Non-Finance Directors (FND), Class 20/2005
- **Work experience in the 5 preceding years**
Business
 - 2019 - 2019 Independent Director, Chairman of Group Risk Supervision & Internal Control Committee, ICBC (Thai) Plc.
 - 2018 - 2019 Chief Transformation Officer, Chulalongkorn University
 - 2016 - 2019 Independent Director and Chairman of the Risk Management Committee, Harn Engineering Solutions Plc.
 - 2014 - 2019 Independent Director, Audit Committee, and Chairman of Risk Management Committee, ATP 30 Plc.
 - 2016 - 2017 Advisor to the President, Chulalongkorn University
 - 2012 - 2018 Director, Blue Phoenix Innovation Co., Ltd.
 - 2014 - 2017 Director, Industrial Liaison Program (ILP), Faculty of Engineering, Chulalongkorn University
 - 2014 - 2014 Executive Vice President, Corporate Strategy, Symphony Communications Plc.
 - 2012 - 2014 Assistant to the President (IT and Strategy), Chulalongkorn University
 - 2007 - 2011 Director, Telecommunication Research and Industrial Development Institute (TRIDI), National Broadcasting and Telecommunications Commission (NBTC)
 - 2004 - 2007 Senior Vice President Corporate Strategy, Senior Vice President Product Development, Secretary of the Executive Committee, Secretary of Risk Management Committee, Vice President Corporate Planning, Vice President Information Technology, TT&T Plc.
 - 2004 - 2007 President, TT&T Subscribers Services Co., Ltd.
 - 2004 - 2007 Director, Triple T GlobalNet Company Limited
 - 1999 - 2004 Vice President, Corporate Planning, Vice President Information Technology, TT&T Plc.
 - 1995 - 1999 Assistant Vice President, New Services and Technology, Corporate Planning, TT&T Plc.
 - 1994 - 1995 Industrial Officer, Office of Industrial Affairs, Royal Thai Embassy, Tokyo, Japan
- **Other Positions**
 1. Listed Company (2)
 - ATP 30 Plc.
 - ICBC (Thai) Plc.
 2. Limited Company - None -
 3. Other Organizations/Institutions (1)
 - Chulalongkorn University
 4. State Enterprise - None -
- **Having a Special Interest that is Different from** - 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. Wirat Sukchai

Directors (Executive), Chairman of the Executive Committee, Member of the Risk Management Committee and Authorized Director
Age 54 yrs.

- **Shareholding proportion (As at December 31, 2019)**
88,583,559 shares (15.16%)
- **Appointment date** September 5, 2012
(The company 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 :**
 - Senior Executive Program (CMA), Class 39
 - ISO 9001 : 2015 Understanding and Implementation
 - 12 Quality Leaders toward Digital Age and AEC Course
 - Risk Management of Organization Course
 - 4 Super Strategic Ideas Course
 - Finance for Non-finance Executive Course
 - Marketing 3.0 : Human Spirit Marketing Course
 - Vice Excellence Course
 - Root Cause Analysis & Corrective Actions Course
 - Academic Development and Enhancement 4th Refreshment Program
 - In-depth Discussion on Guidelines for Success in Installation Contractor and Distribution Business
 - Fire Research, Education, Performance Codes & Investigation Course
 - "HYGOOD" Sapphire Fire Suppression System Course
 - TQM : Total Quality Management Course
 - 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 - None -
 3. Other Organizations/Institutions - None -
 4. State Enterprise - None -
- **Conflict of Interest in the company** - None -
- **Family Relation with Other Directors** - None -
- **Dispute in the 10 Preceding Years** - None -



Mr. Thammanoon Tripetchr

Directors (Executive), Member of the Executive Committee, Member of the Risk Management Committee and Authorized Director
Age 52 Yrs.

- **Shareholding proportion (As at December 31, 2019)**
21,573,106 shares (3.69%)
- **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 :**
 - Chief Transformation Officer (CTO)
 - P01 : CSR for Corporate Sustainability
 - S01 : Strategic CSR Management
 - S02 : Supply Chain and Stakeholder Engagement
 - S03 : Corporate Social Initiatives for Sustainable Development
 - ISO 9001 : 2015 Understanding and Implementation
 - Safety Officer
 - Development of strategic thinking
 - Marketing, Sales and Service
 - Leadership Skill
 - Internal Quality Audit
 - After Sales Service Strategy
 - Application of KPIs to ISO 9001: 2000
 - CRM - Strategy & Technology
- **Work experience in the 5 preceding years**
 - 2016 - Present Managing Director: Digital Printing System, Harn Engineering Solutions Plc.
 - 2015 - 2016 Managing Director, Q II S Co., Ltd.
 - 2014 - 2016 Directors, Chillmatch Co., Ltd.
 - 2010 - 2015 General Manager, Q II S Co., Ltd.
 - 2002 - 2010 Sales Manager, Q II S Co., Ltd.
 - 2001 - 2002 Sales Manager (Coding & Packaging), Harn Engineering Co., Ltd.
- **Other Positions**
 1. Listed Company - None -
 2. Limited Company - None -
 3. Other Organizations/Institutions - None -
 4. State Enterprise - None -
- **Conflict of Interest in the company** - None -
- **Family Relation with Other Directors** - None -
- **Dispute in the 10 Preceding Years** - None -



Dr. Jain Charnnarong

Directors (Non-Executive),
Member of the Executive Committee
and Authorized Director
Age 53 Yrs.

- **Shareholding proportion (As at December 31, 2019)**
72,319,130 shares (12.37%)
- **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 courses :**
 - The direction of driving business in accordance with the sustainable development goals
 - Directions and trends of key technologies to Digital Transformation
 - P01 : CSR for Corporate Sustainability
 - S01 : Strategic CSR Management
 - S02 : Supply Chain and Stakeholder Engagement
 - S03 : Corporate Social Initiatives for Sustainable Development
 - S04 : Sustainability Risk and Materiality Analysis
 - S05 : CSR Evaluation and Data Management
 - S06 : Sustainability Reporting
- **Work experience in the 5 preceding years**
 - 2017 - Present Directors and Member of the Executive Committee, Harn Engineering Solutions Plc.
 - 2007 - Present Directors, 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
 - 1997 - 1998 Assist to General Manager, Thai Air Cargo Co., Ltd.
- **Other Positions**
 1. Listed Company - None -
 2. Limited Company (1)
 - Harn Engineering Co., Ltd.
 3. Other Organizations/Institutions - None -
 4. State Enterprise - None -
- **Conflict of Interest in the company** - None -
- **Family Relation with Other Directors**
The younger brother of Mrs. Sirima Iamsakulrat
- **Dispute in the 10 Preceding Years** - None -



Mrs. Sirima Iamsakulrat

Directors (Non-Executive),
Member of the Nomination and Remuneration
Committee and Authorized Director
Age 57 Yrs.

- **Shareholding proportion (As at December 31, 2019)**
84,234,151 shares (14.41%)
- **Appointment date** September 5, 2012
(The company 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 courses :**
 - P01 : CSR for Corporate Sustainability
 - S01 : Strategic CSR Management
 - S02 : Supply Chain and Stakeholder Engagement
 - S03 : Corporate Social Initiatives for Sustainable Development
 - S04 : Sustainability Risk and Materiality Analysis
 - S05 : CSR Evaluation and Data Management
 - S06 : Sustainability Reporting
 - Challenges of internal auditors towards value creation in the current economic climate
- **Work experience in the 5 preceding years**
 - 2018 - Present Directors and Member of the Nomination and Remuneration Committee, Harn Engineering Solutions Plc.
 - 1989 - Present Member of the Executive Committee, Harn Engineering Co., Ltd.
 - 2016 - 2018 Directors and Chairperson of the Executive Committee, Harn Engineering Solutions Plc.
 - 2012 - 2016 Member of the Executive Committee, Harn Engineering Solutions Plc.
 - 2002 - 2016 Member of the Executive Committee, QIIS Co., Ltd.
 - 1989 - 2016 Member of the Executive Committee, Chillmatch Co., Ltd.
 - 2001 - 2012 Member of the Executive Committee, Fire Victor Co., Ltd.
- **Other Positions**
 1. Listed Company - None -
 2. Limited Company (1)
 - Harn Engineering Co., Ltd.
 3. Other Organizations/Institutions - None -
 4. State Enterprise - None -
- **Conflict of Interest in the company** - None -
- **Family Relation with Other Directors**
The sister of Dr. Jain Charnnarong
- **Dispute in the 10 Preceding Years** - None -



Mrs. Valeeratn Chuerboonchai

Directors (Non-Executive)
and Authorized Director
Age 65 Yrs.

- **Shareholding proportion (As at December 31, 2019)**
8,081,986 shares (1.38%)
- **Appointment date** September 5, 2012
(The company 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 :**
 - 12 Quality Leaders toward Digital Age and AEC Course
 - Risk Management of Organization Course
 - 4 Super Strategic Ideas Course
 - Finance for Non-finance Executive Course
 - The Habits of Highly Effective Working Person Course
 - Marketing 3.0 Human Spirit Marketing Course
 - Insight of Income Tax on Wages and Welfare Course
 - New Accounting Standard and Impact on Business Course
 - Accounting and Finance Data for Executives Course
- **Work experience in the 5 preceding years**
 - 2018 - Present Directors, Nutrix Plc.
 - 2018 - Present Directors, Harn Engineering Solutions Plc.
 - 2012 - 2018 Directors and Member of the Executive Committee, Harn Engineering Solutions Plc.
 - 2012 - 2017 Assistant Managing Director: Operations, Harn Engineering Solutions Plc.
 - 2007 - 2016 Directors and Member of the Executive Committee, Chillmatch Co., Ltd.
 - 2007 - 2016 Directors and Member of the Executive Committee, QIIS Co., Ltd.
 - 2009 - 2015 Director, Promark Co., Ltd.
 - 2007 - 2012 Finance Director, Fire Victor Co., Ltd.
 - 2004 - 2012 General Manager (Finance and General Administration), Harn Engineering Co., Ltd.
 - 1999 - 2004 Accounting and Finance Manager, Harn Engineering Co., Ltd.
- **Other Positions**
 1. Listed Company (1)
 - Nutrix Plc.
 2. Limited Company - None -
 3. Other Organizations/Institutions - None -
 4. State Enterprise - None -
- **Conflict of Interest in the company** - None -
- **Family Relation with Other Directors** - None -
- **Dispute in the 10 Preceding Years** - None -



Mr. Parkphum Wongpaitoon

Directors (Non-Executive)
Age 79 Yrs.

- **Shareholding proportion (As at December 31, 2019)**
4,230,325 shares (0.72%)
- **Appointment date** September 5, 2012
(The company was listed on the Stock Exchange of Thailand in 2014, resulting in holding the position continuously.)
- **Education**
 - 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 :**
 - ISO : 2000 Quality System Management Course
 - Self-Improvement (7-Habits) Course
 - Summary of the New Labor Protection Act B.E. 2551 Course
 - Internal Audit and Control for Efficiency Enhancement Course
 - "Lean" Accounting Course
 - EVA for Executives Course
 - Application of the Balance Scorecard & KPIs Course
- **Work experience in the 5 preceding years**
 - 2015 - Present Directors, Harn Engineering Solutions Plc.
 - 1999 - 2017 Directors, Harn Engineering Co., Ltd.
 - 2002 - 2016 Directors, QIIS Co., Ltd.
 - 1999 - 2016 Directors, 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 - None -
 3. Other Organizations/Institutions - None -
 4. State Enterprise - None -
- **Conflict of Interest in the company** - None -
- **Family Relation with Other Directors** - None -
- **Dispute in the 10 Preceding Years** - None -

5

Executives and Company Secretary



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01 Mr. Wirat Sukchai

Chief Executive Officer and Managing Director :
Fire Protection System, Air-conditioning system and
sanitary

02 Mr. Thammanoon Tripetchr

Managing Director : Digital Printing System

03 Mr. Wisit Wachiralappaitoon

Chief Financial Officer

04 Mrs. Varinkan Teraumranon

Chief Operating Officer and Company Secretary

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. Sukit Litikorn

Engineering Support Director : Refrigeration System

09 Mr. Withoon Thamee

Sales Director : Digital Printing System

10 Mr. Pongsawat Penglengpol

Sales Special Products Director : Digital
Printing System

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General Information

Name	HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED
Symbol	HARN
Registration No.	0107557000217
Stock Market	mai
Industry Group	Service
Trading Start Date	13 November 2014
Par Price	Baht 0.50
Registered Capital	Baht 292,250,000 (totaling 584,500,000 ordinary shares)
Paid-up Capital	Baht 292,250,000 (totaling 584,500,000 ordinary shares)
Nature 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 including the provision of consulting, designing services in projects and provision of engineering solutions complete.
Head Office Location	19/20-22 Soi Soonvijai, Rama 9 Road, Bang Kapi Subdistrict, Huai Khwang District, Bangkok 10310 Tel. +66 (2) 203-0868 Fax. +66 (2) 203-0245
Soonvijai Warehouse Location	503/1, 509 Soi Soonvijai 4, Bang Kapi Subdistrict, Huai Khwang District, Bangkok 10310 Tel. +66 (2) 719-7285 , +66 (2) 716-9070 Fax. +66 (2) 318-8624
Motorway Warehouse Location	6, 8 Soi Motorway 9, Thap Chang Subdistrict, Sapan Sung District, Bangkok 10240 Tel. +66 (81) 914-2236 , +66 (85) 480-2420
Website	www.harn.co.th
Company Secretary	Mrs. Varinkan Teraumranon Tel. +66 (2) 203-0868 E-mail : varinkan.t@harn.co.th
Investor Relations	Mr. Wirat Sukchai Tel. +66 (2) 203-0868 E-mail : wirat.s@harn.co.th
The Most Responsible Person in Accounting and Finance	Mr. Wisit Wachiralappaition Tel. +66 (2) 2203-0868, E-mail : wisit.w@harn.co.th
Accounting Supervisor	Miss Ananya Proyngoen Tel. +66 (2) 2203-0868, E-mail : ananya.p@harn.co.th
Information of Subsidiary	Harn Vietnam Co., Ltd. 68 Nguyen Hue, Ben Nghe Ward, District 1, Ho Chi Minh City, Vietnam.

Name and Address of Other References

Securities Registrar	The Stock Exchange of Thailand Building 93 Ratchadaphisek Road, Dindaeng Subdistrict, Dindaeng, Bangkok 10400 Thailand Tel : +66 (2) 009-9000 Fax : +66 (2) 009-9991 website : www.set.or.th/tsd
Auditor	Dharmniti Auditing Co., Ltd. 178 Dharmniti Building 6-7 th Floor, Soi Permsap (Pracha Chuen 20), Pracha Chuen Road, Bangsue, Bangkok, 10800 Thailand Tel : +66 (2) 596-0500 Fax : +66 (2) 596-0539

For more information, please see our Annual Registration Statement (Form 56-1) which is posted on The Office of the Securities and Exchange Commission's website at www.sec.or.th or The Stock Exchange of Thailand website at www.set.or.th or visit the Company's website at www.harn.co.th

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Nature of Business

1 Description of Products and Services

The Company's products and services can be divided into four categories as follows:

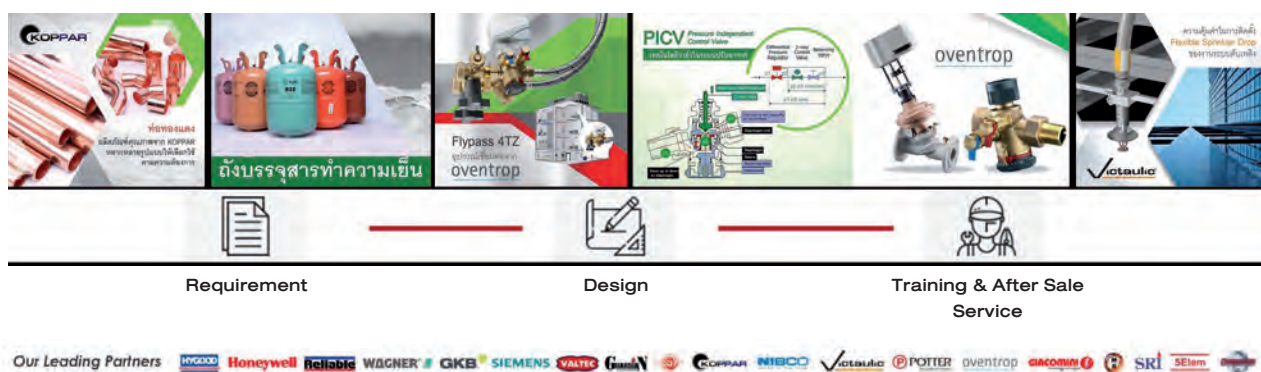
1.1 Fire suppression products and firefighting system installation services



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 the Company 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 in order to allow for complete functioning of the fire protection system, including other firefighting devices such as fire hose cabinet, fire hose, fire extinguisher and sprinkler systems (fire sprinkler head), etc.

The Company also provides consulting, designing and installation services for all types of firefighting systems. It has a skillful engineering team to coordinate with customers, introduce the Company'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.

1.2 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. The Company distributes products that are devices

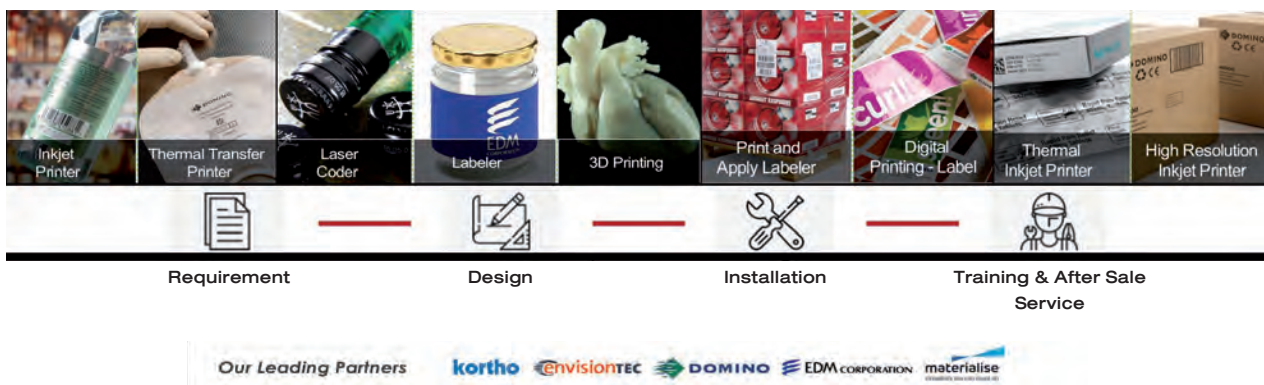
in air-conditioning and sanitary systems, such as valves which open and close to control and stabilize the flow of cold water to ensure efficient functioning of the air-conditioning system and the sanitary system and are fixed with a pipeline in such system. In the sanitary and air-conditioning system, there are also other major components or auxiliary devices such as copper tube, fitting, water pressure and temperature measurement unit, flow switch, etc.

1.3 Refrigeration Products



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 $+25^{\circ}\text{C}$. The Company offers a complete range of refrigeration products, as illustrated in the cooling system diagram, consisting of condenser, evaporator, defrost on demand (DOD) equipment, etc., including valve which is an important device in the refrigeration system used for starting or stopping the liquid flow and the cooling pressure. The Company has also designed and produced condensing units 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.

1.4 Digital Printing Products



- Digital printing product group for printing of manufacture/expiry dates and lot number consists of machine for printing texts on packages, feeder, printing equipment, various types of supplies, etc. The Company's products are coding printers for printing 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 medical analysis, research and development with digital technology.
- Digital UV inkjet printing product group for printing 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.

2 Products Insurance

The Company insures the damages or defectives of products following the insurance conditions of the products that the Company distributes or installs for the customers for 1 year or 6 months for the machines and the spare parts, respectively. The products of the Company 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, the Company insures the installed products under the conditions for 1 year where the suppliers also insure the products to the Company for 1 year as well.

3 Warehouses and Distributions

The company has three warehouses:

1. The main warehouse is located at 503/1 and 509, Soi Soonvijai 4, Bang Kapi Subdistrict, Huai Khwang District, Bangkok 10310. The rental area covers 2,482 square meters and is rented from a person involved with the company to store valve products, and other products in fire protection system, air-conditioning system, sanitary system and digital printing system. This place is also used to assembly equipments on a made to order basic.
2. The second warehouse is located at 38/43, Moo 4, Lam Luk Ka Road, Lam Luk Ka sub - district, Lam Luk Ka district, Pathum Thani. This place covers 80 square meters and is rented from an outsider who provides the warehouse service and is not involved with the company. 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.
3. The third warehouse is located at 6 and 8 Soi Motorway 9, Thap Chang Subdistrict, Sapan Sung District, Bangkok 10240. This place covers total 1,875 square meters and is rented from an outsider who provides the warehouse service and is not involved with the company to store valve products and refrigeration system products.

The company distributes products from warehouses to customers (shipping cost included in product price) by the company's trucks and other delivery trucks hired from the transportation operators outside who are not involved with the company. Now, 13 transportation operators are selected and registered as the approved vendor list (AVL) by our company. 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, 2019¹ our company 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. The company is an only beneficiary and from 2012 until now 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.

¹ The company will determine a sum assured in each year according to asset values from the latest financial budget before having insurance.

4 Processes of storing products in warehouses and distributing to customers

4.1 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

4.2 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.

5 Quality and standard of the products

The Company 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 the Company. The products sold by the Company are mostly certified by the UL (Underwriters Laboratories)² and/or FM (Factory Mutual)³ and/or BS (British Standard)⁴ and/or TIS (Thai Industrial Standards)⁵ and/or EN (European Standard) and/or Vds Standard⁶. 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.

² 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.

³ Factory Mutual (FM), responsible in testing protective and fire extinguisher equipment of the insurance group in the USA.

⁴ British Standard (BS), safety standards by the British Standard Institution (BSI)

⁵ Thai Industrial Standards (TIS), industrial standards, products guaranteed by the Thai Industrial Standard Institute.

⁶ 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

6 Significant Changes and Developments

Harn Engineering Solutions Public Company Limited (previously known as Fire Victor Public Company Limited) was originally set up as a section of Harn Engineering Company Limited ("Harn"). Later on May 9, 2001, the Company was incorporated as a juristic entity named "Fire Victor Company Limited" ("FIRE" or "the Company") by Charnnarong Group⁷ and Mr. Wirat Sukchai, former executive of Harn 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, the Company 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 the Company 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 2003, the Company expanded its business by adding Project Sales Division to provide consultation, designing and installation services of all types of fire protection system such as automatic sprinkler system, foam fire protection, and fire suppression and alarm systems, 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, the Company added carbon dioxide (CO₂) extinguishing system and FM200⁸ system into the Company's product line. In 2007, the Company received an Outstanding Distributor Award presented by NIBCO Inc., USA. The Company received ISO 9001 : 2015 certification from UKAS (United Kingdom Accreditation Service), a UK-based world-class certification body, with quality inspection and verification conducted by SGS (Thailand) Company Limited.

Important developments of the Company over the past five years can be summarized as follows:

2019	<ul style="list-style-type: none"> The company 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 8 January, 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. The company 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 30 July 2019. The company was certified with CG Score on the principles of good corporate governance for the listed companies in 2019, achieving the CG Score of five stars 'excellent' level on 25 October 2019. The company held a press conference on the success of project '3D Med the human organ models with the advanced 3D printing technology for effective diagnosis and treatment planning on 17 December 2019. From May 2018 - November 2019, fifty human organ models produced by the company received an average score at 4.49 out of total 5.
2018	<ul style="list-style-type: none"> The company was sponsored by the National Innovation Agency (Public Organization) in the project 'HARN 3D Med: creating the human organ models with the advanced 3D printing technology for effective medical diagnosis and treatment planning' in transforming technology into capital on 15 May 2018. The Company 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	<ul style="list-style-type: none"> The Company participated in the declaration as a member of the Private Sector Collective Action Coalition Against Corruption (CAC) on March 21, 2017. The Company 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.

⁷ The Charnnarong Group consisting of Mrs. Prayoonsri Charnnarong, Mrs. Sirima Iamsakulrut and Mr. Jain Charnnarong

⁸ 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.

	<ul style="list-style-type: none"> • The Company 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. • The Company received ISO 9001 : 2015 certification from SGS (Thailand) Ltd. on November 23, 2017. • The Company 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. • The Company was appointed as distributor of kitchen fire suppression system, i.e. Lehavot wet chemical system from Israel. • The Company was appointed as distributor of EVAPCO evaporative condensers from the USA. • The Company was appointed as distributor of DANFOSS refrigeration condensing units from Denmark.
2016	<ul style="list-style-type: none"> • The 1st Extraordinary Meeting of Shareholders on November 1st 2016 is of the opinion to buy and receive the business transfer of Chillmatch Co., Ltd and its subsidiaries under the entire business transfer process and signing in all related contracts. To this, the Company paid for the business transfer with the Company's common stocks from the increased capitals of 234,500,000 stocks at the value of 0.50 Baht per stock. The value of increased capital in common stock was at 2.62 Baht per stock. The Company will issue the common stock for the capital increase at 234,500,000 stocks at 0.5 Baht per stock to the shareholders of Chillmatch Co., Ltd instead of paying with cash. • November 2, 2016 the listed company had changed the name from Fire Victor Public Company Limited to Harn Engineering Solutions Public Company Limited and changed the Company's assets abbreviation from "FIRE" to "HARN" in the Stock Exchange of Thailand (effective on the November 7, 2016) in order to support the entire business transfer of Chillmatch Co., Ltd and its subsidiaries, following the resolution of the 1st Extraordinary Meeting of Shareholders.
2015	<ul style="list-style-type: none"> • The Company expanded distribution its market to neighboring countries, such as Kingdom of Cambodia. • The Company set up a project sales department for petrochemical products to increase distribution channels for full-scale fire protection systems in heavy industrial zones. • The Company upgraded its ERP (Enterprise Resource Planning Application) with SAP in specific to manage its business processes by linking all sub systems into one, streamlining the processes, and producing timely and most accurate financial reports to enhance data analysis and decision making.
2014	<ul style="list-style-type: none"> • The Company was appointed as a distributor of balancing and control valves of OVENTROP, Federal Republic of Germany. • The Annual General Meeting of Shareholders on March 19, 2014 concluded that the Company will increase its registered capital from 65 million Baht to 130 million Baht by issuing 6,500,000 new common stocks at the value of 10 Baht per stock for the original shareholders at the rate of 1 original stock to 1 new stock at 10 Baht per stock. The money received from the capital increase will be used as cash flows from the business operation in which the Company had already registered for the capital increase to the Department of Business Development, Ministry of Commerce on the April 21, 2014. • The 1st Extraordinary Meeting of Shareholders on May 15, 2014 approved the change of the Company from company limited to public company limited and the increase of the registered capital of 130 million Baht to 175 million Baht by issuing 45,000,000 new common stocks at the value of 1 Baht per stock for initial public offering (IPO) together with enlisting the Company's stocks to the Market of Alternative Investments (MAI). • The Company was listed as the public company limited under the name "Fire Victor Public Company Limited" on May 22, 2014. • The 1st Extraordinary Meeting of Shareholders on September 19, 2014 approved the change in the value of the Company from 1 Baht to 0.50 Baht per stock, which increases the registered capital stocks of the Company from 175,000,000 stocks to 350,000,000 stocks and approved the IPO after the change of the stocks' value, the amount had increased from 45,000,000 stocks to 90,000,000 stocks. The Company had registered the changing of the stocks' value to the Department of Business Development, Ministry of Commerce on the September 22, 2014. • The Company became the listed company in the MAI and began trading with 350,000,000 registered stocks on November 13, 2014.

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The Company's revenue structure

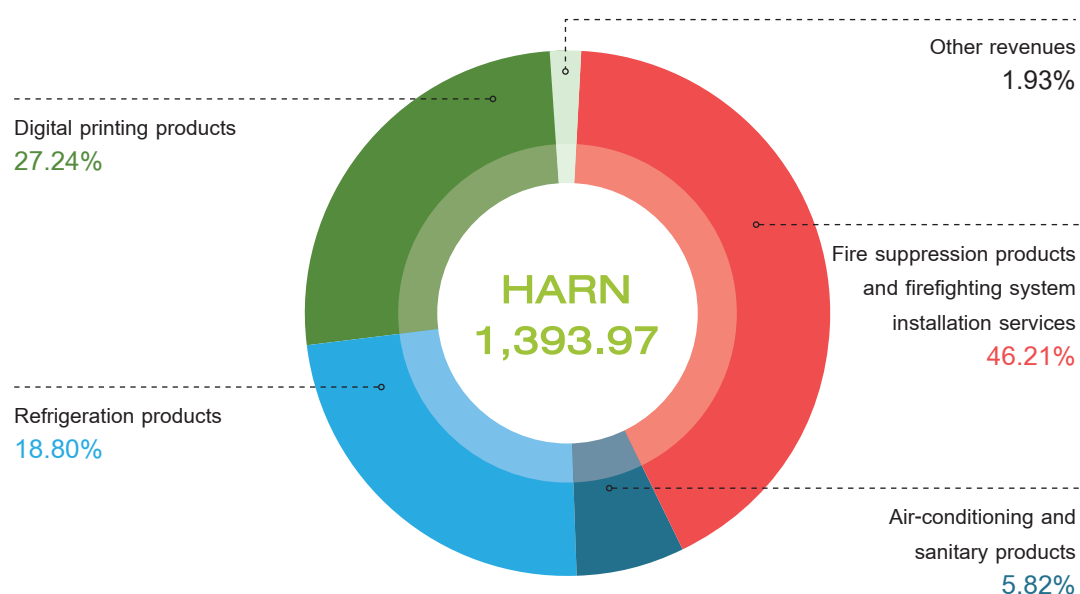
The revenue structure of the company for the year 2017 - 2019 is as follows

Type of Revenue	2019 ¹⁾		2018		2017	
	MB	%	MB	%	MB	%
Revenues from sales and services						
1. Fire suppression products and firefighting system installation services	644.12	46.21	569.59	42.00	579.54	44.56
2. Air-conditioning and sanitary products	81.10	5.82	89.33	6.59	86.17	6.62
3. Refrigeration products	262.00	18.80	320.39	23.63	312.51	24.03
4. Digital printing products	379.66	27.24	364.96	26.91	307.74	23.66
Total revenues from sales and services	1,366.88	98.07	1,344.26	99.13	1,285.96	98.87
Other revenues ²⁾	27.09	1.93	11.76	0.87	14.74	1.13
Total revenues	1,393.97	100.00	1,356.02	100.00	1,300.70	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 2019



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Marketing and Competition Overview

1

Industry Conditions and Industry Trends

The Company 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.

Thai Economy in the 3rd Quarter of 2019 and Economic trend of 2019 - 2020

The Office of the National Economic and Social Development Council would like give a statement on the country's Gross Domestic Product for the 3rd quarter of 2019 and the economic trend of 2019 - 2020 in details as follows;

Thai Economy in the 3rd Quarter of 2019

The Thai economy in the 3rd quarter of 2019 grew at a rate of 2.4%, which was an improvement from the growth rate of 2.3% in the previous quarter (%YOY), thus after the removal of the seasonal production, Thai economy in the 3rd quarter of 2019 has grown from the 2nd quarter at a rate of 0.1% (%QoQ SA). In total, Thai economy grew at a rate of 2.5 % in the first 9 months of 2019.

Spending There are factors which support the satisfactory growth rate from private consumption and the acceleration of investment from the private sector and government's spending while there is a decline in the amount of goods exported as a result of the slowdown of the global economy and the effect from trade protectionism policy.










Private Consumption expanded at a satisfactory rate of 4.2% continuing from 4.6% expansion in the previous quarter with supporting factors from interest rates, inflation rates and unemployment rates which remained lowered as well as the improvement in the prices of agricultural products and the implementation of policies to look after the lower income group by the government. The growth of household expenditure in this quarter was in consistent with the continued expansion of key expense indicators especially the household electricity consumption index, sales of benzoin, gasohol and diesel fuel index and the quantity of imported textiles and garments index which the growth rates were at 8.3%, 4.7% and 5.0% respectively, while the sales of personal cars fell by 6.5% and the consumers' confidence in the overall condition of the economy was at 60.8% compared to 64.8% in the previous quarter.

Government Consumption Spending expanded at a rate of 1.8% accelerated from 1.1% in the previous quarter. The total disbursement rate in this quarter was at 21% (higher than the disbursement rate of 20.5% in the same quarter of the previous year).

Total Investment There was an increase at a rate of 2.8% accelerated from 1.9% expansion from the previous quarter, whereby **private investment** expanded at a rate of 2.4% accelerated from 2.1% expansion from the previous quarter as a result of the investment in machine tools which expanded at a rate of 3.1% while investments in building constructions remained stable. In contrary, the **government investment** increased at a rate of 3.7% accelerated from 1.4% expansion from the previous quarter whereby the government investment expanded at a rate of 5.6% and the investment by the state enterprise expanded at a rate of 0.8%. In regards to the investment budget disbursement rate in this quarter was at 21.6% compared to 16.8% disbursement in the previous quarter and 19.9% for the same period of the year prior.

In the foreign trading sector, the value of **exported goods** was at 63,295 million USD, which was stable compared to the decrease at a rate of 4.2% in the previous quarter whereby the quantity of the exports declined by 0.4% and the price of the exports rose by 0.4%. **The export goods with an increase in value** are such as sugar (5.1%), engine spare parts and tools (0.3%), pickup trucks and large trucks (0.5%), motorcycles (19.5%), air-conditioner (4.0%) and fruits (41.4%). **The export goods with a decrease in value** are such as rice (declined by 35.1%), tapioca (declined by 27.3%), rubber (declined by 3.9%), integrated circuit board and parts (declined by 8.4%), machinery and equipment (declined by 7.2%), rubber products (declined by 14.2%), passenger cars (declined by 4.4%), computer parts and equipment (declined by 10.6%), petroleum products (declined by 29.3%) and chemicals (declined by 18.8%). The value of imported goods were at 55,333 million USD, declined by 6.8% (declined continuously into the 3rd quarter) compared to a decline at a rate of 3.4% in the previous quarter whereby the quantity of import reduced by 6.8% compared to a 3.3% reduction in the previous quarter, which is a decrease in the import of raw materials and intermediate products category at a rate of 3.8%, in consistent with the decline in exports. Meanwhile, import prices dropped by 0.2% compared to a 0.1% drop in the previous quarter.

Expansion of exports and the economy of major countries

COUNTRY		EXPORT (%YoY)				GDP (%YoY)				LOWEST ROUND
		2018	2019			2018	2019			
		All Year	Q1	Q2	Q3	All Year	Q1	Q2	Q3	
	USA	7.8	1.3	-3.2	-1.8	2.9	2.7	2.3	2.0	12 quarters since Q4/2016
	EUROZONE	8.7	-4.3	-3.6	-1.6	1.9	1.3	1.2	1.2	-
	JAPAN	5.7	-5.7	-6.2	-1.3	0.8	0.9	0.9	1.3	-
	CHINA	9.9	1.3	-1.0	-0.4	6.6	6.4	6.2	6.0	111 quarters since Q1/1992
	INDIA	8.5	6.7	-1.2	-3.8	7.4	5.8	5.0	-	(Q2) lowest round 25 quarters since Q2/2013
	INDONESIA	6.7	-8.2	-8.9	-6.9	5.2	5.1	5.1	5.0	9 quarters since Q3/2017
	SOUTH KOREA	5.4	-8.5	-8.6	-12.2	2.7	1.7	2.0	2.0	-
	THAILAND	7.5	-4.0	-4.2	0.0	4.1	2.8	2.3	2.4	-
	VIETNAM	13.3	5.2	9.0	10.7	7.1	6.8	6.7	7.3	-

Production The agricultural production bounced back to an expansion, the production of accommodations and food services expanded rapidly, the production in transportation and warehouses expanded continuously. Meanwhile, the production in wholesale and retail, reparation, construction and electricity and gas slowed down from the previous quarter, while industrial production declined constantly.

Agriculture Forestry and fishery expanded by 1.5%, an improvement from a decline at 1.3% in the previous quarter, in line with a rise in agricultural production index at 1.1% whereby the key agricultural product growth was in rubber (5.9%), tapioca (6.9%), palm oil (10.8%), as examples. Meanwhile, the key agricultural product decline was in paddy (declined by 6.3%), animal feed corn (declined by 5.2%), as examples. The fishery category grew by 5.1%, while livestock category declined by 1.0%. **Agricultural products price index** rose by 2.4%, accelerated from 2.1% growth from the previous quarter, where the rise was consecutive for 2 quarters, especially the price of paddy (9.9%), pigs (15.9%) and fruit trees (5.7%), as examples. The increase in agricultural products index and agricultural price index resulted in a 3.5% increase in **the overall farmers' income index**.

Industrial Production declined at a rate of 1.5% continuing from a 0.2% decline in the previous quarter, which was in consistent with a decrease in exports that were affected by the global economic slowdown and trade protection measures.

Industrial Production Index with an export ratio between 30 - 60% and industrial production for export index (with export ratio above 60%) declined by 5.9% and **Industrial Production for Domestic Consumption Index (with export ratio below 60%)** declined by 2.3%. The Average Capacity Utilization Rate was at 65.0% which fell from 65.6% in the previous quarter and 68.7% from the same quarter of the year prior. The key decline in industrial production index are such as motor vehicle production

(declined by 6.3%), production of petroleum products (declined by 7.4%) and production of other rubber products (declined by 18.2%), as examples. Key increase in industrial production index are such as brewing, distilling and blending of alcohol (36.1%), plastic and rubber production (3.8%) and production of aquatic animals including fresh, chilled or frozen (10.3%), as examples.

Accommodation and Food Services expanded at a high rate of 6.6% accelerated from 3.7% expansion on the previous quarter following the high growth in number of foreign visitors. In this quarter, the number of foreign tourists were at 9.7 million people which was a 7.2% increase from the increase in the previous quarter at 1.4%. As a result, the income generated from tourism was at 738.5 billion Baht in total, which was a 2.5% increase, however it was a slowdown in comparison to the previous quarter's increase at 2.9%. This consisted of (1) Income generated from foreign tourists was at 476.7 billion Baht which was a 5.8% increase whereby the main countries that generated a continuous growth of income are such as China, India, Japan, South Korea and Taiwan, as examples, and (2) Income generated from Thai tourists was at 261.8 billion Baht, a decline of 3.0% whereby the stay over rate was at 64.08%, a decline from 69.83% in the previous quarter and a decline from 65.38% from the same quarter of the year prior.

Transportation and Warehouses expanded by 2.5% accelerated from an expansion at 2.3% from the previous quarter following mainly to the rapid expansion in passenger transportation services whereby on-land transportation and pipelines grew by 4.2% accelerate from the growth of 3.8% in the previous quarter, and air transportation services grew by 2.5% accelerated from 1.2% growth in the previous quarter, while transportation via water ways declined by 3% and transportation support services and postal services continuously expand at a rate of 3.9% and 1.6% respectively.

Economic Stability remained favorable where unemployment rates remain low at 1.1%, general inflation rates remain at 0.6%, and current account was in a surplus at 9.1 billion USD (2.8 hundred billion Baht) or calculated as 6.8% GDP. International reserves as of the end of September 2019 was at 220.5 billion USD and the value of public liability as of the end of September 2019 was total at 6,902 billion Baht, calculated as 40.9% of GDP.

Thai Economy Trend in 2019

Thai economy in 2019 is expected to grow at 2.6% whereby the value of exported goods shall decline by 2.0%, private consumption and total investment shall grow by 4.3% and 2.7% respectively. General inflation rate shall remain at 0.8% and the current account shall be in surplus at 6.2% of GDP.

Thai Economy Trend in 2020

The Thai economy in 2020 is expected to grow by 2.7 -3.7% with key supporting factors as follows;

- (1) Satisfactory growth trend of domestic demand in household spending and investment by private and government sector.
- (2) A gradual improvement of exports under a gradual improving trend of global economy and the adaptation of exporting sector to trade protection measures which shall have a clearer direction.
- (3) The government's implementation of policies to drive the economy and
- (4) An improvement in tourism sector. The export value of goods is expected to increase by 2.3%. The sum of private consumption and investment shall increase by 3.7% and 4.8% respectively. The general average inflation rate shall be between 0.5 - 1.5% and the current account shall have a surplus at 5.6% of GDP.

Details of the Economic Projections of 2020 in various dimensions are as follows;

1. **Consumer spending (1) Private consumers spending** is expected to expand by 3.7%, slowing down from 4.3% in 2019, which is a decrease due to a high growth base, especially in the first half of 2019 where the consumption of durable goods in the category of cars had seen a high growth. However, private consumption has a favorable expansion trend, with supporting factors being the low rates of interests, inflation and unemployment and the implementation of government's policies to assist the low-income population and farmers and (2) Government's consumption spending is expected to grow at a rate of 2.6% accelerated from 2.2% in 2019 which is in consistent with the budget limit for current expenditures under the budget of fiscal year 2020 which increased by 3.9% from fiscal year 2019.

2. **Total Investment** is expected to increase by 4.8%, accelerated from 2.7% in 2019, whereby it is projected that public investment shall increase by 6.5%, accelerated from 2.3% in 2019 which is in consistent with budget limit for expenditures. Investment under budget of fiscal year 2020 increases by 18.9% from fiscal year 2019. Meanwhile, private investment is expected to expand by 4.2%, accelerated from 2.8% in 2019 with support from the fundamental investment factors which are in favorable conditions, both in terms of increasing the value of investment promotions applications especially the value of investment promotions applications in the Eastern Economic Corridor (EEC) and investments under Public Private Partnership (PPP) and the trends of production base shifts by foreign investors in order to minimize the impact from protective trade policies which had become more severe throughout 2019 under the government's investment support measures in order to support the relocation of the investors' production base which are becoming more apparent.
3. **Export Value in terms on USD** is expected to grow at a rate of 2.3%, which is an improvement from the 2.0% decline in 2019 whereby it is projected that the quantity of export goods shall increase by 2.4%, which is an improvement from the decline at 2.3% in 2019. This is in accordance with the slowly improving trend of global economy and global trade volume, and the adjustment of exports to protective trade policies that are more promising when combined with exports of services where the growth trends continues favorably from the second half of 2019 in accordance with the accelerated growth of income and foreign tourists, which the expected result is an increase in the export of goods and services by 3.5%, an improvement from 1.4% decline in 2019.

Source: Office of the National Economic and Social Development Council / November 18, 2019 (Summarized by Thammanoon T.)

Fire Extinguisher, Air-conditioning and Sanitary Business

Air Conditioning System and Fire Extinguisher Equipment: The overall image of 2019 shows an increase in sales of both systems whereby the ratio shows that there was a slight decrease in the sales of fire extinguishers equipment while the sales of the air-conditioners increased from the previous year. The reason for this is due to in the past year there was a decrease in the expansion of condominium and manufacturing plants' construction therefore resulted in less demand for fire extinguisher equipment, whereas the work in the group of hospitals and large hotels has increased, which contributed to higher demand in air-conditioning system and further contributed to an increase in sales under the work on air-conditioning system. Another reason for the increase in sales is that in the present time, labor wages have risen which results in clients who are looking to install fire extinguisher pipes and air-conditioning system chilled water pipes turn to Groove coupling installation method instead of connection method which quickens the installation, saves time and uses less manpower, as a result, sales in Groove coupling section have increased and are likely to increase continuously in 2020.

Extinguisher System for Industrial Projects: Sales in project's installation work has declined slightly from the past year due to there are many projects which are pending for products to arrive from foreign producers to hand over to the clients and pending for the readiness of construction work and the readiness of the area in order to process the installation and work handover. It is expected that in 2020, sales will increase from many outstanding works to handover both in private sector and in public sector. Furthermore, the company has received a number of additional installation work in many projects especially in the sales of fire extinguishing gas in which there are many pending installation projects already on hand. In terms of fire fighting inspection service work, there is a good potential for growth from an increase in service contracts after the expiration of warranty period for the projects that the company has installed, in which the service work is likely to increase year on year.

Extinguisher System for Petrochemical and Power Plant Projects: The over all image of 2019 in petrochemical and power plant departments have seen an increase in both markets from 2018 where the sales ratio of CCTV and the LAN system of Bangpakong power plant increased by 30 - 40% and there is an outstanding which is to complete delivery at approximately 30% by the end of 2020. Furthermore, there are a number of projects which the installation work is in progress and there is a large project which is in the follow up process in 2019 with a potential of growth in 2019 from investment in petrochemical industry to expand the plant and improve the fire fighting system in the next phase.

Refrigeration System Business

In regards to the condition of refrigeration market, this year is highly competitive especially with the new players from China entering the market, whom are able to bring higher quality yet cheaper products to compete in the market, resulting in a

more intense competition. There are not many plans to invest in productivity expansion projects by the various industrial factory operators, however, they are turning more into increasing the efficiency of earning income from the existing resources instead. The markets that are attractive and expected to continue experiencing favorable growth rates and are the business group which relate to refrigeration system business includes;

1) Frozen and processed chicken sector

Thailand's frozen and processed chicken industry in 2019 - 2020 is has a tendency to grow positively as a by-product of the announcement by the Chinese official to register 9 more of Thailand's poultry production and processing plants, which equals to a total of 19 plants, in order to be able to export to China. This offers a great boost in the export of frozen chicken. Moreover, the outbreak of African Swine Fever (ASF) in pigs has clearly resulted in an increase in demand for the consumption of chicken from Thailand along with Free Trade Agreement (FTA), which are the factors that support the continuous increase in the export volume of frozen chicken from Thailand.



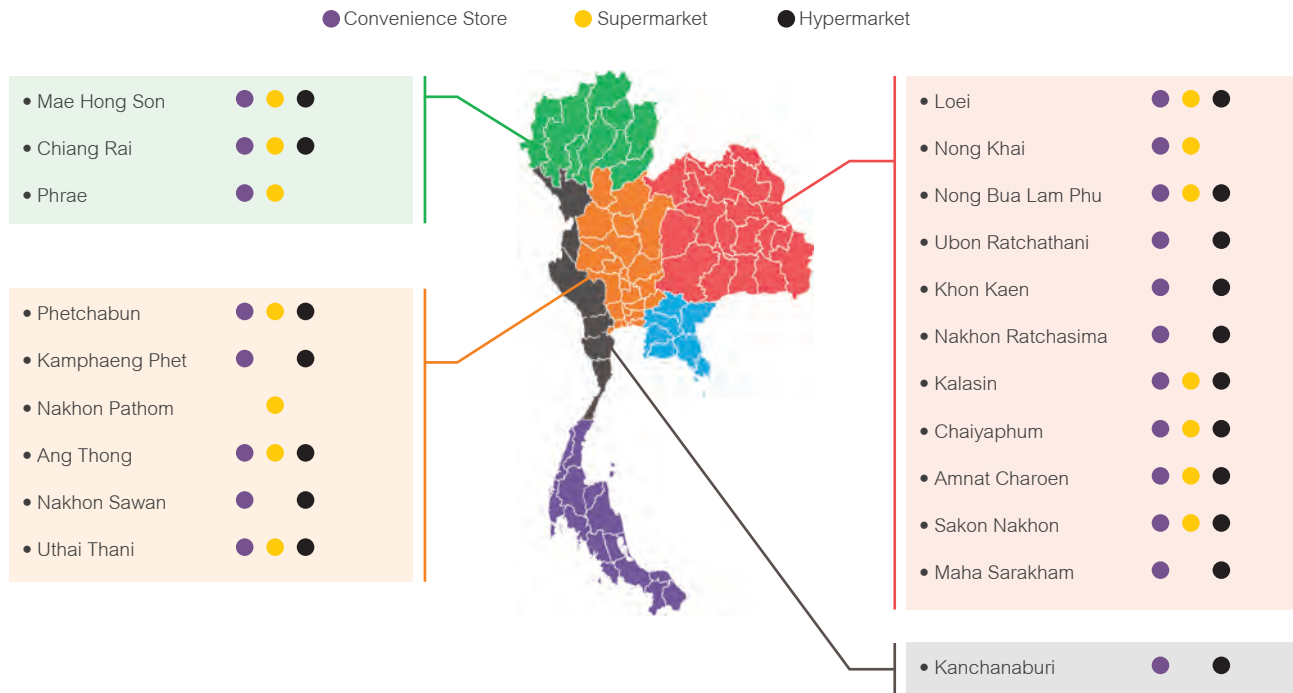
2) Retailing business

The overall image of Thailand's retailing business in 2020 does not have a bright outlook, whereby the growth rate is expected only at 2.8 - 3.0% in this year due to the sluggish economic conditions and the weakened buying power.

Discount store / Hypermarket / Supercenter: is expected to receive the most impact from the increasing household debt and higher living cost as well as an intense pricing competition and competition with other types of retails such as convenient stores and supermarkets, which therefore contributes to an overall low growth image of businesses in this section. Many business operators continue to invest in expanding branches; however, the new branches will be of smaller scale in order to be able to spread more into communities and to reduce cost as well as increase online sales channels in order to increase revenue and respond to the consumers' changing behaviors.

Supermarket: In regards to the market of supermarkets, whose clients base are of medium to high purchasing power, still has a tendency to grow positively due to the purchasing power of the customers in this group remain high, yet they are cautious with their spending because of the instability of their income and their preference to mostly purchase the necessary commodities for their daily life. Nevertheless, this group of business also receives favorable advantages from foreign tourists who are fond of buying products from supermarkets back to their hometown as souvenirs. Also, with an adaptation to increase customer's convenience such as options to order online and creation of sub-brands in order to reach further into communities, contributing to a tendency of continuous expansion of businesses in this segment.

Convenience store / Minimart: is expected to grow within limitation of 2 - 3% following the expansion of new branches and the expansion of urban areas, high rise residences and petrol service stations. The intensity of competition in this segment is likely to continue from the weakening of purchasing power in middle to low income clients, along with competition from the expansion of competitors' branches in the same area, as well as the heavily creation of sub-brands by supermarket and hypermarket operators in order to reach customers in the community and increase convenience by having an easier access. Moreover, there are expansion of services and products in order to win the sales and respond to the consumers' behavior which requires greater speed and convenience.



Most of the areas with potential for branch expansion are in Northeastern and Central regions. Source: Analysis by EIC from data of SES and NESDB

Digital Printing Business

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.

2 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 very 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 the Company as well. When considering the market share of the Company by comparing with the revenue of the 3 main competitors who holds approximately 80% of the market share, the Company 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 the Company's 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. The Company has the advantage of selling various products that are well known in the market and can reach both general customers and contractors equally.

Importing and distributing products for refrigeration system in 2019 had faced high level of competition following the growth of the food, food processing and frozen food industries, since Thailand still remains to be the country with high food producing capacity from the fundamental basis of agriculture and fishing and with advance technology under the international standards. The relating businesses that had been growing together are convenience stores which have expanded only slightly. Entrepreneurs still have preference for small sized shops like convenience stores. Meanwhile, such large sized ones as hypermarkets have increasingly been pressured by limited space, and supermarkets have recorded lower sales per square meter. Moreover, several retail business operators have started to adopt the omni-channel strategy, i.e. developing online channel in conjunction with their physical shops. They have also developed new business models and applied technology to create product differentiation and enhance competitiveness of modern consumer product retailing businesses looking forward. In this regard, in 2020 it is expected that there will be a continued growth in the number of new branches of convenient stores and supermarkets by the same major competitors in the industry including Seven-Eleven, FamilyMart, Tesco Express, Big C mini, as examples.

There are opportunities for business expansion due to the supporting factors from entering the AEC, which will create regional trade and investment connections, and also follows by the connection between the supply chains, for example, convenience stores in Myanmar which had been growing rapidly in the past 4-5 years since some brands had already been expanded by investors from the modern trade market such as the supermarket and the hypermarket within the country while some other brands had joint ventures with foreign investors such as Singapore, Thailand and Malaysia.

Encourage new trading routes for the transportation of goods, for example, transporting fruits and vegetables from China to Thailand through the R3A in Chiang Rai and all the way to Talad Thai and Iyara Market which will help the growth of the food business, restaurants and the storage and transportation business that has controlled temperature as well.

As for the fishing industry, problems have prevailed regarding illegal fishing and lack of reporting and control, which are legacy problems, and relating to fishing labor shortage problems. Moreover, with the significantly stronger Baht and a requirement to invest in changing of equipment to comply with IUU Fishing regulations, which leads to a risk of experiencing a continuous loss situation effecting in a retract of seafood exporters' profit. Any further investment to expand the business has thus been made prudently.

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 very 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 sales of 1,627 million baht or 87% of the total market, it is discovered that the Company's market share is among the top 3 in the market with approximately 22.43% market share and sales grew 18.60% compared to the total growth of 6 companies at 7.94% (Source: Department of Business Development, sales in 2018).

3

Customers' Characteristics and Target Customers

The Company's 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. The Company's clients may be direct clients who hold the ownership of the construction project, or project contractors who purchase the Company's products to install in their projects, as well as stores or distributors of products related to the various systems who purchase the Company's products in order to resell to project contractors or direct users, in which the Company has always have a good relationship the mentioned group of clientele. Moreover, there are groups of clients who regularly order the Company's 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 2018 and 2019, the Company does not have any clients whose spending exceed 30% of total revenue.



4 Competitive Strategy

The Company 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 the Company 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, in order to build trust, confidence and customer satisfaction continuously.

- **Expand range of dealership**

The Company plans to expands 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, the Company 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. The Company 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**

The company 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. The Company therefore has to 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, the Company should not hold too many products in stock that it would contribute to a high cost of stock keeping.

- **Organize promotional activities in order to boost sales**

The Company organizes promotional activities on a regular basis such as participation in trade shows in order to create awareness and reach the target customers directly. There are product seminars for project designers and clients to create product familiarity in order for them to choose the products that the Company sells. There are advertisements in the various magazines which relate to the business of the Company 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 the Company's CSR policies, and building confidence in the products imported by the company to be sold leading to their choosing of the Company's products to be used in the various projects with confidence.

- **Invest in business expansion into Asean countries**

The Company 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 the company 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 the Company is one of the distributors of integrated building engineering products, this results in the Company 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.

5 Pricing Policy

The Company's policy on pricing is Cost Plus Pricing whereby the determination of the Company's 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.

In regards to pricing for project works, the Company 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, the Company must achieve adequate level of gross profit margin to support the cost of sales, administration and other operations.

6 Sales and Distribution Channels

The Company sells all products in the country by the Company's Sales & Marketing team which currently there are 151 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 in order 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.

The Company 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 the company including the products' standards, the source or the producers, in order for the Company 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, the Company's distribution channels are divided into 3 main channels as follows:

- 1) **Distribution through main building contractors or system contractors** The Company 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 the company's products in the various projects in accordance with the specification that the project designer has outlined. Most of the Company's sales are through this distribution channel or calculated at 55.09% and 54.42% of the total revenue from sales and service in 2018 and 2019 respectively.
- 2) **Distribution through retail or related product suppliers** The Company may not have access to small-sized contractors or customers who are project owners thoroughly, distribution through this channel enables the Company to distribute the products more widely. The sales ratio through this channel is calculated at 8.52% and 6.57% of total revenue from sales and service in 2018 and 2018 respectively. Additionally, in some cases the aforementioned retail or distributor are also the Company's 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 the Company 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 the Company does not keep it in stock, for example.
- 3) **Distribution Directly to the 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 the Company 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 36.39% and 39.01% of total revenue from sales and service in 2018 and 2019 respectively.

7 Procurement of Products or Services
















Most of the products sold by the Company, approximately 70%, are ordered from many producers from foreign counties, 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. The Company has a policy which focuses on selling quality products and with standards that match with the customers' requirements with procurement and selection procedure in order to obtain quality products, certified by various credible departments or institutions.

In ordering products to sell to the customers, the Company 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 of 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 the Company.

There are over 13,000 categories of products sold by the Company under over 60 famous brands. Within this number, currently there are 45 brands that the Company has been appointed as a distributor and the Company has been appointed as

a sole 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, the Company is the importer and distributor of each product category as follows;

Product group	Manufacturer	Brand country
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.	POTTER ELECTRIC	USA
	VICTAULIC	USA
	MOYNE ROBERTS	Ireland
	BADGER	USA
	GIACOMINI	Italy
	HYGOOD	United Kingdom
	5-ELEM	China
	NIBCO	USA
	CHEMGUARD	USA
	WAGNER	Germany
	SIEMENS	Germany
	SRI	Malaysia
	GKB	Taiwan
	RELIABLE	USA
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.	WEISS	USA
	VICTAULIC	USA
	HONEYWELL	USA
Balancing valve, PIVC	OVENTROP	Germany
Aluminum Filter for filtering dirt and dust in the air.	RESEARCH PRODUCTS	Belgium
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.	KUBA	Germany
	DOD	Germany
	ESK SCHULTZE	Germany
	BITZER	Germany
	ABB	Finland
	DANFOSS	Denmark
	O&F	China
	ZEILABEGG	Germany
	EBM PAPST	Germany
	BVA	China
	9 LIFE	Taiwan
	NARA	South Korea
	3Q	Thailand
	EVAPCO	USA

Product group	Manufacturer	Brand country
 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.	 Domino	 United Kingdom
	 Korthofah	 Holland
	 EDM	 Japan
	 MSSC	 USA
	 United RIBtype	 USA
	 EnvisionTEC	 Germany
	 Materialise	 Belgium

In additional, the Company has developed own product brands in total of 7 brands where the Company is the owner of the brand or the trademark which are;

- ▶ “HARN” trademark 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.
- ▶ “VALTEC” trademark for valve products and sanitary system and air-conditioning system products by hiring a manufacturer in China and produce in accordance with BS Standard (currently the UL standard certification has been achieved)
- ▶ “SPARK” trademark for fire sprinkler products by hiring a manufacturer in Malaysia and produce in accordance with BS standard.
- ▶ “GUARDIAN” trademark for fire extinguisher products which contain dry chemicals by hiring a manufacturer in Thailand. The product has achieved TIS industrial standard certification from Thai Industrial Standards Institute.
- ▶ “Blue Ice” trademark for cooling equipment products by hiring a manufacturer in China and produce in accordance with American Society for Testing and Materials (ASTM) standards.
- ▶ “Koppar” trademark for copper pipe products by hiring a manufacturer in China and produce in accordance with American Society for Testing and Materials (ASTM) standards.
- ▶ “YUKI” trademark for air-conditioner solutions by hiring a manufacturer in China. The product has achieved TIS industrial standard certification from Thai Industrial Standards Institute.

The company selects a manufacturer in order for The company selects a contract manufacturer to produce the Company's branded products by taking into consideration the capability of the manufacturer and the capability of the factory. For each of the brand, the Company chooses to use the same producer who has been a business partner over an extended period of time, 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 the Company's own brand is considered small in comparison to the imported products from foreign countries. The sales ratio in 2018 and 2019 is calculated at 5.40% and 5.10% of the total revenue.

In this regard, in 2018 and 2019, the Company did not receive order from any one of the manufacturers exceeding 30% of the total order value.

8 Environmental Impacts

- None -

9 Undelivered Works

As of December 31, 2019, there were backlog order total about 359.83 million baht, 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 170 million baht and the value of the product in the sales of Fire Suppression products and Air-conditioning products total about 113 million baht, Refrigeration products total about 38.36 million baht and Digital Printing products total about 38.47 million baht. PO have been awarded by customers and wait to be delivered in 2020.

10 Risk Factors

The Company determines to continuously develop its Risk Management for realizing its business risk complexity and severity from both internal and external factors. In order to ensure sustainable development, it is essential to lay down solid foundation of risk management that will sufficiently prevent and reduce our exposure from the variation of risk factors. The Company has adopted Risk & Control Self-Assessment (RCSA) to help us analyze the risk factors and identify dominant ones. So on to come up with measures that will not only soften the impact but also prevent them to happen. We have also identified risk indicators to monitor as well as those who are responsible for each individual measure in order to ensure that our business will reach its goals in the direction we have set forth. Our risks can be illustrated as the followings :

Operation Risks

1. Exchange rate risk

The products distributed by the Company are mainly imported from abroad. Its import volume in 2018 and 2019 made up 74.85% and 72.09% 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 98.91% and 98.66% respectively of the foreign purchase volume, while most products are almost entirely for local distribution in Thai baht. In some cases, the Company 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.

Well aware of such impact, with the exchange rate management policy as the follow:

- ▶ The Company has executed forward contracts with financial institutions to provide hedging against such risk. The contract value covers all existing foreign trade account payables. In addition, the company 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 the purpose of evaluation and to manage the risks from the exchange rate closely.

In 2018 and 2019, the Company bought foreign currency in advance totaling Baht 637.24 million and Baht 603.63 million, or 95.39% and 94.16% of its import volume. Furthermore, the Company managed its exchange rate risk by always keeping abreast of foreign exchange movement, resulting in only not more risk exposure as can be seen from its exchange risk management outcome. In 2018 and 2019 which recorded foreign exchange gains of Baht 2.40 million and Baht 4.63 million, respectively. The Company assessed 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, the Company will revise its selling prices based on market conditions with prior notice thereof to its customers. The Company 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 the Company.

2. Risk from loss of distributorship status

The Company 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 20.00% and 19.50% of its total sales in 2018 and 2019 respectively. As such, a loss of its distributorship right to the significant brands could affect its sales.

Having distributorship authorization is highly essential to the Company's business. There are two types of distribution authorization, i.e. with expiration and without expiration. However, for most of the brands distributed by the Company, it has not yet officially entered into distributorship contract with the brand owners. The Company 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 the Company's sales. Since 2011, the Company'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, the Company 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, the company was appointed as a distributor of one additional brands. The Company has also developed its house brands for some product items to mitigate risk of dependence on other brands.

In addition, throughout the past years, the Company 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, the Company is confident that brand owners will continue to assign the Company as their distributor through the years ahead. The Company assessed the risk control at a satisfactory level.

3. Risk from brand owners implementing marketing by themselves

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

Nonetheless, the Company 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. The Company assessed the risk control at a satisfactory level.

4. Human Resource Risk involves the lack of man power as well as the lack of competency to support the realization of our vision

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

- ▶ The Company has reviewed its organization structure and required human resource plan.
- ▶ We have improved our recruiting effectiveness by enhancing the recruiting channels.

- ▶ We have identified human resource development plan according to our vision and mission as well as to constantly communicate among executives to ensure successors as needed. All along, we have stimulated our staff and management of the future goals and so they can accelerate self-development.
- ▶ Personnel retention through the organization of activities to continually strengthen cordial relationships between employees and HARN, such as New Employee Orientation, Annual Company Tour, New Year's Party and Family Day & Sports Day activities, with an Employee Opinion Survey undertaken annually to use the results and other recommendations for the improvement of work processes and work environment.

By the year 2019, the evaluation was 74.47%, compared with 68% in 2018, Increase from 9.51% in 2018. The company has analyzed the top scores and recommendations. Still a problem of internal communication, leadership, work environment and as well facilities which the company has assigned the relevant department to make a revised plan in 2020.

In 2019, the resignation of employees increased from 9.7% in 2018 to 14.86%, and the rate of recruitment to fill the vacancies was 23.75%, which was lower than the set target due to the recruiting position is the sales position, together with the line of recruitment in digital technology products making it difficult to find applicants who meet the requirements. Hence the company has looked back to the compensation structure by comparing the remuneration in the labor market at the same level.

However in 2020 the Company will put great emphasis on the progress of HR Master Plan.

5. Risk from impairment of goodwill

The Company 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 its subsidiary, which is higher than a fair value of Chillmatch Co., Ltd. and its subsidiary as of the date of issuance of new ordinary shares as a consideration for the said entire business transfer. In this respect, the Executive of Company will conduct an impairment test in every year and set aside an allowance for impairment loss (if any). The Company 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 management conducted the impairment test of goodwill based on value in use concept. The goodwill derived from the entire business transfer of Chillmatch Co., Ltd. and its subsidiary QIIS Co., Ltd. The management estimated the expected free cash flow "sometimes called realizable value" of the two business units. Those cash flow are consisted of forecasted sales, cost of goods sold, selling and administrative expenses (depreciation and amortization excluded), income tax, capital budgeting 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 the Company.

The management' 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 goodwill and customer relationship. Therefore, there is no indication of impairment of goodwill and other intangible asset obtained for the entire business transfer as of December 31, 2019. Likewise the overall process complied the financial reporting standards was audit by the certified public accountant.

6. Risk from corruption

The company is a distributor of valve products, fire extinguishing equipment, sanitary system, air conditioning system, cooling system and digital printing systems which imported from abroad and distributed to private and government sectors. In accordance to these processes may cause corruption just in case the company operates inaccurately such as importing goods, customs clearance or bidding further to offering high-value projects. Moreover, the internal processes which may be caused by neglect of non-compliance with the work practices of staffs such as procurement, control of goods or assets, disbursement of various expenses which forms of corruption may be caused by venality paying or being called to pay from government officials and as well disbursement of improper expenses or incorrect accounting records.

- ▶ The company has established a Risk Management Committee to assess, analyze and determine to manage business risks including prevent and monitor risks from corruption both at the organization and operation levels. In regards to provide an internal control system and audited from efficient auditors externally including to internal quality monitor according to ISO 9001: 2015 quality standards.
- ▶ The Company certified as a project member the Thai Private Sector Collective Action Coalition against Corruption (CAC) on November 5, 2018 to demonstrate its commitment to anti-corruption in all forms including the establishment of anti-corruption policies and guidelines communicated to the Board of Directors, executives, staffs at all levels and all relevant stakeholders to be acknowledged in the specified channels and report to the Board of Directors on a quarterly basis.
- ▶ Provide complaints channels and reporting clues;
the company assesses this risk control at a satisfactory level.

11

Shareholder structure

The Company has a registered and paid-up capital of Baht 292,250,000 divided into 584,500,000 ordinary shares with a par value of Baht 0.50 per share. Shareholder structure as of December 31, 2019 which is the latest book closing date of the Company is as shown below :

	No. of shareholders	No. of Shares held	%	Juristic person			Individual person		
				No. of shareholders	No. of shares held	%	No. of shareholders	No. of shares held	%
Thai shareholders	2,458	510,583,525	87.35	7	1,253,835	0.21	2,451	509,329,690	87.14
Foreign shareholders	2	73,916,475	12.65	1	73,316,475	12.55	1	600,000	0.10
Total	2,460	584,500,000	100.00	8	74,570,310	12.76	2,452	509,929,690	87.24

Business group structure



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

The company has a clear and transparent shareholding structure without cross-holding with major shareholders. And there is no pyramid shareholding structure in the group of companies Therefore does not cause a conflict of interest to any party The list of the major shareholders of the Company as of 31 December 2019 are as follows: (There are 102,868,070 minor shareholders representing 17.60% of the total shares)

No	Names of shareholders		No. of shares held	% of total shares
1.	Mr. Wirat	Sukchai	88,583,559	15.155
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.	Ms. Nopporn	Charnnarong	26,407,444	4.518
6.	Mr. Chaiwat	Taepaisitpong	24,120,000	4.127
7.	Mr. Thammanoon	Tripetchr	21,573,106	3.691
8.	Mr. Wasan	Nantakwang	18,091,600	3.095
9.	Ms. Panatda	Thongliam	14,832,149	2.538
10.	Mrs. Nopparat	Sukchai	13,000,000	2.224
11.	Mr. Pracha	Phromphornchai	11,460,688	1.961
12.	Mrs. Valeeratn	Chuerboonchai	8,081,986	1.383
13.	Miss Tarada	Tripetchr	7,504,024	1.284
14.	Miss Urairat	Hanthaweepat	6,873,791	1.176
15.	Mr. Parkphum	Wongpaitoon	4,230,325	0.724
16.	Mr. Thanasak	Treenuson	3,545,600	0.607
17.	Mr. Rattanaphan	Mukhariwattananon	3,457,902	0.592

Shareholding information board of directors and executives, including related parties and persons with relationship as of December 31, 2019

No.	Names of shareholders		No. of shares held	% of total shares
Board of Director				
1.	Mr. Thakol	Nunthirapakorn (1) [*]	-	-
2.	Miss Voranuch	Supaibulpipat (1) [*]	-	-
3.	Mr. Sothitorn	Mallikamas (1) [*]	-	-
4.	Mr. Supot	Tiarawut (1) [*]	-	-
5.	Mr.Wirat Sukchai Group (2)			
	5.1 Mr. Wirat	Sukchai	88,583,559	15.155
	5.2 Mrs. Nopparat	Sukchai (spouse)	13,000,000	2.224
6.	Mr. Thammanoon Tripetchr Group (2)			
	6.1 Mr. Thammanoon Tripetchr		21,573,106	3.691
	6.2 Miss Tarada	Tripetchr (daughter)	7,504,024	1.284
7.	Mr. Jain Charnnarong Group (3)			
	7.1 Mr. Jain	Charnnarong	72,319,130	12.373
	7.2 Mr. Harn	Charnnarong (father)	1,000,000	0.171
	7.3 Mrs. Prayoonsri	Charnnarong (mother)	733,900	0.126
8.	Mrs. Sirima	Iamsakulrat (1)	84,234,151	14.411
9.	Mr.Parkphum Wongpaitoon Group (2)			
	9.1 Mr. Parkphum	Wongpaitoon	4,230,325	0.724
	9.2 Mrs. Thiamjan	Wongpaitoon (spouse)	21,500	0.004
10.	Mrs. Valeeratn Chuerboonchai (3)			
	10.1 Mrs. Valeeratn	Chuerboonchai	8,081,986	1.383
	10.2 Mr. Thanit	Sajjaritanun (son)	53,000	0.009
	10.3 Miss Suthida	Sajjaritanun (daughter)	40,000	0.007

Notes : ^{*} Independent Director

Executives				
1.	Mr. Pracha Phromphornchai Group (2)			
	1.1 Mr. Pracha	Phromphornchai	11,460,688	1.961
	1.2 Miss Sukanya	Limkhamsuk (spouse)	200,000	0.034
2.	Mr. Rattanaphan Mukhariwattananon Group (2)			
	2.1 Mr. Rattanaphan	Mukhariwattananon	3,457,902	0.592
	2.2 Mrs. Rabeab	Mukhariwattananon (mother)	140,000	0.024

Executives

3.	Mr. Suchat Suwatnodom Group (2)			
	3.1 Mr. Rattanaphan Mukhariwattananon	483,416	0.083	
	3.2 Miss Anyakorn Wainetsuttha (spouse)	53,500	0.009	
4.	Mr. Sukit Litikorn (1)	456,827	0.078	
5.	Mr. Withoon Thamee (1)	487,036	0.083	
6.	Mr. Pongsawat Penglengpol (1)	8,689	0.002	
7.	Mrs. Varinkan Teraumranon (1)	1,050,290	0.180	
8.	Mr. Wisit Wachiralappaitoon (1)	330,431	0.057	

Table summarizing change in shareholding proportion of the Board of Directors and top executives of the Company as of December 31, 2019 :

No.	Names of directors/executives		At Date		Increase (Decrease)
			December 31, 2019	December 31, 2018	
Board of Director					
1.	Mr. Thakol	Nunthirapakorn ^{/1}	-	-	-
2.	Miss Voranuch	Supaibulpipat ^{/1}	-	-	-
3.	Mr. Sothitorn	Mallikamas ^{/1}	-	-	-
4.	Mr. Supot	Tiarawut ^{/1}	-	-	-
5.	Mr. Wirat	Sukchai	88,583,559	87,981,135	602,424
6.	Mr. Thammanoon	Tripetchr	21,573,106	21,159,399	413,707
7.	Mr. Jain	Charnnarong	72,319,130	72,319,130	-
8.	Mrs. Sirima	Iamsakulrat	84,234,151	72,649,151	11,585,000
9.	Mr. Parkphum	Wongpaitoon	4,230,325	4,230,325	-
10.	Mrs. Valeeratn	Chuerboonchai	8,081,986	8,276,986	(195,000)

Notes : ^{/1} Independent Director

Top Executives

1.	Mr. Pracha Phromphornchai	11,460,688	11,311,315	149,373
2.	Mr. Rattanaphan Mukhariwattananon	3,457,902	3,306,864	151,038
3.	Mr. Suchat Suwatnodom	483,416	443,604	39,812
4.	Mr. Sukit Litikorn	456,827	276,776	180,051
5.	Mr. Withoon Thamee	487,036	419,571	67,465
6.	Mr. Pongsawat Penglengpol	8,689	32,300	(23,611)
7.	Mrs. Varinkan Teraumranon	1,050,290	949,823	100,467
8.	Mr. Wisit Wachiralappaitoon	330,431	223,867	106,564

12 Dividend Policy

The Company has a policy of paying dividend at not less than 40% of net profit after income tax and reserves of all types as required by law and according to the separate financial statements. Dividend payment depends on the Company's cash flow, adequacy of working capital in business operation, investment plan, loan repayment, terms and conditions the agreements binding the Company, legal restrictions, and other circumstances as necessary and appropriate in the future.

The Board of Directors' resolution on dividend payment shall be subject to the approval of the shareholders' meeting, unless it is interim dividend which the Board of Directors shall have the authority to approve from time to time when it considers that the Company has sufficient profit to do so as appropriate. In such case, the interim dividend payment shall be submitted to the next shareholders' meeting for information.

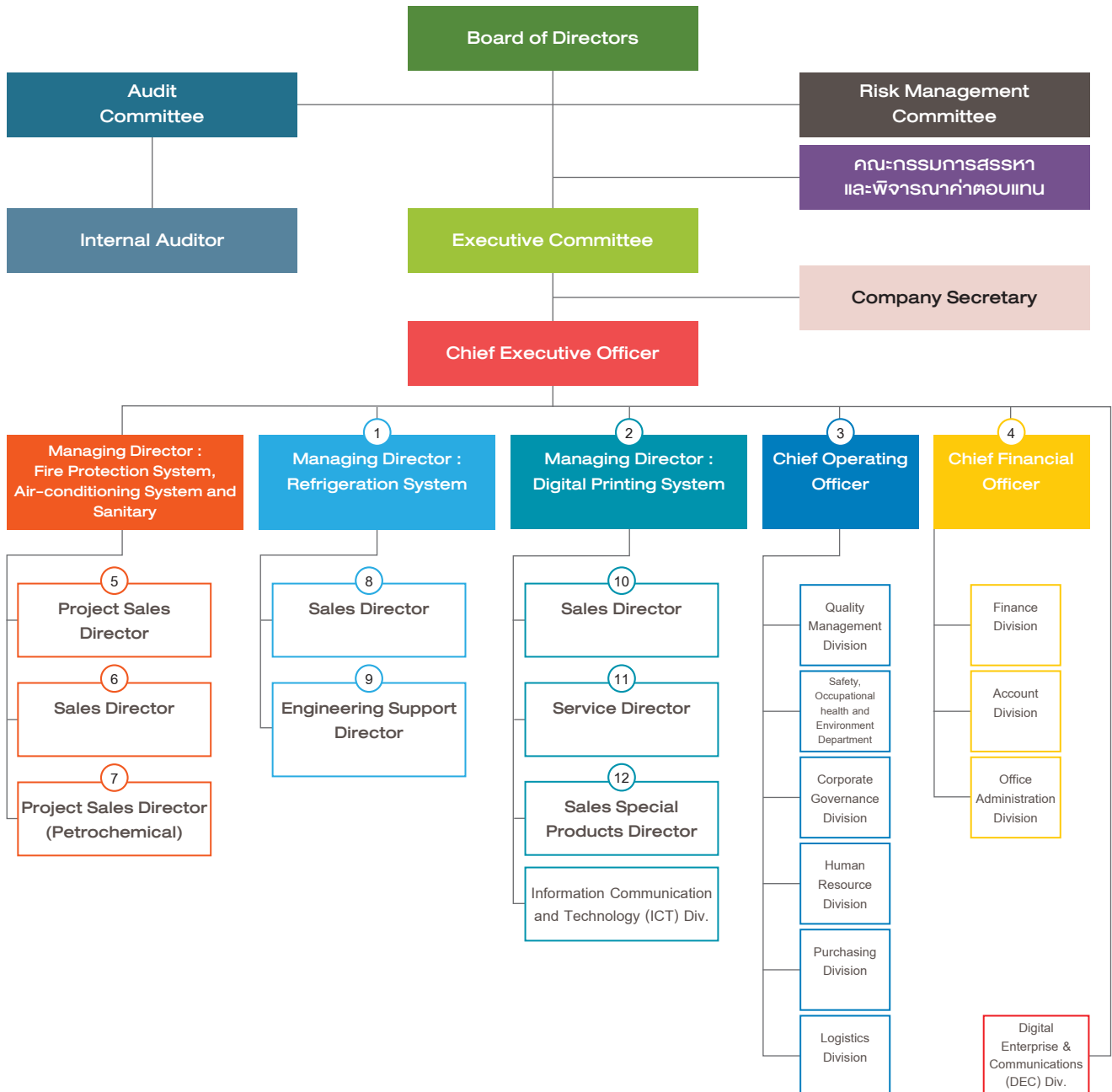
Dividend payment	2019	2018	2017	2016
Interim dividend payment (Baht per share)	-	-	-	-
Annual dividend payment (Baht per share)	0.18	0.16	0.14	0.09
Stock dividend (Baht per share)	-	-	-	-
Earnings per share (Baht)	0.26	0.23	0.22	0.11
Dividend payout ratio (%)	69.23	69.57	63.64	81.82
Par Value (Baht per share)	0.50	0.50	0.50	0.50
Outstanding ordinary shares (Share)	584,500,000	584,500,000	584,500,000	584,500,000

Remark :

- The 2019 dividend payment of Baht 0.18 per share paid being submitted to approval at the 2020 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.

13 Management Structure

Organization Chart HARN ENGINEERING SOLUTIONS Public Company Limited



Note : Management no. 1 - 12 is Company executives according to the Notification of the Securities and Exchange.

The Management Structure of Harn Engineering Solutions Public Company Limited comprises of

- The Board of Directors
- The four Board-Committees supporting the consideration and important issues as assigned by the Board : the Audit Committee, the Executive Committee, the Nomination and Remuneration Committee and the 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 management with the Chief Executive Officer as the highest executive of the Company

1 Board of Directors

As of December 31, 2019, the Board of Directors is comprised of ten Directors as follows:

- Eight None-Executive Directors, four of which are Independent Directors
- Two Executive Director, The Chief Executive Officer, one person and one person Managing Director

The Board of Directors as of December 31, 2019 comprised of:

No.	Name	Position	Appointment date
1.	Dr. Thakol Nunthirapakorn	Independent Director Chairman of the Board Chairman of the Audit Committee	September 5, 2012 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 September 5, 2012 December 17, 2018
3.	Dr. Sothitorn Mallikamas	Independent Director Member of the Audit Committee Member of the Nomination and Remuneration Committee	September 5, 2012 September 5, 2012 December 17, 2018
4.	Dr. Supot Tiarawut ¹⁾	Independent Director Chairman of the Risk Management Committee	November 1, 2016 November 11, 2016
5.	Mr. Wirat Sukchai	Director Member of the Risk Management Committee Chairman of the Executive Committee Chief Executive Officer Managing Director	September 5, 2012 November 11, 2016 March 1, 2018 December 1, 2016 September 5, 2012
6.	Mr. Thammanoon Tripetchr	Director Member of the Risk Management Committee Member of the Executive Committee, Managing Director	November 1, 2016 November 11, 2016 December 1, 2016
7.	Dr. Jain Charnnarong	Director Member of the Executive Committee	April 28, 2017 March 1, 2017
8.	Mrs. Sirima Iamsakulrat	Director Member of the Nomination and Remuneration Committee	September 5, 2012 December 17, 2018

No.	Name		Position	Appointment date
9.	Mr. Parkphum	Wongpaitoon	Director	September 5, 2012
10.	Mrs. Valeeratn	Chuerboonchai	Director	September 5, 2012

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

¹⁾ Dr.Supot Tiarawut resigned from the position of Independent Director and, Chairman of the Risk Management Committee with effect from 1 January 2020.

Mrs. Varinkan Teraumranon is the Company Secretary.

The Company has four Independent Directors which make the Company's Board of Directors shall have at least three Independent Directors representing no less than one-third of the total number of directors, and shall have at has three Audit Committee members. Each Independent Director and Audit Committee member 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).

Structure of the Board of Directors

1. Has sufficient committees that can take care of operation which comprises of skillful and experienced personnel and capable to work on duty effectively. Number of committees must not be less than five persons according to the law where three or more or not less than one third of total committees must be Independent Director. Independent Directors must be able to comment on management's work freely which may balance votes for further actions as well as re-examine administrative section for the absolute benefits of the company. Also, those three Independent Directors must also take a position of Audit Committee.
2. At least half of committees must reside in Thailand.
3. Number of committees that are management level must not exceed half of total committees in order to balance between two parties.
4. Must have committees that are not management level at least one person that is experience in trading engineering products which is a core of the business and at least another one person that is experience in Accounting and Finance. Board of Directors determined that company policies must be shared to form body of the Board of Directors including set number of years in position of Board of Directors of individual committee in the Annual Report and on the company's website.

Term of Office of the Board of Directors

1. At each annual general meeting, one-third (1/3) of the directors must retire from office. If the number of directors cannot be divided exactly into the number corresponding to one-third, the directors must retire in the number nearest to one-third (1/3).

The directors to vacate office within the first and second year following company registration shall draw lots. In subsequent years, the directors serving the longest shall resign. A retiring director is eligible for re-election.

2. Committees have term of office as mandated in company's regulations. Committees that retired from the position may be elected as a committee once again with unlimited rights. Qualifications of Independent Directors, set by the Board of Directors, Stipulates a policy that Independent Directors may be in position not for more than nine consecutive years, counting from the day of the company Listed on the stock exchange.

3. In addition to retirement by rotation, a director shall vacate office upon:
 - 3.1 death;
 - 3.2 resignation;
 - 3.3 lack qualifications or possess characteristics that are prohibited under the Public Limited Company Or the law governing securities and stock exchange;
 - 3.4 removal by resolution of the shareholders' meeting;
 - 3.5 removal by order of the court.
 - 3.6 Being 80 years old, but vacating office from the end of the accounting year.

4. Any director who wishes to resign from office must tender his resignation to the Company. The resignation shall be effective as from the date on which the resignation reaches the Company.

A resigning director under the first paragraph may also notify the Registrar of his resignation.

5. In case any vacancy occurs in the Board of Directors for reasons other than retirement by rotation, the Board of Directors shall elect a person who has the required qualifications and has no prohibited characteristics under the public limited companies law or the securities and exchange law as a replacement at its upcoming meeting, except if such remaining of the term of office less than 2 months. The replacement director shall hold office only for the remainder of the term of office of the director whom he replaces.

The resolution of the Board of Directors pursuant to the first paragraph must be approved by the votes of not less than three-fourths of the number of the remaining directors.

6. In case the entire Board of Directors vacate office, all the vacating directors shall remain in office temporarily to carry on the business only for a period of time as deemed necessary until the new Board of Directors take office, unless otherwise ordered by the court in the event of directors vacating office at the order of the court.

The vacating directors shall arrange a shareholders' meeting to elect a new Board of Directors within one month from the date of vacating office. They shall send a meeting notice to the shareholders at least 14 days prior to the meeting and publicize the notice in a newspaper at least three days prior to the meeting date for three consecutive days.

7. The shareholders' meeting may resolve for any director to vacate office before the retirement by rotation with the votes of at least three-fourths of the number of the shareholders attending the meeting and having the right to vote.

Authorized Directors as the Company's Signatories

According to the Company's Articles of Association, the number or name of the authorized directors shall be binding on the company. Two (2) directors jointly sign. The meeting of shareholders or the Board of Directors. Has the power to determine the list of authorized directors to bind the company.

Through the Board of Directors at the Meeting No. 2/2019 on March 28, 2019, the Board of Directors has approved Directors having authority to sign on behalf of the Company as follow First Group Mr. Wirat Sukchai, Mr. Thammanoon Tripetchr, Second Group Mrs. Sirima Iamsakulrat, Mr. Jain Chamnarong, Mrs. Valeeratn Chuerboonchai, One of the directors in a group 1 shall jointly sign to sign with one of the directors in group 2, Total is two people

Role and Responsibility of Chairman of the Board of Directors

The Board of Directors 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 the Company to ensure efficiency and compliance with relevant rules and regulations and to meet the meeting objectives. (Details of selection / role Duties and responsibilities of the Chairman of the Board Shown in the topic 14. Corporate Governance, Chapter 3 Strengthen the Board of Directors, Page 68)

Role and Responsibility of the Board of Directors

The Board of Directors has a main role in determine policies and overall of the organization, strategic planning and take main action on corporate governance, audit, evaluate business performance according to plans as well as to operate the business under the law, enforcement, shareholders' direction with ethical and moral under business conduct. Moreover, the Board of Directors manage corporate governance and administer management to reach set goals at maximum benefits to the company, shareholders and stakeholders as follow:

1. Determine corporate vision, policies, strategies, targets, business plans, annual budget, management structure and delegation of authority, as well as corporate governance policy. In the year 2019, the Board of Directors reviewed and approved the strategy and monitor and ensure that the strategy is implemented, the Board of Directors' meetings in every quarter, the Board monitors the performance of the management to be in accordance with the strategy set.
2. Monitor and supervise the performance of the management or any other persons assigned in compliance with the specified policies, plans and budget in an efficient and effective manner, and ensure that the Company's business management is in line with the corporate governance policy.
3. Able to appoint sub-Board of Directors to assist in studies and consider other administrative tasks such as Audit committees, Executive Committees, Nomination and Remuneration Committee Risk Management Committees, Chief Executive Officer and Managing Directors, Including determining the scope of authority of the sub-Board of Directors, Chief Executive Officer and Managing Director the appointed.

In this regard, the authority delegated under the specified scope of power and duties shall not be in the nature that will enable the Executive Committee, Chief Executive Officer, Managing Director and sub-Board of Directors to consider and approve transactions which may have conflict of interest, beneficial interest or any other conflict of interest with the Company or subsidiaries (if any), unless the approval of such transactions is in line with the policy and criteria duly approved by the Board.

The Board's assignment of the Chief Executive Officer, Managing Director or any other person to perform duty on behalf of the Board shall be conducted in writing or clearly recorded as a resolution of the Board meeting in the relevant meeting minutes, with the scope of power and duties of the authorized person clearly specified.

4. Evaluate on a regular basis the performance of the management, and oversee the remuneration payment mechanism for executives and employees to ensure appropriateness.
5. Put in place reliable accounting system, financial reporting and auditing process, and oversee documentation system to facilitate examination of information thereafter.
6. Arrange for the Company's preparation of financial statements that are accurate, exhibiting factual information of its financial status and operating results in the previous accounting period correctly and completely in conformity with the generally accepted accounting principles. The Company's financial statements as of the end of the accounting period must be audited by its auditor before submitting to the shareholders' meeting with report of the Board of Directors' responsibility for the financial reports presented together with report of the auditor in the Annual Report.
7. Ensure the Company has efficient and effective internal control and internal audit systems, comprehensive risk management system and process, effective reporting and monitoring procedure, complaint handling mechanism and actions in case of whistle blowing, and the Company's management process is in line with corporate governance policy.
8. Ensure a clear and transparent process is in place to manage transactions between the Company and related persons to prevent conflict of interest, with correct and adequate disclosure of information and reports to the Board on a regular basis.

9. Ensure continuity in business operation, employee development plan and executive succession plan, and institute effective nomination and succession procedures of directors and senior executives.
10. Consider to approve and/or give opinion on connected transactions, acquisition or disposition of assets, investment and any other businesses of the Company and subsidiaries (if any) in accordance with the applicable laws, notifications, requirements, rules and regulations, unless it is prescribed by law to seek approval from the shareholders' meeting.
11. Safeguard and ensure benefits for major and minor shareholders on a fair and equitable basis, and make available to the shareholders and other stakeholders accurate operational highlight reports and financial reports as prescribed by laws. Directors shall, without delay, notify the Company of his beneficial interests in any of the contracts or agreements made with the Company or of increase or decrease in the shareholding in the Company or subsidiaries (if any). Directors with beneficial interest in any transactions made with the directors or persons who may have conflict of interest or beneficial interest or any other conflict of interests with the Company or subsidiaries shall not be entitled to vote on such transactions.
12. The Board of Directors may authorize one or more directors to or any other persons to perform any duties on behalf of the Board, subject to the control and supervision by the Board, or to authorize such person to have power as considered appropriate by the Board and for a specified period of time as the Board may deem

In this regard, such authorization shall not be in the nature that will enable such person to consider and approve transactions in which he or other person may have conflict of interest, beneficial interest or any other conflict of interest in other nature with the Company or subsidiaries (if any), unless the approval of such transactions is in the normal course of business and consistent with general trade conditions or the policy and criteria duly approved by the Board.
13. Appoint company secretary who has appropriate experience and qualifications in performing the roles and responsibilities specified in the Securities and Exchange Act. The Company Secretary is responsible for providing advice on the laws and regulations of which the Board members need to be aware and making arrangements for all activities pertaining to the Board of Directors, as well as coordinating with relevant parties to ensure they follow the resolutions of the Board of Directors. The qualifications and professional experience of the Company Secretary are disclosed in 59-60.
14. Encourages the Company Secretary to continuously undergo training and development of knowledge on legal and accounting areas as well as that on secretarial duties.
15. Create written Corporate Governance Policy of the company and communicate throughout the organization with the common understanding and knowledge to encourage and support all staff to comply to the set policies. Moreover, the Board of Directors should review the policies and comply to at least once a year.
16. Adhere to fair and fair business practices by stipulating Code of Conduct in written, then publish and reinforce to Committees, Management, and all employees, Understand of the ethics and morals that used in the business and set as a practice to show good corporate governance, transparent and ethical organization to stakeholders, respect social and environment through seminars and internal communication. The ethics reflect values and practices that employees should exercise and respect the code of conduct set by the organization in written and able to access publicly. All should strictly comply and follow the guidelines. The Board of Directors must monitor on the Code of Conduct closely.
17. Establish policies and anti-corruption measures in written to ensure that all operations of the organization are under the law related to anti-corruption including communicate to the Board of Directors, management, and employees at all levels

including stakeholders and promote as one of the core values of the company. The Board of Directors are responsible to review policies and measurement of anti-corruption annually to correlate with the current business operation, orders, regulations, and the law.

18. Consider the conflict of interest thoroughly, consideration of actions that clearly have conflict of interest and for absolute benefits of the company and stakeholders. The conflict of interest prevents the Board of Directors, management, employees and stakeholders to seek for personal interests that conflict with the organization's interests and avoid all actions that may cause conflict of interest. Nevertheless, stakeholders and relevant parties connect to items considered must be reported to the company in regards to relationship or network of individual where the individual must not play a part of any action.

The Audit Committee will propose the Board of Directors about connected transactions and conflict of interest which were considered carefully. The company must comply to the rules of The Securities and Exchange Commission, Thailand and Stock Exchange of Thailand strictly in regards to pricing and policies to any party that may has conflict of interest as transaction with third parties.

In addition, the Board of Directors exercise and control regulation in procedures disclosure of information that may contain conflict of interest thoroughly which specify in financial statement, annual report and annual registration statement (Form 56-1).

19. Arrange internal control which a main algorithm to create confidence to risk management department and able to operate the business effectively. Resources must be allocated accordingly to achieve set goals and protect assets from damage or misconduct. Also, the Board of Directors assist to create credibility in financial statement, look over disclosure of information from employees in accordance to the rules and regulations that protect investment of stockholders. Therefore, the company sets responsibility, authority of administration and management in several topics in written and controls the use of company assets in order to maximize profits. Duties of operating employees and controllers must be separated for balance and audit purposes.

The Board of Directors delegate the Audit Committee to examine and responsible for reviewing suitability and effectiveness of the internal audit system that administrative section set previously together with forming and reviewing the audit system in both operation, financial report, compliance, rules, policies, supervision of operations and covers risk management and put importance to fire alarm and abnormalities.

In addition, the Company hired third party that works independently to responsible for audit. Main tasks are to verify and ensure that the company has sufficient internal control and to let the audit works freely. The audit able to examine and balance out. The internal audit must be reported directly to the Audit Committee. Consequently, the company has regular assessment to ensure that the internal audit system planned work effectively where assessment of internal control and review will take place at least once a year and will be stated in the annual report of the company.

20. Set Risk Management Policy throughout the organization. Review and assessment of the Risk Management will take place every quarter of the year.
21. Set the operation system for receive suggestions of any party for complaints and clues or any conflict of interest through website or direct report to the company by inform notices to the Independent Directors or the Internal Audit Committee so that internal examine will take place as per procedures and report to the Board of Directors.

2 Supporting Committees

2.1 Audit Committee

The Audit Committee is composed of three independent directors, all of whom have full qualifications as stipulated by the SEC and the SET and at least one whom has competence and experience in reviewing the reliability of the financial statements, as named below:

Name		Position
1. Dr. Thakol	Nunthirapakorn	Chairman of the Audit Committee
2. Miss Voranuch	Supaibulpipat	Member of the Audit Committee
3. Dr. Sotthithorn	Mallikamat	Member of the Audit Committee

Mr. Thakol Nunthirapakorn is the Committee members who have adequate competence and experience in reviewing the reliability of the financial statements, having graduated with a Doctoral degree from Col. Of Bad./Accounting, MIS, Economics, University of Arkansas, U.S.A. and had passed the 8th Director Accreditation Program (DAP) of the year 2004. Mr. Wisit Wachiralarpaitoon is the secretary to the Audit Committee.

Structure of the Audit Committee

The Audit committees must comprise of the following:

- Has no more than 1% of voted shares of the company, main company, subsidiary, joint venture, main shareholders, or any delegated person. Hence, shares counted include any relevant parties.
- The Audit committees comprise of at least three qualified independent directors according to the law of public company limited and law of securities and the Stock Exchange of Thailand.
- The Audit Committee is an expert for each given task. At least one committee has experience or solid knowledge in Accounting or Finance and is senior enough to work and audit credibility of financial statement.
- The Board of Directors appoints and choose one audit committee as Chairman of Audit Committees.
- Audit committees appoint a Secretary of the Audit Committees where Chief Financial Officer is the secretary to the audit committee.

Audit Committee's term of office

- The Audit Committees are able to have 3 years term of office and retired Audit Committees are able to be appointed once again. Apart from aforementioned retirement, the Audit Committees may be vacated in case of
 - death;
 - resignation;
 - lacking the qualifications of the audit committee under charter or in accordance with the regulations of the Office of the SEC and the Stock Exchange of Thailand.;
 - retirement from Director position or at the end of term of office as the Board of Director.
- The Audit Committee whom wishes to resign must present a resignation letter to the Chairman of Board of Directors at least one month with specified reasons and wait for approval from the Board of Directors. The company will give notice on the resignation with a copy of resignation letter to Stock Exchange of Thailand. In case of the whole Audit

Committees Vacated the entire faculty, the Audit Committees must retain in position until the new Audit Committees are appointed and take over.

3. In case of other Audit Committees are vacant because of other reasons apart from due term vacated, the Board of Directors must appoint qualified person as the member of Audit Committee within 90 days so that numbers of the Audit Committees are met as regulated. The replacement can remain in position for until due term of office. Hence, the company shall notify the said vacate of office of the audit committee together with the reasons to the Stock Exchange immediately.

Role and Responsibility of Audit Committee

1. Review the Company's financial reporting to ensure its accuracy and adequacy.
2. Review the Company's internal control and internal audit systems to ensure that they are appropriate and effective; consider the independence of the internal audit office throughout consider the internal audit operational framework, annual internal audit plan and budget to ensure that they are consistent with the operational framework and sufficient to support works under the Audit Committee's responsibilities.
3. Review the Company's compliance with the Securities and Exchange Act, the SET's regulations ("Stock Exchange") relevant to the Company's business.
4. Consider, select, and lay off the appointment of an independent persons to perform the duties of the Company's auditor, and also propose the remuneration of that person, as well as attend the meetings with the auditor and internal auditor at least once a quarter.
5. And lay off which is independent persons
6. Consider relevant transactions or those having possible conflict of interest to ensure that they are compliant with all pertinent laws and requirements of the SET, reasonable, and bring utmost benefit to the Company.
7. Consider and evaluate transactions that are at risk of corruption And specify measures / methods for controlling and managing risks Review all the information in the self-assessment on anti-corruption measures.
8. Prepare the Audit Committee's report to be disclosed in the Company's Annual Report, which is signed by the Chairman of the Audit Committee and must comprise of the following information at minimum:
 - Comments on validity and complete which account to credibility of the financial report of the company
 - Comments on sufficiency of internal control system of the company
 - Comments on operation according to the Security Stock Exchange law, regulations of the Stock Exchange or laws concern operation of the firm.
 - Comments on appropriateness of the auditors.
 - Comments on transactions that may have conflict of interest
 - Numbers of meetings of the Audit Committees and attendance of each Audit Committee
 - Comments on common notices found from observation and audit
 - Report any concern that shareholders and investors should know under the authority of duty and responsibility given by the Board of Directors.
9. Pursue any operations delegated by the Board of Directors and the Audit Committees. On duty, the Audit Committees are responsible to the Board of Directors directly and the Board of Director still responsible for operation of the business and stakeholders.

10. Review and comment on anti-corruption procedures including risk management that may connect to risks from corruption to ensure that operation of the company is transparent, honest, fair, with moral principles, with ethics and respect anti-corruption policies in all means.
11. Accept complaints, clues, take note on corruption activities externally and internally that involve the Board of Directors, management, employees. Examine information and present to the Board of Directors and seek for punishment or ways out according to anti-corruption policies.
12. Summarize and submit the Audit Committee's mission to the Board of Directors for acknowledgement.

The Audit Committee has the power to take the following actions: inviting directors, employees, contract employees to attend the meeting to discuss, clarify or answer any question relating to the Committee's duties and responsibilities; discussing with the Company's expert or consultant (if any); or engaging a third-party consultant or specialist if necessary at the Company's expenses; requesting the Company's employees to submit necessary documents about the Company's operation for auditing or investigation for work accomplishment; assigning any employee or contract employee to within the scope of duties of the Committee for the audit purpose; and taking any action as specified above in relation to subsidiaries as assigned or requested by subsidiaries and as allowed by the scope of their authority and duties.

The Company does not have an internal audit work unit yet. It has thus hired Ultima Advisory Co., Ltd., an external audit agency that is not related to the Company, as its internal auditor to examine and ensure the adequacy and appropriateness of the Company's internal control system.

2.2 Executive Committee

The Board of Directors appoints the Executive Committee by selecting among directors, executives or senior employees, who are competent in managing day-to-day business operations; administering the Company; formulating policy, business plan, budget plan, and management structure; and inspecting and monitoring operating results of the Company in compliance with the policy determined by the Board.

The Executive Committee is composed five members as follows:

No.	Name		Position
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	Wachiralappaition	Member of the Executive Committee
5.	Mrs. Varinkan	Teraumranon	Member of the Executive Committee
			And Secretary to the Executive Committee

Structure of the Executive Committee

Executive Committee must comprise of the following:

1. Selecting directors and/or management that is nominated by the Nomination and Remuneration Committee. Executive Committees are consisted of at least three Executive Committees.
2. The Board of Directors select and appoint one Executive Committee that is appropriate as Chairman of Executive Committee whom will have term of office equally to the term of office of the Executive Committees.

3. The Executive Committees review and appoint a person that is suitable as a secretary to the Executive Committee in order to deliver meeting minutes and notes.

Executive Committee's term of office

1. The Executive Committees are able to have 3 years term of office and retired Audit Committees are able to be appointed once again. Apart from aforementioned retirement, the Audit Committees may be vacated in case of
 - 1.1 death;
 - 1.2 resignation;
 - 1.3 lacking the qualifications of the audit committee under charter;
 - 1.4 the Board of Directors resolved to vacate the position;
 - 1.5 retirement from Director position or at the end of term of office as the Board of Director / the Company executives.
2. The Executive Committees whom wishes to resign must present a resignation letter to the Chairman of Board of Directors at least one month with specified reasons and wait for approval from the Board of Directors, In the case of the executive committee Vacated the entire faculty To the executive committee Who vacates the position, must maintain the position To proceed first until the new board of directors takes office.
3. In case the Executive Committees are vacant, because of other reasons apart from due term of office, the Board of Directors must appoint qualified person as the member of Audit Committee within 90 days so that numbers of the Executive Committees are met as regulated by the Board of Directors. The replacement can remain in position for until due term of office.

Role and Responsibility of Executive Committee

The Executive Committee has power, duties, and responsibilities in administering the Company's day-to-day business and operations in accordance with the Company's objectives, articles of association, policies, rules, provisions, orders, and resolutions of the Board of Directors' and the shareholders' meetings. The Executive Committee shall screen and map out policy, business plan, budget plan, management structure, administrative authority, and criteria in the business operation in line with the economic conditions and propose them to the Board of Directors for consideration and approval and/or consent, as well as inspect and monitor the Company's operational performance in line with the policy set forth.

In summary, the scope of power, duties and responsibilities of the Executive Committee covers:

1. Propose policies, strategies, targets, operation plan, annual budget, incorporate new business unit/ exit business/ merger and acquisition/joint venture, which play a part in administration, financial plan, organizational and administrative structure; and examine and screen the proposals submitted by the management before proposing for the Board of Directors' approval.
2. Oversee the Company's business operation and follow up the results thereof to be in line with the policies, targets, operation plan, targets and budget approved by the Board of Directors or as assigned by the Board of Directors, as well as regularly report the operational performance to the Board meeting.
3. Consider and approve key capital expenditure as specified in the annual budget and assigned by the Board of Directors, or as approved in principle by the Board of Directors.
4. Consider and approve off-budget capital expenditure in an amount not exceeding Baht 10 million. Such transactions, once approved, shall be informed to the Board of Directors.

5. Consider and approve borrowing, acquisition of credit lines, or any credit facilities each in an amount not exceeding Baht 10 million and in a total amount not exceeding Baht 30 million. In case of using the Company's assets as collateral security, approval must be sought from the Board of Directors.
6. Consider to propose payment of an interim dividend or annual dividend before submission for the approval of the Board of Directors and the shareholders' meeting accordingly.
7. Formulate a human resource management policy, and select and appoint persons with suitable qualifications to hold managerial positions from the general manager level upward, with the exception of the position of managing director, as well as transfer, terminate employment, determine remuneration including bonuses and other benefits commensurate to the duties of such managerial positions.
8. Have the power to authorize any person or persons to perform any act under the control of the Executive Committee, or for that person to have power as considered proper by the Executive Committee within the specified timeframe. The Executive Committee may cancel, revoke, withdraw, change or correct the authorized person as appropriate.

The Executive Committee's authorization as such must not be made in a manner of authorization or sub-authorization that enables the authorized person to approve the transaction in which such authorized person or person with possible conflict of interest (as defined in the Notification of the Capital Market Supervisory Board and/or the SET, and/or other relevant agencies) has beneficial interests or may have any other conflict of interest with the Company or its subsidiaries and/or associated companies. The Executive Committee has no power to approve the proceeding of such transaction, and has to propose it to the Board of Directors meeting and/or the shareholders' meeting (as the case may be) for approval, unless it is the approval of a transaction in the normal course of business operation and under normal commercial terms pursuant to the Notification of the Capital Market Supervisory Board and/or the SET, and/or other relevant agencies.

9. Perform any other duties as assigned by the Board of Directors on a case by case basis.

2.3 Risk Management Committee

The Company's Risk Management Committee as 31 December, 2019 is composed of eleven members as follows:

No.	Name		Position
1.	Mr. Supot	Tiararwut ¹⁾	Chairman of the Risk Management Committee
2.	Mr. Wirat	Sukchai	Member of the Risk Management Committee
3.	Mr. Thammanoon	Tripetchr	Member of the Risk Management Committee
4.	Mr. Rattanaphan	Mukhariwattananon	Member of the Risk Management Committee
5.	Mr. Pracha	Phromphornchai	Member of the Risk Management Committee
6.	Mr. Suchat	Suwatnodom	Member of the Risk Management Committee
7.	Mr. Sukit	Litikorn	Member of the Risk Management Committee
8.	Mr. Withoon	Thamee	Member of the Risk Management Committee
9.	Mr. Pongsawat	Penglengpol	Member of the Risk Management Committee
10.	Mr. Wisit	Wachiralappaitoon	Member of the Risk Management Committee
11.	Mrs. Varinkan	Teraumranon	Member of the Risk Management Committee and Secretary to Risk Management Committee

Note : ¹⁾ Dr. Supot Tiararwut resigned from the position of Independent Director and, Chairman of the Risk Management Committee with effect from 1 January 2020.

Structure of the Risk Management Committee

Consist of Managing Directors, Chief Executive Officer, Managing Directors and Directors as Risk Management Committees automatically by titles which are appointed by a Chairman of Risk Management Committee whom was appointed by the Board of Directors. The Chief Operating Officer is a secretary to automatically the Risk Management Committee by title.

Risk Management Committee's term of Office

The Risk Management Committee consists of executives from various work units. In case any Committee member resigns during the term of office, Chairman of the Risk Management Committee shall appoint a new member to replace the vacating member and report the same to the upcoming Board of Directors' meeting.

Retirement from the position

Risk Management Committee must immediately be retired when

- due term of office / Chief Executive Officer / Managing Director / Director of Division
- death;
- resignation;
- the Risk Management Committees resolved to vacate the position;
- lacking the qualifications of the audit committee;

Role and Responsibility of Risk Management Committee

1. Consider and screen the overall risk management policy and guidelines of the Company which shall encompass major risk categories, including risks such as financial risks Investment risk And risks that affect the reputation of the business, etc. to be presented to the Board meeting for approval.
2. Put in place risk management strategies and guidelines in line with the determined risk management policy to assess, monitor and control risk to be at appropriate level.
3. Oversee and monitor implementation of the risk management policy under the direction and guidelines approved by the Board.
4. Set risk measurement criteria and risk limit.
5. Determine appropriate measures to manage risks in alignment with the circumstances.
6. Review adequacy of the overall risk management policy and system, and the effectiveness of the system and compliance with the policy in place.
7. Report to the Board on a quarterly basis risk management, implementation and risk status of the Company as well as changes and remedy and improvement actions to comply with the policy and strategy set forth.
8. Appoint Risk Management Working Committee as deemed necessary.
9. Support Risk Management Working Committee in respect of manpower, budget and other resources required in line with the defined scope of responsibilities.
10. Arrange to review the system or assess the effectiveness of risk management at least once a year and disclose it in the annual report of the company and in every period found that The risk level has changed. Which includes giving priority to early warning signals and various unusual items.

2.4 Nomination and Remuneration Committee

The Company's Nomination and Remuneration Committee as 31 December, 2019 is composed of three members as follows:

No.	Name		Position
1.	Miss Voranuch	Supaibulpipat	Chairperson of the Nomination and Remuneration Committee
2.	Dr. Sothitorn	Mallikamas	Member of the Nomination and Remuneration Committee
3.	Mrs. Sirima	Iamsakulrat	Member of the Nomination and Remuneration Committee and Secretary to the Nomination and Remuneration Committee

Structure of the Nomination and Remuneration Committee

1. Nomination and Remuneration Committees comprise of at least three Board of Directors whom are the Independent Director and non-management Director and more than half of the committees must be the Independent Directors.
2. The Board of Directors appoint the Independent Committee as a Chairman of Nomination and Remuneration Committees
3. The Nomination and Remuneration Committees choose and appoint a Secretary of Nomination and Remuneration Committees

Nomination and Remuneration Committee's term of Office

1. The Nomination and Remuneration Committees has 3 years term of office where retired Nomination and Remuneration Committees may be appointed again after the aforementioned causes of retirement. The member of the Nomination and Remuneration Committees must vacate the position when
 - 1.1 death;
 - 1.2 resignation;
 - 1.3 lacking the qualifications of the Nomination and Remuneration Committee under charter;
 - 1.4 the Board of Directors resolved to vacate the position;
 - 1.5 retirement from Director position or at the end of term of office as the Board of Director.
2. The Nomination and Remuneration Committee whom wishes to resign must present a resignation letter to the Chairman of Board of Directors at least one month with specified reasons and wait for approval from the Board of Directors. The company will give notice on the resignation with a copy of resignation letter to Stock Exchange of Thailand. In case of the whole Nomination and Remuneration Committee Vacated the entire faculty, the Nomination and Remuneration Committee must retain in position until the new Nomination and Remuneration Committee are appointed and take over.
3. In case of other the Nomination and Remuneration Committee are vacant because of other reasons apart from due term vacated, the Board of Directors must appoint qualified person as the member of the Nomination and Remuneration Committee within 90 days so that numbers of the Nomination and Remuneration Committee are met as regulated. The replacement can remain in position for until due term of office.

Role and Responsibility of the Nomination and Remuneration Committee

1. Nomination
 - 1.1 Review composition, qualification of the Board of Directors and sub-board of Directors as a whole and as individual as see fit to size, type, and complexion of the business in both education background, knowledge, skills, expertise, experience, talents related to the business freely according the company policy.

- 1.2 Consider qualification of Chief Executive Officer as see fit to the administration of the company to meet set vision where education background, knowledge, expertise, and business environment must be considered such as tendency of the economic and industry along with competitiveness of the business as a part of the criteria.
 - 1.3 Set procedures and criteria to seek employees to meet structure and set qualifications stated in 1.1 and 1.2 by creating Board Skill Matrix to aid in recruiting that relate to business operations and adhere to good corporate governance.
 - 1.4 Recruit and select qualified Board of Director as committee in sub-board of Director including high-level management and to present to the Board of Director for approval once the position is vacant.
 - 1.5 Administer operation of the business and arrange an orientation, deliver relevant handouts to the new committees.
 - 1.6 Create and prepare Succession plan of the Chief Executive Officer to be ready as a part of the succession plan and oversee the smooth transition of the management.
 - 1.7 Encourage the company to give opportunity to small shareholders to submit individuals as a committee.
2. Remuneration
 - 2.1 Define and prepare policy on remuneration in written and suitable for Directors' responsibility where connect remuneration with the overall performance of the company to motivate and retain skillful, quality, and performed Directors. Details must be reviewed by the Board of Directors before presenting at Annual General Meeting and ask for approval.
 - 2.2 Present remuneration plan to the Board of Directors and appointed sub-Board of Directors in both monetary values and other benefits.
 - 2.3 Determine measurement of annual performance and consider appropriate compensation rate to the Chairman of the company as well as to present to the Board of Directors for approval.
 3. Review charter of the Nomination and Remuneration Committees regularly.
 4. Responsible for other duties that delegated by the Board of Directors.

Attendance of the board meeting

In the year 2019, the Whole committee attended the meeting an average of 92% by attending the meeting of the Board of Directors Sub-committee and the General meeting of shareholder are summarized as follows;

Name		Position	Board of Director (6 times)	Audit Committee (4 times)	Executive Committee (12 times)	Nomination and Remuneration Committee (4 times)	Risk Management Committee (4 times)	Annual General Meeting of Shareholders (AGM) (1 times)
1. Dr. Thakol	Nunthirapakorn	Independent Director Chairman of the Board Chairman of the Audit Committee	6/6 (100%)	4/4 (100%)				1/1
2. Miss Voranuch	Supaibulpipat	Independent Director Member of the Audit Committee Chairperson of the Nomination and Remuneration Committee	6/6 (100%)	4/4 (100%)		4/4 (100%)		1/1
3. Dr. Sothitorn	Mallikamas	Independent Director Member of the Audit Committee Member of the Nomination and Remuneration Committee	6/6 (100%)	4/4 (100%)		4/4 (100%)		1/1
4. Dr. Supot	Tiarawut ¹⁾	Independent Director Chairman of the Risk Management Committee	4/6 (67%)				4/4 (100%)	1/1
5. Mr. Wirat	Sukchai	Director Chairman of the Executive Committee Member of the Risk Management Committee Chief Executive Officer and Managing Director	6/6 (100%)		11/12 (92%)		4/4 (100%)	1/1
6. 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
7. Dr. Jain	Charnnarong	Director Member of the Executive Committee	5/6 (83%)		11/12 (92%)			1/1
8. Mrs. Sirima	Iamsakulrat	Director Member of the Nomination and Remuneration Committee	4/6 (67%)			4/4 (100%)		1/1
9. Mr. Parkphum	Wongpaitoon	Director	6/6 (100%)					1/1
10. Mrs. Valeeratn	Chuerboonchai	Director	6/6 (100%)					1/1
11. Mrs. Varinkan	Teraumranon	Member of the Executive Committee Member of the Risk Management Committee			12/12 (100%)		4/4 (100%)	1/1
12. Mr. Wisit	Wachiralappaicon	Member of the Executive Committee Member of the Risk Management Committee			12/12 (100%)		4/4 (100%)	1/1
13. Mr. Pracha	Phromphornchai	Member of the Risk Management Committee					4/4 (100%)	1/1
14. Mr. Rattanaphan	Mukhariwattananon	Member of the Risk Management Committee					3/4 (75%)	1/1
15. Mr. Suchat	Suwatnodom	Member of the Risk Management Committee					3/4 (75%)	1/1
16. Mr. Sukit	Litikorn	Member of the Risk Management Committee					3/4 (75%)	1/1
17. Mr. Withoon	Thamee	Member of the Risk Management Committee					3/4 (75%)	N/A
18. Mr. Pongsawat	Penglengpol	Member of the Risk Management Committee					2/4 (50%)	1/1

Note : N/A means not attend

¹⁾ Dr. Supot Tiarawut resigned from the position of Independent Director and , Chairman of the Risk Management Committee with effect from 1 January 2020.

3 Management

The Company's Management as 31 December, 2019 is composed of thirteen members as follows:

No.	Name		Position
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.	Mrs. Varinkan	Teraumranon	Chief Operating Officer
4.	Mr. Wisit	Wachiralappaitoon	Chief Financial Officer
5.	Mr. Pracha	Phromphornchai	Project Sales Director: Fire Protection System, Air-conditioning system and sanitary
6.	Mr. Rattanaphan	Mukhariwattananon	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. Sukit	Litikorn	Engineering Support Director: Refrigeration System
9.	Mr. Withoon	Thamee	Sales Director: Digital Printing System
10.	Mr. Pongsawat	Penglengpol	Sales Special Products Director

Note : Management is Company executives according to the Notification of the Securities and Exchange Commission

Role and Responsibility of the Chief Executive Officer

1. Leading the Policy articulation process as well as the business strategies: both short-term and long-term businesses.
2. To Control and monitoring the Company's overall operating results at strategic and policy level
3. To Support and facilitate the Audit committee to be able to effectively oversee the company.
4. Manage Personal Development Projects that support future growth.
5. Monitor, inspect, control and report overall operating results of the Company to the Board on a quarterly basis.
6. Perform any other duties as assigned by the Board and/or the Audit Committee.
7. Have power to authorize any other person to perform duties on his behalf, and be responsible for any act performed by the authorized person.

Role and Responsibility of the Managing Director

Managing Director shall have the power, duties and responsibilities in managing the business of the Company 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 matters concerning business operation and/or day-to-day administration of the Company to ensure the best interests of the Company and consistency with the objectives, regulations, rules, orders, resolutions of the Board meeting and annual general meeting of shareholders under applicable laws and the scope of power and responsibilities as assigned by the Board.
2. Work out policies, strategies, targets, business plan and annual budget plan, as well as management structure and delegation of authority within the organization for submission to the Executive Committee for endorsement before seeking approval from the Board.
3. Ensure that the operation or administration of the organization is in line with the approved policies, strategies, targets, business plan and budget plan.

4. Ensure personnel of all work units carry out efficient and effective operation, pursue ongoing organizational and personnel development, and maintain good image of the Company.
5. Have power to appoint, transfer, promote, suspend from work, terminate employment, determine salary or other compensation and gratuity, including determining wage/salary increment and bonus for employees. However, any matters concerning employees in the management level shall be subject to prior consent from the Executive Committee.
6. Have power to issue, amend, add, improve or revoke orders, rules, memorandum or regulations concerning work procedure to ensure compliance with the policy in the best interests of the Company, and maintain work discipline within the organization.
7. Have power to approve investments and expenses in the Company's business operation or any other relevant expenses within the limit set by the Board, comprising approval of acquisition of fixed assets without amount limit, approval of entering into engagement/rent/lease contract of fixed assets without amount limit, etc.
8. Have power to approve payments under contract or agreement as per the approved budget or as approved by the Board meeting or shareholders' meeting without amount limit.
9. Have power to approve procurement, executing contract, and conduct of normal business transactions within the approved budget and without amount limit.
10. Have power to authorize any other person to perform duties on his behalf, and be responsible for any act performed by the authorized person.
11. Perform other duties as assigned by the Executive Committee.
12. Can empower other employees to work instead. It is also responsible for the performance of the attorney at that time.

In this regard, the power the Chief Executive Officer / Managing Director and that of the person authorized by him as deemed appropriate shall exclude the power or granting of power which will permit the Chief Executive Officer / Managing Director or the authorized person to approve transactions which he or related person may have conflict of interest (as defined in the Notification of the Capital Market Supervisory Board and/or the Stock Exchange of Thailand and/or relevant agencies), beneficial interest or any other interest with the Company or subsidiaries and/or associated companies. The Chief Executive Officer / Managing Director shall have no power to approve such transactions which are subject to the consideration and approval by the Board meeting and/or the shareholders' meeting (as the case may be) in compliance with the Articles of Association of the Company or applicable laws, unless the approval of such transaction is in the normal course of business with the general trade conditions in line with the Notification of the Capital Market Supervisory Board and/or the Stock Exchange of Thailand and/or relevant agencies.

4 Company Secretary

The Board meeting resolved to approve the appointment of Mrs. Varinkan Teraumranon as the Company Secretary since 26 February 2016 in line with the requirements of the Securities and Exchange Act B.E. 2535 (1992) (and the amendments) and to perform duties and responsibilities as follows:

1. Oversee and give preliminary advice to the Board and the executives on the rules, regulations and laws of which the Board and the management must be aware.
2. Supervise the Board activities and be in charge of arranging the Board meeting and the shareholders' meeting keep record of minutes of the Board meeting and the shareholders' meeting, and coordinate with relevant parties to effect and follow up implementation in accordance with the resolutions of such meetings.
3. Prepare and safe keep important documents of the Company including:
 - 3.1 Board register
 - 3.2 Invitation notice to the Board meeting, minutes of the Board meeting and the Annual Reports of the Company
 - 3.3 Invitation notice to the shareholders' meeting and minutes of the shareholders' meeting
4. Safe keep reports on beneficial interests of directors and executives (referring to directors and executives who are duty-bound to report to the Company their beneficial interests and those of related persons).

5. Perform any other tasks and responsibilities prescribed by the Notification of the Capital Market Supervisory Board.

In the year 2019, the Company was not been operated by regulatory agencies, by Information disclosure under material events is the disclosure when there is an event essential to making investment decisions. This is to keep the securities trading in order, liquid, fair, and all investors are equally informed.

Brief history as follows:

Name:	Mrs. Varinkan Teraumranon
Education:	BBA (Accounting), Rajamangala Institute of Technology
Working Experience	<ul style="list-style-type: none"> • 2019 - Present Chief Operating Officer and Company Secretary
In the 5 Preceding Years:	<ul style="list-style-type: none"> • 2016 - 2019 Corporate Governance Director and Company Secretary • 2016 - 2017 Assistant Managing Director: Corporate Governance and Company Secretary • 2014 - 2016 Operation Support Director (General Management Group)
Training participation:	<p>Training program of Thai Institute of Directors Association (IOD) :</p> <ul style="list-style-type: none"> • Effective Minute Taking Plan (EMT), Class 36/2016 • Company Reporting Program (CRP), Class 16/2016 • Company Secretary Program (CSP), Class 72/2016 • How to Develop a Risk Management Plan (HRP), Class 8/2015 <p>Other courses :</p> <ul style="list-style-type: none"> • P01 : CSR for Corporate Sustainability • S01 : Strategic CSR Management • S02 : Supply Chain and Stakeholder Engagement • S03 : Corporate Social Initiatives for Sustainable Development • S04 : Sustainability Risk and Materiality Analysis • S05 : CSR Evaluation and Data Management • S06 : Sustainability Reporting • Organizational Success Assessment through KPI Course • 360° Marketing Communication Techniques Course • Finance for Non-finance Executive Course • Finance for the Boss Course

The Company has mapped out qualifications of Company Secretary as regards age, education, foreign language proficiency, communication skills, interpersonal skills, capability in coordinating with internal and external parties, and public relations and enhancement of the Company's good image among external parties. In the event 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).

5 The person taking the highest responsibility in finance and accounting (CFO) and the person supervising accounting

In order to provide quality financial reporting and supervision to be consistent with the guidelines of the SEC, the company has determined the person who is assigned to be the person taking the highest responsibility in finance and accounting (CFO) and those assigned to be directly responsible for supervising accounting (The person supervising accounting) as follows

5.1 The person taking the highest responsibility in finance and accounting (CFO) Brief history as follows:

Brief history as follows:

Name:	Mr. Wisit Wachiralappaitoon
Education:	<ul style="list-style-type: none"> • B.B.A. (Accounting), Ramkhamhaeng University • LL.B. (Bachelor of Laws Program) Ramkhamhaeng University • Master of Science (Accounting), Thammasat University

Working Experience	<ul style="list-style-type: none"> • 2019 - Present Chief Financial Officer, Harn Engineering Solutions Plc.
In the 5 Preceding Years:	<ul style="list-style-type: none"> • 2016 - 2019 Finance Director, Harn Engineering Solutions Plc. • 2012 - 2016 Chief Financial Officer, Hot Pot Plc.
Training participation of Account:	<ul style="list-style-type: none"> • Training for Continuing Professional Knowledge (CPD) for auditors and accountants According to the regulations of the Federation of Accounting Professions. • Update corporate income tax Prepare to be ready before submitting the Por Por Ngor Dor 50 of the year 2017 that must be submitted in the year 2018. • The story of fraud and wrong accounting standards of listed companies Class 1/61. • Addressing new revenue recognition criteria according to TFRS 15 for general business (In-House). • Include employee benefits and financial error correction for NPAEs. • The bookkeeper has complied with the law no. 8/2017. • Self-Study CPD Project 3/2517 (PACKAGE: A) • Financial statements. • Manage new revenue recognition criteria according to TFRS 15 for general business, class 2/60. • Issues that should be known in the new financial reporting standards and the new auditor report. • Self-study CPD Project, 4th/2016. • Draft of Financial Reporting Standards, Financial Instrument Group (TFRS 9, TFRS 7 and TAS 32). • Integrated Reporting Version 1. • XBRL The new dimension of financial reporting in the digital age version 1/58. • Using Excel to check account data files, version 2/58.

5.2 The person supervising accounting

Brief history as follows:

Name:	Miss Ananya Proyngoen
Education:	<ul style="list-style-type: none"> • B.B.A. (Accounting), Rajamangala Institute of Technology Chakrabongsa Bhuvanarth Campus • Master of Accountancy (M.Acc.), Chulalongkorn University
Working Experience	<ul style="list-style-type: none"> • 2016 - Present Account Manager, Harn Engineering Solutions Plc.
In the 5 Preceding Years:	<ul style="list-style-type: none"> • 2014 - 2015 Account Manager, I AM Consulting Co., Ltd. • 2013 - 2014 Accounting Supervisor, Yum Restaurants International

Registration as an accountant according to the announcement of the Department of Business Development - Yes -

Training participation of Account:	<ul style="list-style-type: none"> • Insight Financial Management: Enhance business potential through professional financial management, the Stock Exchange of Thailand. • Penetrating the issue of the new lease agreement (TFRS 16), the Stock Exchange of Thailand. • Impact of new financial reporting standards regarding revenue from contracts made with customers, the Stock Exchange of Thailand. • Prepare for changes in financial reporting standards regarding financial instruments generation 2, the Stock Exchange of Thailand. • Accounting practices for employee benefits According to Thai Accounting Standard No. 19 and its impact on business operations, Dharmaniti Training and Seminar Company Limited. • Internal control according to Trend 2018, Dharmaniti Training and Seminar Company Limited. • Delve into the problem of corporate income tax, Federation of Accounting Professions In the royal patronage. • Techniques for financial statement preparation and financial report analysis. • Caution in account closing, financial statement preparation and income tax filing, Federation of Accounting Professions In the royal patronage. • Accounting for financial instruments generation 1/60. • Overview of the Thai auditing standards, Federation of Accounting Professions In the royal patronage.
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- Filing financial statements of accountants with e-Filing system.
- Techniques for the preparation and submission of Form Bor. Bor. 1 in accordance with the announcement Por.Chor. Por. Ngor. 2/60, Federation of Accounting Professions In the royal patronage.
- Penetrating withholding tax issues, Dharmaniti Training and Seminar Company Limited
- Accounting for financial instruments, Federation of Accounting Professions In the royal patronage.
- Prepare for changes in financial reporting standards, EY Office Co., Ltd.
- Standard exemption and reduction of corporate income tax rate Benefits for SME entrepreneurs according to the Emergency Decree, Bangkok Revenue Office 10.
- 65 Key Points Income, expenses, correct practice according to accounting standards, Dharmaniti Training and Seminar Company Limited.

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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Continuously develop accounting knowledge (Refresh) 6 hours per year ²⁾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

²⁾ Refresher course that is consistent and beneficial to the company

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) year 2019

Year	Training Institute	Course / Activity Details	Number of CPD hours	
			Account	Other
2019	Department of Business Development Ministry of Commerce	Knowing collateral Know your business tax.	0	6
2019	Dharmaniti Training and Seminar Company Limited	Issues of 3 major changes in financial reporting standards TFRS 15, and the draft TFRS 9, TFRS16 which are effective in 2019 and 2020.	6	0
2019	Federation of Accounting Professions In the royal patronage	Summary of Asset Accounting Principles for NPAs Class 2/62	6	0
2019	Federation of Accounting Professions In the royal patronage	Self-Study CPD Project , Year 2, 2019 (Series 2)	20	0
2019	Dharmaniti Training and Seminar Company Limited	Prepare Financial Reporting Standard No.9 Financial Instruments (TFRS 9) and No.16 Leases (TFRS 16))	3:30	0
Total number of CPD hours			35:30	6:00

Number of CPD hours of the accounting supervisor for the year 2019

Year	Course / Activity Details	Number of CPD hours	
		Account	Other
2019	Accounting system system, document system and financial report	7	0
2019	Techniques and points to be careful For accountants in internal control and accounting systems improvements	6:30	0
2019	Self-Study CPD Project , Year 2, 2019 (Series 2)	20	0
2019	WORKSHOP, Deployment of TFRS 16, Lease Agreement	6	0
Total number of CPD hours		39:30	0:00

6 Remuneration for Directors and Executives

6.1 Monetary Remuneration

6.1.1 Directors

The 2019 Annual General Meeting of Shareholders held on April 25, 2019 resolved to approve payment of monthly remuneration for the Company's Directors and Board-Committees and meeting allowance Which is reflected from the performance of the company as follows as below:

Position	Monthly remuneration / meeting allowance
1. Monthly remuneration : Director / Audit Committee / Risk Management Committee / Nomination and Remuneration Committee	
• Chairman of the Board	30,000 Baht/Month
• Board-Committees	25,000 Baht/Month
• Directors / Independent Director	20,000 Baht/Month
• Directors (3 working day/week)	120,000 Baht/Month
2. Meeting allowances : Director / Audit Committee / Risk Management Committee / Nomination and Remuneration Committee	
• Chairman	15,000 Baht/meeting
• Directors	10,000 Baht/meeting
3. Bonuses for directors of the Board	- None -
4. 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.

In summary, the 2019 remuneration of 10 Directors for a period of 12 months ending as of December 31, 2019, totals THB 3,955,000 This comprises monthly remuneration for the Company Directors of THB 2,490,000, monthly remuneration for Board-Committees of THB 580,000, and meeting fee of THB 885,000, the resolution of which was passed by the 2019 AGM on April 25, 2019. The remuneration is considered through the comparison with organizations with equal size in the same industry, as well as he Company performance, achievement, responsibilities of the Board of Directors, and overall business circumstances.

In 2019 and 2018, the company payment of monthly remuneration for the Company's Directors and Board-Committees and meeting allowance as follows as below:

Name	Position	2019						2018					
		Monthly Remuneration	Meeting Fee					Monthly Remuneration	Meeting Fee				
			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, Chairman of the Audit Committee,	360,000	90,000	60,000	-	-	-	360,000	90,000	60,000	-	-	-
2. Dr. Sothitorn Mallikamas	Independent Director, Member of the Audit Committee, Member of the Nomination and Remuneration Committee	240,000	60,000	40,000	30,000	-	-	240,000	60,000	40,000	-	-	-
3. Miss VoranuchSupaibulpipat	Independent Director, Member of the Audit Committee, Chairperson of the Nomination and Remuneration Committee	280,000	60,000	40,000	45,000	-	-	240,000	60,000	40,000	-	-	-
4. Dr. Supot Tiarawat	Independent Director, Chairman of the Risk Management committee	300,000	40,000	-	-	120,000	60,000	300,000	50,000	-	-	-	180,000
5. Mr. Wirat Sukchai	Director, Chief Executive Officer	-	-	-	-	-	-	-	-	-	-	-	-
6. Mr. Thammanoon Tripetchr	Director, Managing Director	-	-	-	-	-	-	-	-	-	-	-	-
7. Dr. Jain Chamnarong	Director	1,170,000	50,000	-	-	-	-	1,200,000	50,000	-	-	-	-
8. Mrs. Sirima Iamsakulrat	Director	240,000	40,000	-	30,000	-	-	340,000	50,000	-	-	-	-
9. Mr. Parkphum Wongpailoon	Director	240,000	60,000	-	-	-	-	240,000	60,000	-	-	-	-
10. Mrs. Valeeratn Chuerboonchai	Director	240,000	60,000	-	-	-	-	260,000	50,000	-	-	-	-
Total		3,070,000	460,000	140,000	105,000	120,000	60,000	3,180,000	470,000	140,000	-	-	180,000

6.1.2 Company's Executives

In 2019, the company payment of remuneration for Mr. Wirat Sukchaim, Chief Executive Officer and Mr. Thammanoon Tripetchr, Managing Director of the Company's executives as follows as below:

Remuneration	2019		2018	
	No. of executives	No. of executives	No. of executives	No. of executives
Salary, bonus and other benefits such as Incentive, social security fund, provident fund, EJP and post-employment benefits	2	10,526,329	3	12,485,725

6.1.3 Other Remuneration

- Other remuneration of board directors - None -
- Other management remuneration - is shown in Table 6.1.2 above.

7

Manpower

7.1 Number of Personnel

As of December 31, 2019 and December 31, 2018, the Company has employees (excluding executives) of 252 person (159 male, 93 female) and 247 person (152 male, 95 female) respectively, categorized by function line as follows:

Operational Line	Number of Employees (persons)	
	As of December 31, 2019	As of December 31, 2018
Project Sales Group	35	35
Fire Protection, Air Conditioning & Sanitary System Sales Group	28	26
Project Sales Group (Petrochemical)	7	7
Refrigeration System Sales Group	14	16
Engineering Support Group	8	5
Digital Printing System Sales Group	27	25
Service Group	32	34
Special Product Sales Group	16	12
Chief Operating Officer	51	52
Chief Financial Officer	34	35
Total	252	247

7.2 Employee Compensation

The Company's employees will receive remuneration in both monetary and non-monetary forms. Monetary remuneration includes salary, bonus, overtime pay, brokerage fee, incentives and rewards, as well as other monetary benefits. Non-monetary compensation includes 1) provident fund in 2019 the Company contributed to the fund 3.82 million baht managed by an authorized asset management company 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. The Company 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. 2) Annual staff health check, Group life and health insurance is taken out by the Company to insure the employees, with coverage amount varied to job position and level of risk associated with nature of job performance. Moreover. 3) the Employee Joint Investment Program (EJIP). The period of May 1, 2015 to April 30, 2020, with a total duration of 5 years for employees and director on the voluntary basis and own the Company, which will be regarded as savings for the employees' long-term financial security. The Company 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

In 2019 and 2018, the company payment of remuneration for the Company's employees as follows as below:

Remuneration	2019		2018	
	No. of employees	Remuneration (Million Baht)	No. of employees	Remuneration (Million Baht)
Salary, bonus and other benefits such as Incentive, social security fund, provident fund, EJIP and post-employment benefits	252	12,485,725 170.26	247	171.83

7.3 Major Labor Dispute in the Past 3 Years

- None -

14 Corporate Governance

1 Corporate Governance Policy

HARN has a determination to be an engineering leader in Fire Protection System and Safety, Refrigeration System, and Digital Printing System. To create good business profits, the company 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 set Corporate Governance Policy and has been practicing since 2013. It is published through the company website, www.harn.co.th, and assigned for review annually. On March 28, 2019, the Board of Directors reviewed the company's policies and principles and set up its clear guidelines on overseeing its subsidiary companies, affiliated companies, human resource management, technological development, and investor relations communication with stakeholders and interested parties. The policies and principles that had been reviewed by the Board were announced and became effective on April 1, 2019.



Corporate Governance Policy that adheres to as an operating framework

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) guidelines of understanding, trust and faith where habitually practice as a corporate culture. which are;

- **Responsibility**
Be responsible and perform the duty with the best of the abilities, efficiency and with determination.
- **Equitable Treatment**
Treat all groups of stakeholders equally and fairly.
- **Accountability**
Take responsible of one's decision, action and others under one's responsibility. Be able to explain such decisions.
- **Creation of Long Term Value**
Have a vision to create a long term value for the Organization.

- Transparency

Operate the businesses transparently, accountable and reveal the information to related parties transparently as guidelines with understanding, confidence and faith by practicing routinely, resulting in a good culture of the Organization.

- 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 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.

The Committee set policies, principles and followed up on practice of good corporate governance in 2019 as summarize as follow:

1, 2

Establish Clear Leadership Role and Responsibilities of the Board and Define Objectives that Promote Sustainable Value Creation

- 1.1 To create promise that the Board is realized and aware of roles and responsibility as a leader of the organization in March 28, 2019. The Board, therefore, set reviewing timeline of policies and missions that used to administer according to good corporate governance and indicated March as a month for meeting for reviews of policies and principles of corporate governance, business ethics, other administrative policies at policy level and management level. In October 2, 2019 the Board set another meeting to review vision, mission, strategies, goals, and direction of business for the next year, at least once a year.
- 1.2 The Board set framework of management according to strategies for the Board of Directors to review 12 times in 2019 and reported progress to the Board quarterly. The Board of Directors presented KPI at organization level and operational to ensure that direction of operating business is competitive sustainably. Moreover, to ensure that business is operated under code of conduct and be aware of stakeholders including able to accept changes which are inevitable.
- 1.3 The Board of Directors ensures that strategies were practiced where the Executive Committees will review business performance monthly and report to the Board of Directors as quarterly. For broadcasting objectives and goals of the business into operational level, management of each department is responsible for this task. It ranges from business level to division, section and to employees through official and unofficial meetings via mandated channels. The purposes and goals complying with and supporting the main goals set by the Board will be implemented, reviewed, and monitored systematically and continually.
- 1.4 Administrative of the Board, Management, and all employees are to follow the law, rules, and policies which delegated to relevant management to review the laws and keep up to changes. This was set as risk in policies, relevant laws and set KPI COR-07 Low Compliance as an index to determine performance of management and other relevant members.

- 1.5 To motivate the Board, Management and all employees to aware of their roles and responsibilities given by the Company. In 2019, The Board reviewed charter in March 28, 2019 and distributed to all Boards as an operating manual as well as approved "Approval Guidelines for Management" in November 13, 2019 to discriminate approval authorities, responsibilities for flexibility of workflow in the company. The separation of tasks of the Board, the Chairman of the Board, and Administrative Section was clearly mentioned (see detail in 13. Management Structure : the Board of Director on pages 45-47, the Executive Committee on pages 51-52 and the Executive on pages 57-58)

3

Strengthen Board Effectiveness

- 3.1 The Board of Directors, as a representative of the shareholders, are aware of benefits the diversity of the board of directors And sees it as an important factor in increasing the efficiency of decision making and the work of the Board of Directors, the Board must be knowledgeable, expert, and experienced that would benefit the company. The Board must dedicate to the given tasks, be a leader, have vision, and free to make decision, able to take care system and verify that all operations of the business will take place as usual according to the law, ethics, and has no obligation to administrative of the company. Separation of responsibilities between Executive and The Board must be clear.

- (1) Composed of members with diverse skills, experience and expertise in specialized areas that are beneficial to the Company. The Board shall have at least 1 non-executive director with experience in engineering product trading business, which is the Company's core business, and at least 1 non-executive director with accounting and finance experience. The Board of Directors at current, comprise of several dimensions in terms of gender, age, education background, experience. The company has already reviewed Board Skill Matrix and term of office as The Board of Directors individually every year and can be summarized as follow:

Skill and expertise of Board of Directors			
General knowledge of business	6 People	Technology	4 People
Accounting	4 People	Risk Management	8 People
Finance	5 People	Human Resources	3 People
Laws	3 People	Strategic Management	4 People
Marketing	2 People	Social Responsibility and Sustainable Development	6 People

- (2) At present (as at December 31, 2019), the Company's Board of Directors is composed of 10 members, of whom 8 are non-executive directors and committees that are management 2 persons which are Chairman of Board of Director 1 position, Managing Directors 1 positions, and has numbers of committees that are not Independent Committees in a fair ratio of investment of Controlling Shareholders.
- (3) Have 4 independent directors out of a total of 10 directors, which accounts for more than one-third (1/3) of the total number of directors. All the independent directors may independently give opinions regarding the performance of the management, hence proper checks and balances in the voting on various matters, and review the operational performance of the management for the optimum benefits of the Company. These 3 independent directors are also Audit Committee members. The number of independent directors and Audit Committee members are in compliance with the requirement of the Office of Securities and Exchange Commission that at least one-third (1/3) of the total number of directors shall be independent directors and 3 of the total number of directors shall sit on Audit Committee. In addition, all independent directors and Audit Committee members shall have the qualifications as prescribed by the Notification of the Capital Market Supervisory Board.
- (4) Pursuant to the Company's articles of association, at each annual general meeting of shareholders, at least one-third (1/3) of the directors shall vacate their office. If the number of directors cannot be divided into 3(three), the number nearest to one-third (1/3) shall retire. The directors to vacate office in the first and second years following the registration of the Company shall be drawn by lots. In the subsequent years, those longest-serving shall vacate office. Directors who retire by such rotation may be re-elected, without limiting the number of times.

the registration of the Company shall be drawn by lots. In the subsequent years, those longest-serving shall vacate office. Directors who retire by such rotation may be re-elected, without limiting the number of times.

- (5) Term of office of the Independent Committee is not more than 9 consecutive years counting from the date of appointment or 3 consecutive term of office with no exceptions. Currently, 3 Independent Committees have term of office of 6 years and another person has term of office of 4 years.

3.2 Selecting suitable candidate as The Chairman of Board of Directors

- (1) Currently, Dr.Thakol Nunthirapakorn, a member of Independent Committee is The Chairman of Board of Directors and 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.
- (2) The company has separated responsibilities between the Board of Directors and Management clearly where the Board decides policies and corporate governance of the management at policy levels while the management takes care of other operations of the organization according to the policies. The Chairman of the Board does not involve in current day to day activities but support and give advice to administrative of management through the Board regularly. The Chief Executive Officer and Managing Directors responsible for managing the company under the given authorities by the Board.
- (3) Roles and Responsibilities of the Chairman of the Board as a leader of the Board of Directors are as follow:
 - Calls for the Board meeting according to the policies. 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.
 - Supports and gives opportunities to all committees or shareholders to be a part of the meeting and supports the committee to be discrete on comments independently.
 - Supports and promotes the Board to serve at full capabilities but under authorities and responsibilities with good corporate governance.
 - Directs and follows up administrative works of the Board effectively and focuses to achieve main objectives and goals of the company.
 - To look after management of the Board of Directors' and Sub-committees' effectively and to achieve set objectives.
- (4) The Board of Directors' appoint Sub-committees' to review specific concerns and review information then present considerations before ask for approval from the Board where set roles and responsibilities in clear and disclose the number of times each director has attended all the meetings during the past year (see detail in 13. Management structure pages 48-56), the Board of Directors has prepared a report of the Board of Directors' responsibility for financial reports and every Sub-committees' has produced a report of their performance and disclosed in the Annual Report (see detail in 19-23. Report of the Committee page 128-136)

3.3 Recruitment and Selection of the Committees

- (1) The Nomination and Remuneration Committee selects suitable persons and appoints as the Board of the company by submitting qualified names, experience, capabilities and considers the best and skillful person for the company. Consider from Thai Institutes of Directors or other organizations that presents relevant information or other sources approved by the company.

However, if the company Have a new business strategy other than the existing business The selection of directors is necessary to recruit people with qualifications and experience to match the new business that the company Will proceed To propose to the board of directors And / or the shareholders' meeting to approve As the case may be, which is considered as the process of appointing the Company's directors.

- (2) Allowing minority shareholders to propose qualified names according to the law of Securities and The Stock Exchange as per qualifications set by the company in order to be a candidate of the Board, by announcing invitations on the company's website at least 90 days in advance of the shareholders' meeting in 2019, the company announced from October 1, 2019 to December 31, 2019, including news on the website of the SET To allow shareholders to propose names and personal profiles to the company The company set ratio of minimum shares to be qualified prior to the announcement and must have a minimum of 5% voting shares of the company. However, in the year 2019 there was no nominating any person to be appointed as a director and there was no shareholder proposing any meeting agenda at the specific timeline, the Secretary then reported to the Board of Directors.
- (3) In recruiting, education background and experience of that person must be sufficient and aid decision of the Board.
- (4) Nomination and Remuneration Committee will review qualifications and method of recruiting to the board prior to the end of term of office. If the Nomination and Remuneration Committee submit the same Board as a candidate, performance of that individual must be reviewed once again.
- (5) Nomination and Remuneration Committee presents names for approval from the Board in order to consider appropriateness of the candidates as the Board and Independent Director including selection and appointment of the Board according to procedures of the company to the Annual General Meeting for consideration and later appointment, and provide orientation Along with providing documents that are beneficial to the performance of duties to the newly appointed director. However, in the year 2019, no new directors have been selected.
- (6) In 2019, no appointment of the adviser to the Nomination and Remuneration Committee
- (7) The shareholders' meeting shall elect the directors in accordance with the following criteria and procedure:
 - Each shareholder shall have one (1) vote for each share held, the majority votes of the shareholders who attend the meeting and have the right to vote.
 - Each shareholder 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.
 - The candidates shall be ranked in order descending from the highest number of votes received to the lowest, and shall be appointed as directors in that order until the required number of directors to be elected is met. Where the votes cast for candidates in descending order are tied, the chairman of the meeting shall have a casting vote.
- (8) The Board of Directors' meeting or the shareholders' meeting (as the case may be) is empowered to appoint independent directors to sit on the Board. The Company has a policy to appoint independent directors in the number of at least 1/3 (one-third) of the total number of directors of the Board, or at least 3 Independent Directors. At present, it has a total of 4 independent directors.
- (9) The criteria for selecting and nominating independent directors are based on those for the nomination of directors. 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, and the securities and exchange law, as well as other relevant notifications, stipulations and/or regulations. He shall have capabilities, specialized expertise, work experience and other required qualifications. Nominations of qualified candidates shall be submitted to the shareholders' meeting for election and appointment as directors. In case of any independent director vacating office before the end of the office term, the Board of Directors may appoint a new independent director with the required qualifications as a replacement. The replacing independent director shall hold office only for the remaining term of office of the independent director whom he has replaced.

(10) Qualifications of an independent director, according to the definition of an independent director shall be as follows:

- Holding not more than 1% of the total shares with voting rights of the Company, or its principal company, subsidiary company, associated company, major shareholder, or controlling person of the Company, which shall be inclusive of the shares held by any related person thereof;
- 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 the Company, or its subsidiary company, associated company, subsidiary company at the same level, major shareholder or controlling person of the Company unless the foregoing status has ended for no less than 2 years before the independent director assumes the post of Audit Committee member;
- Not being a person related by blood or registration under law, such as father, mother, spouse, sibling, or child, including the spouse of a child, of an executive, major shareholder, controlling person or person to be nominated as an executive or a controlling person of the Company or its subsidiary company;
- Neither holding nor having held a business relationship with the Company, or its principal company, subsidiary company, associated company, major shareholder or controlling person 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 the Company, or its principal company, subsidiary company, associated company, major shareholder or controlling person unless the foregoing relationship has ended for no less than 2 years before the independent director is appointed as an Audit Committee member;
- Neither being nor having been an auditor of the Company, or its principal company, subsidiary company, associated company, major shareholder or controlling person; and not being a substantial shareholder, controlling person or partner of an audit firm which employs auditors of the Company, principal company, subsidiary company, associated company, major shareholder or controlling person unless the foregoing relationship has ended for no less than 2 years before the independent director is appointed as an Audit Committee member;
- 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 the Company, or its principal company, subsidiary company, associated company, major shareholder or controlling person; 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 before the independent director is appointed as Audit Committee member;
- Not being a director who has been appointed as a representative of a director of the Company, major shareholder, or shareholder related to the major shareholder of the Company;
- Not undertaking any business the nature of which is the same as that of the Company or subsidiary company and which, in any material respect, is competitive with the business of the Company 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 the Company or subsidiary company;
- Not having any characteristics that prohibit the expression of independent opinion towards the Company's business undertakings.
- In this regard, the independent directors shall examine and certify their qualifications and independence at least once a year by presenting together with profile of directors as of year-end for preparation of the Annual Disclosure Statement (Form 56-1) and Annual Report.

3.4 Review of structure and compensation rate of the Board of Directors

- (1) Compensation of the Board is relevant to duties, obligations, experience, accountability and responsibility of individual Board including interests that may receive from individual.
- (2) The Board clearly considers and review policies and rules to compensate the Board, then submit for approval to the Annual General Meeting in each year. The authority to set specific numbers or to deploy as rules will be determined from time to time or may enforce until further notice. The consideration is based on rules of transparency, detectability in the appropriate level, comparable to operating level of the industry, business size and sufficient to motivate the Board to retain the position with quality. Moreover, the company adds more responsibilities to the given Board and appointed as Sub-committees' such as Audit Committee, Risk Management Committee, Executive Committee, for example.
- (3) Compensation of the Committees must not affect employees' benefits where the Committees are one of the employees as well.
- (4) Compensation must not conflict with position of the Independent Committee according to the law of Securities and The Stock Exchange.

3.5 Accountability and Responsibility of the Committees to comply with duties and time management

- (1) The Board set numbers of companies that each Committee able to take which does not exceed 5 registered companies while respect effectiveness of the management and good corporate governance to ensure that the Board dedicate sufficient time for the operation. In 2019, each Board is in position for other register companies as follow:

Board of Directors	Number of other listed companies in which the directors hold positions
Dr. Sothitorn Mallikamas	- none -
Miss Voranuch Supaibulpipat	- none -
Mr. Wirat Sukchai	- none -
Mr. Thammanoon Tripetchr	- none -
Dr. Jain Charnnarong	- none -
Mrs. Sirima Iamsakulrat	- none -
Mr. Parkphum Wongpaitoon	- none -
Mrs. Valeeratn Chuerboonchai	1 Company
Dr. Thakol Nunthirapakorn	2 Company
Dr. Supot Tiarawut	2 Company

Note :

Dr. Supot Tiarawut has resigned from the Board of Director effective from January 1, 2020

(Illustrates in Attachment 1 History of the Board of Directors and Executives Company Secretary of 56-1 Form)

- (2) The Board of Directors 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 the company unless reported to the General Meeting prior to the appointment.
- (3) The Boards 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 the company and must not use the position to refer nor to ask for other benefits of other entities. At present, HARN is in the process of establishing a subsidiary to support the expansion of the AEC market in Asia and increase the efficiency of current customer service in the production base in Ho Chi Minh Vietnam.

3.6 Determine framework and mechanism for corporate governance of the subsidiaries, joint venture, or important investment

- (1) Determine policies to govern subsidiaries and joint ventures by setting responsibilities of company's representatives Internal control system of the subsidiaries and joint ventures appropriately and concisely to create reports according to the law and relevant regulations and publish financial statement and business results of transactions with relevant parties, acquire or sell assets, other major transactions such as increase of capital, reduce of capital, dissolution of the subsidiaries and joint ventures, for example.
- (2) 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, track business operation to use for financial statement of the company according to the standards and timeline. In 2019, The Company registered the establishment of a subsidiary "HARN Vietnam Co., Ltd." on July 30, 2019 in order to support the expansion of the market to AEC countries and increase customer service efficiency Currently, the production base is locate in Ho Chi Minh City, Vietnam.

3.7 Evaluate performance of the Board of Directors' and sub-Committees

- (1) The Board of Director and Sub-committees' regularly conduct self-assessment on operating performance at least once a year in order for the committee to jointly consider the work and problems for further improvement as follow:
 - Self-Assessment of the whole Board, divided into 4 main evaluation topics
 - Individual Self-Assessment, divided into 3 main evaluation topics
- (2) Process, criteria and results of the evaluation of the committee in group and individual style. Summary of the overall overview for the year 2019 as follows:
 - Process of Self- Assessment of the whole Board and Individual.

Process of Self Evaluation

1	2	3	4
Board of Directors approve and review the evaluation form for accuracy and completeness in accordance to the regulations set by the supervisory authorities.	Executives do self-evaluations, as team and individuals to express the opinions about the roles and duties of committee. The freedom, managerial structure, knowledge development and comments on corporate management.	The summary and performance evaluation of the board of directors are summarised by the Secretary of the company and reported to the Board of Directors	The Secretary of the company analyzed the results and additional comments from the board of directors to make a plan to improve and develop.

- Results of Self- Assessment of the whole Board and Individual.

2019 - Evaluation results

Criteria of Self- Assessment of the whole board		Board of Director	Audit Committee	Executive Committee	Risk management Committee	Nomination & Remuneration Committee
1	The structure and qualifications of the board	86%	94%	69%	79%	88%
	<ul style="list-style-type: none"> • The structure and qualifications of the Board of Directors shall be diverse in terms of the directorship and qualifications of each supporting Committee • proportion of the directors 					
2	The roles, duties and responsibilities of board of directors	82%	96%	76%	77%	58%
	<ul style="list-style-type: none"> • Spending adequate time to consider important matters etc. Business's direction, Strategy, Action plan, transactions with conflict of interest, and internal control and risk management systems. 					
3	Board Meetings	90%	96%	74%	77%	85%
	<ul style="list-style-type: none"> • Setting up the dates of the meeting one year ahead • The quality of the documents, the sufficiency of the information for the Directors to make a decision. • Freedom of decision making and the expression of opinions of the directors • Time frame of the meeting 					
4	Others	80%	-	-	-	-
	<ul style="list-style-type: none"> • Relationship with the board and management team • Self development of the board/Executive, Training 					
Results		84%	96%	73%	78%	77%

Measurement 90% up Excellent, 80-89% Good, 70-79% Relatively Good, 60-69% Fair, Below 60% Need improve

2019 - Evaluation results

Criteria of Self- Assessment of the individual board		Board of Director	Audit Committee	Executive Committee	Risk management Committee	Nomination & Remuneration Committee
1	The structure and qualifications of the board	85%	83%	78%	80%	71%
	<ul style="list-style-type: none"> • Qualifications Knowledge experience suitable for the business of the company • Assigned duties that are appropriate for the role (Independent / Sub Committee) 					
2	The roles, duties and responsibilities of board of directors	82%	90%	72%	78%	77%
	<ul style="list-style-type: none"> • Perform duties efficiently according to the charter law • Time and dedication to perform duties • Control and follow up the operations of the management appropriately • Does not interfere with the management function • Develop and learn all the time 					
3	Board Meetings	87%	92%	69%	77%	79%
	<ul style="list-style-type: none"> • Attending the meeting • Showing appropriate comments that are beneficial to the meeting • Studying the information about the meeting in advance • Abstain from attending the meeting or voting in case of having conflict of interests 					
Results		85%	88%	73%	78%	76%

Measurement 90% up Excellent, 80-89% Good, 70-79% Relatively Good, 60-69% Fair, Below 60% Need improve

(3) The self-assessment results of the committee will be used in consideration of the suitability of the board composition.

(4) The board has no outsource consultant to assist in directing and propose the assessment of the Boards performance

3.8 Individual Board of Directors is knowledgeable and understands duties, characters of the business and the law of business and was strengthen skills and necessary knowledge to be the Board of Directors regularly.

(1) In every new appointment of the Board of Directors, administration department will create related document and information to the new Committees such as

- History and characteristics of the business
- Business Structure, Company Structure, Main Shareholders and The Committees
- Responsibilities and accountabilities of the Board according to the relevant laws

- Any relevant information concerned the enforced laws
- Memorandum and company's policies
- Duties and responsibilities of the Board of Directors' and the Sub-committees'
- Nomination and Remuneration of the Board
- Meeting of the Boards
- Good Corporate Governance and Business Conduct

Including arrangement of business characteristics and directions of operation of the company along with to arrange meetings with The Chairman of the Board of Directors and Chief Executive Officer to the new Boards.

In 2019, the company did not appoint new Committees but informed the Committees to be aware of the current environment. The company reviewed policies and rules together with corporate governance policy, anti-corruption manuals that the Boards should know and served as the Board of Directors.

- (2) The Committees are fully understand 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 e-mail and Board Meetings.
- (3) The Boards of the company support and accommodate training and provide knowledge to relevant parties in corporate governance structure such as Committees and Audit Committees so that improvement can be made regularly. In 2019, the following trainings were arranged for the Committees and high-level Management.

1) Board of Directors	Course
1. Dr. Thakol Nunthirapakorn	<ul style="list-style-type: none"> • Thailand's 10th National Conference on Collective Action against Corruption Invitation • Audit Committee Forum: Strategic Audit Committee: Beyond Figure and Compliance • SET Social Impact Day 2019 • DCP Series: 3/2019 :Harnessing Opportunities from Digital Disruption • Towards sustainable finance and investment in Thailand • Internal Audit's Challenge in Value Adding
2. Dr. Sothitorn Mallikamas	<ul style="list-style-type: none"> • Board Nomination & Compensation Program (BNCP) 8/2019 • Director Certification Program (DCP) 278/2019 • Internal Audit's Challenge in Value Adding
3. Miss Voranuch Supaibulpipat	<ul style="list-style-type: none"> • Board Nomination & Compensation Program (BNCP) 8/2019 • Director Certification Program (DCP) 281/2019
4. Dr. Supot Tiarawut	<ul style="list-style-type: none"> • IT Governance & Cyber Resilience Program (ITG) 11/2019
5. Mr. Wirat Sukchai	<ul style="list-style-type: none"> • Executive Education Program (CMA-GMS 2019) (Capital Market Academy) • Compensation Strategy
6. Mr. Thammanoon Tripetchr	<ul style="list-style-type: none"> • Chief Transformation Officer (CTO)
7. Dr. Jain Charnnarong	<ul style="list-style-type: none"> • None
8. Mrs. Sirima Iamsakulrat	<ul style="list-style-type: none"> • Compensation Strategy
9. Mr. Parkphum Wongpaitoon	<ul style="list-style-type: none"> • None
10. Mrs. Valeeratn Chuerboonchai	<ul style="list-style-type: none"> • None

2) Management	Course
1. Mr. Wisit Wachiralappaicon	<ul style="list-style-type: none"> • Preparation for Thai Financial Reporting Standard number 9 and 16 • Comprehensively focused course on principles, impacts, guidelines and case study of TFRS9, TFRS 15 and TFRS 16 • 3 Financial Reporting Standards; TFRS 15 Contract with Customers, TFRS 9 Financial Instrument and draft of TFRS 16 Leases+N26 • Knowledge of Business collateral and Business Taxation
2. Mrs. Varinkan Teraumranon	<ul style="list-style-type: none"> • Leadership Development
3. Mr.Pracha Phromphornchai	<ul style="list-style-type: none"> • Leadership Development
4. Mr.Rattanaphan Mukhariwattananon	<ul style="list-style-type: none"> • Leadership Development
5. Mr.Suchat Suwatnodom	<ul style="list-style-type: none"> • Leadership Development
7. Mr.Sukit Litikorn	<ul style="list-style-type: none"> • Leadership Development
8. Mr. Withoon Thamee	<ul style="list-style-type: none"> • Leadership Development
9. Mr. Pongsawat Penglengpol	<ul style="list-style-type: none"> • Leadership Development

3.9 The Boards will ensure that operations of the Boards run smooth and able to access information as necessary. The Secretary of the company is appointed who is skillful and experience for the tasks of the Boards.

Board of Directors Meeting Sub-committees'

- (1) The Boards of Directors' and Sub-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 Meetings will take place. The Executive Committees whom delegated given tasks by the Board of Directors would attend and in every Executive Committees Meeting, the Executive Committees will report the approved topics to the Board of Directors. This is arranged to control and look after operation of Administrative consecutively and at current. However, in the year 2019, there were 6 meetings of the Board of Directors (see detail of attendance of each meeting are in Item 13. Management Structure "Attendance of the board meeting" page 56)
- (2) The Board Chairman and the Managing Director jointly determine and approve issues to be put on the agenda. Other Board members are also allowed to freely propose issues that they think are beneficial to the Company to be included in the agenda. It is the responsibility of all the directors to consistently attend the Board meeting at least 80% of the total number of meetings held in each year. In 2019, the Board of Directors attended the meeting an average of 92%.
- (3) The Company Secretary is in charge of sending the meeting notice together with the meeting agenda and meeting documents to all directors at least 5 business days before the meeting date, so that they will have enough time to study the agenda items, unless in urgent case to protect the interests of the Company, the meeting notice may be sent by other means and the meeting may be scheduled earlier.

The Company Secretary has the duty to attend the Board meeting and prepare the minutes, which will be submitted to the Board Chairman for consideration and signing in certification. The Board Secretary will then present the minutes to the next Board meeting for adoption. The Company Secretary also has the duty to keep meeting information and documents on the 4th floor of the head office, Rama 9 Road for ease of reference.

- (4) The Board Chairman shall be chairman of the meeting to proceed with the meeting and allocate sufficient time for each agenda item. All directors are allowed to independently discuss and express their opinions on key issues with the best interests of the shareholders and other stakeholders taken into consideration on a fair basis.

In the meeting, there must be at least half of the total Committees. Therefore, the meeting is considered as quorum.

Resolutions of the meeting shall be passed by majority votes. Each director shall have 1 vote, but the director who has interests in any matter shall not be entitled to attend the meeting and/or vote on such matter. In case of a tie of votes, the chairman of the meeting shall have a casting vote. While the vote is taking place by the Committees, there must be at least two-third (2/3) of the total Committees.

All directors have the right of access to meeting documents and other necessary documents. If the independent directors or members of the Audit Committee have any queries, other directors and the management shall put in efforts in responding to such queries as promptly and completely as possible.

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) The Board of Directors encourages senior executives or executives concerned to attend the Board meeting as deem necessary and appropriate, to provide the meeting with additional beneficial information and details in the capacity of concerned parties, and to directly acknowledge the relevant policies from the Board for efficient implementation thereafter, as well as to support the Board's decision making and allow the Board members to be acquainted with the executives which will facilitate their consideration of the Company's succession plan afterward.
- (6) The Board of Directors can access additional necessary information from the Managing Director, the Company Secretary, or other executives assigned within the scope of designated policy. In case necessary, the Board may seek independent advice from external advisers or professionals, the expenses for which shall be borne by the Company.
- (7) The Board designates non-executive directors to have meetings among them as deemed appropriate without the attendance by executive directors or management to discuss problems in relation to the Company's business and other matters of interest. The resolutions of the meetings are notified to the Managing Director, the Chairman of the Executive Committee, and the Board of Directors. Such meetings are chaired by the Board Chairman. If the Board Chairman cannot attend the meeting, a director shall be elected to chair the meeting while the Company Secretary shall serve as secretary to the meeting.

Appointment of the Secretary of the company

- (1) The Board of Directors appoint a Secretary whom is qualified and experienced in secretarial. Main duties and responsibilities are according to the Securities law and The Stock Exchange. The Secretary needs to give lawful advices and advices on enforcements while the Committees must be acknowledged and comply to the overall activities of the board including coordinate enforcement as per resolution of the Boards. The qualification and experience of the Company Secretary see detail in 13.Management Structure, Pages 58-59 and on the company's website at www.harn.co.th.
- (2) The Boards of Directors support and encourage the Company Secretary to be trained and developed skills continuously in laws, accounting or other secretarial related activities.

4

Ensure Effective CEO and People Management

4.1 Recruitment and development of high-level management which refers to Chief Executive Officer and Board of Directors to be knowledgeable, skillful, experienced to command and perform duties to drive the organization towards goals.

- (1) The company chooses personnel that are knowledgeable, experienced, and skillful for the business as the Chief Executive Officer, the Board of Directors by following rules of resource management and receive approval from the Board of Directors.
- (2) The Nomination and Remuneration Committee will report to the Committees regularly on development and successor plan in order to prepare talents as successors in case the Chief Executive Officer, the Board of Directors, and high-level of management retire, resign, or unable to retain in duties.
- (3) The Boards has no policy to scrutinize and nominate the Committees to other operations. In case that the management prefer to accept a position as the Board of other companies, approval must be granted by the Board of Directors in exception to a position in non-profit organizations. In this regard, the position must not conflict with the laws and enforcements that relate to the operation of the company and must not use the position as the Board to refer or support other entities.

4.2 Structure of appropriate Nomination and Remuneration

- (1) Nomination and Remuneration Committee sets structure of remuneration and appropriate measurements, then presents to the Boards according to the policy and principles given by the Committees.

Remuneration is varied according to the position such as salary, employee benefits e.g. Officer vehicle, returns that create long-term benefits e.g. LTF, EJIP, insurance plans. Management that received higher responsibilities will consequently receive higher remuneration as seen appropriate to the duties.

Remuneration by performance such as bonus which is determined by KPI set annually by financial operation, results of performance that met long-term business strategies.

- (2) Committees that are non-management evaluate the Chairman of the Board of Director and Managing Directors yearly. The Board of Directors preliminary evaluates performance and the Chairman of the Committees announces the results to the Chairman on of the Boards of Directors and Managing Directors.
- (3) The evaluation is used to determine remuneration of the Chief Executive Officer and Managing Directors by comparing remuneration to the labor market which is competitive enough in the same industry in order to maintain quality management while taking the company and shareholders interest into consideration as well.

4.3 The Boards understand structure of investor relations that may affect to the administrative and to operate the business

- (1) The Boards understand structure of investor relations that may affect control power of the administrative and management by using structure of the Boards which comprises of 4 Independent Committees from the total of 11 Board of Directors to balance out. Support good and professional management culture under the corporate governance and other policies strictly.
- (2) The Boards control structure and relationship of stockholders as per (1) not to be obstacles in exercising duties of the Boards such as having appropriate candidates as successors.
- (3) The Boards will look after reveal agreed information that may affect control of the business.

4.4 The Boards administer management and develop employees to have numbers, skills, talents, experience and appropriate motivations.

- (1) The company is fully aware that all employees at any level play a part to drive the organization to meet goals. To maintain skillful employees, all employees will receive learning and development plans yearly both domestic and internal which focus to meet directions and strategies of the company in each year. Nevertheless, employees will receive fair remuneration where the company compared to the labor market and in the same industry yearly and report to the Boards. In 2018, remuneration of the company compared to the survey in 2017/2018 found that HARN's remuneration was 14% higher to the market while sales and after sales, technicians receive top remuneration in the industry. All employees will be treated equally and employees may ask for recommendation and consultant from top managements at all level who has open-door policy and open minded. The management encourages ideas and courage.

Company's compensation and welfares

	CEO / MD	Director	Employee
Salary Motivate and retain employees with knowledge, capabilities and duties as assigned.	✓	✓	✓
Other Benefits Provident fund / Life & health insurance, Education scholarship) Build long-term stability	✓	✓	✓
Performance Bonus Reward for success, achievements referred to the indicators of success assigned in each year.	✓	✓	✓
Incentive according to performance Motivate to create sale-performance for progressive growth of the company	–	✓	✓
Remuneration in stocks (EJIP) Allow employees to participate in the ownership of the company and to maintain personnel in the long term to reduce staff turnover.	✓	✓	✓

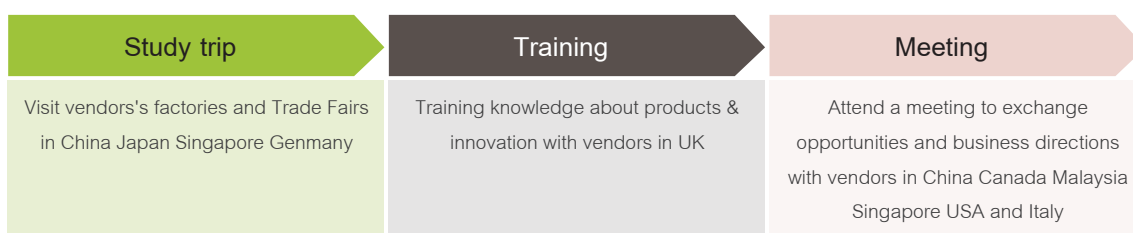
- (2) To support well-being of the employees, the company arranged short-term and long-term benefits in comparable to other companies in the labor market. The company supports employees to understand wealth management. by holding a training course called, **"All Round Financial Planning for Wealth and Sustainability"**, on May 16, 2019 to provide the right insight into finances and guidelines on financial planning, strategic saving, and preparation for retirement.

5

Nurture Innovation and Responsible Business

5.1 Put importance and support innovation that adds value to the business together with create benefits to customers and stakeholders. Responsible for society and environment.

- (1) To achieve a goal in "a leader of engineering solutions sustainably" The Company studies new technologies to develop product lines that the company sells constantly. Create differentiation and meet customers' needs and relevant parties by using strategies that given by the high-level of management. Send employees to business trips overseas and adapt experience at HARN. Share experience to other employees in the same division and focus to accomplish together with the company.



In addition, the company promotes innovation as a part of company's value and communicate the innovation to the public and to stakeholders direct and indirectly.

(2) Appoint Innovation Committees to promote innovative culture in the company systematically and to lead to new development and innovation that meet customers' needs and sustain the business.

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

5.2 Operate business with social responsibility and environment that reflect operation plan to ensure that all units operate with the same objectives, goals, and strategies of the business.

The company puts importance and focuses to create quality of life and safety to the social and environment by being a leader in service "sustainable engineering solutions" In the solutions that the company is a dealer.

(1) Administrative takes approved strategies from the Board of Directors and distributes goals into assigned divisions and department. Then, report to the Boards monthly.



5.3 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.

5.4 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.

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

Hardware Road map - 2019		Result
1. Hardware Good Performance	Supply laptops to all salespersons while replace the old equipments to be modern.	100%
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 - 2019		Result
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.	96.09%
2. Program development to reduce work process and increase work efficiency	Digital Transformation Project	

- (2) The Boards administer risk management and information technology risks.
- (3) The Boards set policies and safety and security measurement of the information technology where the ICT creates contingency plans in case of unforeseen circumstances of the information technology and to be reviewed yearly.

6

Strengthen Effective Risk Management and Internal Control

6.1 The Boards governs that the company has risk management and internal control that lead to achievement of the business objectives effectively and to operate under the relevant laws and standards.

Risk Management

- (1) The Risk Management Boards review Risk Management Policy yearly and cover the organization as a whole. Management at all levels considers and take objectives and goals to review for risks that may affect the organization and operation. Then, report to the Boards quarterly and arrange the reviews and evaluate Risk Management at least once a year (see detail in 10.Risk Factors pages 33-36)
- (2) The Risk Management Boards follow up and evaluate effectiveness of the risk management and monitor alarms and unforeseen risks including abnormalities.

Risk Categories					
Strategy	Finance	Operation	"Rule/regulation"	Corruption	External Factors
3	4	98	1	10	6

The company is able to control the Risk at all acceptable levels

Moreover, the Boards consider sufficiency of the internal control and risk management to ensure that the company has effective risk management.

- (3) To ensure that the company operates business according to the law and relevant standards domestically and internally. Therefore, the violation of law and relevant enforcements are also one kind of risks that each department needs to handle and review every month. The index of success is measured by KPI-COR 07 Law Compliance as a part of the evaluation of the relevant departments.
- (4) In managing above risks, the company takes results of internal control and risk management of subsidiaries and joint venture to be taken into consideration.

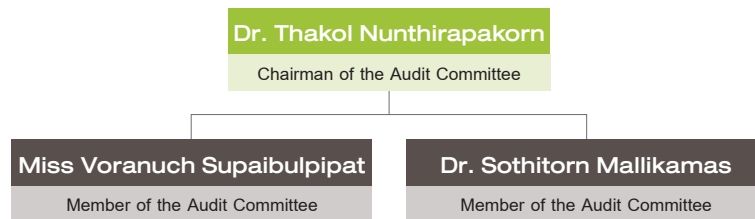
Internal Control

The Board of Directors recognizes the necessity to have in place efficient internal control mechanism at both managerial and operational levels as it is the key to building confidence by helping minimize business risks and enhance efficient operation through appropriate allocation of resources and achieving the defined goals. In addition, it can help prevent asset leakage, loss or misconduct, and ensure the accuracy and reliability of financial reports, encourage personnel compliance with relevant laws and regulations, and protect the equity investments of shareholders. Hence, the Company has clearly laid down the scope of duties and authority concerning various matters in writing for the management and operation functions, including overseeing the use of the Company's resources toward resource optimization and clearly separating the roles and duties between operation, control and evaluation functions to ensure proper checks and balances.

- (1) The Board of Directors has assigned the Audit Committee to take charge of reviewing the adequacy and efficiency of the internal control system set up by the management, establishing and reviewing the control system on operation, financial reporting and regulatory compliance, and overseeing the operation and risk management. The Board of Directors also looks into any warning signals and unusual transactions.
- (2) The Company has engaged Ultima Advisory Company Limited, an independent external party, as its internal auditor to examine and ensure the adequacy and suitability of the Company's internal control system. To enable the internal auditor to perform duties independently in order to promote proper checks and balances, the internal auditor shall directly report to the Audit Committee. The Company shall constantly monitor the assessment results to be assured of the system efficiency. The assessment on the adequacy of the internal control system and the reviewing process on major systems shall be carried out at least once a year, and the results shall be disclosed in the Company's Annual Report.

6.2 The Boards appoint the Audit Committee that can officiate efficiently and freely.

- (1) The Audit Committee is composed of 3 independent directors, all of whom have full qualifications as stipulated by the SEC and the SET and at least one whom has competence and experience in reviewing the reliability of the financial statements, as named below:



Mr. Thakol Nunthirapakorn is the Chairman of the Audit Committee who have adequate competence and experience in reviewing the reliability of the financial statements, having graduated with a Doctoral degree from Col. Of Bad./ Accounting, MIS, Economics, University of Arkansas, U.S.A. currently holds a position of adjunct professor in the University of the Thai Chamber of Commerce and had passed the 8th Director Accreditation Program (DAP) of the year 2004.

- (2) The Board specify duties of the Audit Committees in Charter which in 2019 (see detail in 13.Management Structure pages 49-50)

6.3 Monitor, look after, and manage conflict of interests which may occur between Administration and shareholders including to prevent misuse of assets, information and opportunities of the business. Also, transactions that may involve in the business in the misbehave ways.

Conflict of Interests

- (1) The Boards direct and provide information security and mandates policies and producers of confidentiality, integrity and availability of information and manage market sensitive information. Moreover, the Boards make sure that the Committees, top management, employees and any relevant parties such as legal consultants, financial consultants to follow the information security system.
- (2) The company obeys and manage shareholders equally and set direction of management in conflict of interest in transparent, auditable and for consideration between companies and stakeholders. In case of the circumstances, the stakeholders must report to the company immediate and report to the Board Meeting to review that particular issues. The Committees must report the conflict of interest prior to the hearing of that agenda and record in the meeting minutes.
- (3) The company sets direction to prevent the Committees nor management whom may have conflict of interest participate in the approval process where in the vote of the Board of Directors, that particular Committees may not vote on the agenda.
- (4) The company regulates that the Committees and the first 4 managements report conflict of interests to the company by February of every year.
- (5) The Audit Committee shall present to the Board of Directors the related party transactions and transactions with conflict of interest which have already been carefully considered in terms of appropriateness. The Company has strictly followed the guidelines set forth by the Office of Securities and Exchange Commission and the Stock Exchange of Thailand concerning the determination of prices and conditions engaged with persons with conflict of interest just like a transaction made with external parties.

Prevention of misuse of information

- (1) The Company strictly controls and monitors the use of inside information to prevent any abusive self- dealing and maintain fairness to all stakeholders. The Company has set written guidelines for keeping inside information and

for prevention of the use of inside information for abusive self-dealing, and communicated the guidelines to all staff organization-wide for further practice. Moreover, directors, executives and employees are required not to trade the Company securities and/or to enter into any legal acts using inside and/or confidential information, which may cause the Company direct or indirect damage. In addition, directors, executives and employees in the work units receiving inside information of the Company must not use such information before disclosure to the public and also must not trade the Company securities by themselves, spouses and underage children, either directly or indirectly transaction (such as nominee through a private fund), within thirty day prior to the disclosure of quarterly and yearly financial statements and at least 3 business days after the disclosure of such information. The Secretary of the company creates schedules that prohibits silent period and submits to the Boards and management every year.

- (2) The Company has put in place disciplinary punishment measures to be taken against those who take advantage of the insider information by disclosing it and causing damage to the Company. The punishments include verbal warning, written warning, probation, termination of employment by firing or disposition, as the case may be, etc.
- (3) Moreover, the Company has informed the Board members and Top 4 executives of their duty to report their holding of the Company securities and penal provisions in accordance with the Securities and Exchange Act B.E. 2535 (1992) and the regulations of the Stock Exchange of Thailand. The directors and Top 4 executives have to report the holding of the Company's securities from the date of their appointment within thirty days, including when there is a change in securities holding within 3 working days from the date of purchase, sale, transfer or acceptance of transfer by themselves, their spouses and underage children to the Office of the SEC. In which the company secretary reports trade to the board of directors Acknowledged every quarter.

6.4 Prepare policies and clear guidelines of anti-corruption. Then, communicate to all levels including the general public for practical purposes.

- (1) The Boards approved "anti-corruption manual" (S-QMO-025) on May 10, 2018 which is an ISO 9001:2015 certified document and the quality management Committees will examine producers of quality at least once a year to endure that in rules of operations are met according to the relevant laws of anti-corruption. It must be communicated to all Boards, management and employees, subsidiaries, joint ventures, other companies that control and agents (if any), Other related external parties such as partners domestic and international, customers through various channels such as public notice, Intranet, Digital Signet TV, Email, employees training to promote as company culture and value in 2019.

Definition

1	Asset Misappropriation	Burglary, fraud, obscuring, exploitation of company resources or obscuring evidence as well as the use of information or powers obtained from the performance of the company's duties to do any wrongful acts in all forms in accordance to obtain personal benefits and/or related persons.
2	Falsifying Financial Statements	To refrain from providing information or intentionally giving false information in the company's financial status report
3	Corruption	Any actions whether it is a presentation, promise, request a claim, giving or receiving cash or items instead of cash, property or any other benefit Including all forms of bribery with government officials or any other person both in the public and private sectors directly or indirectly to allow such person to perform or ignore the duty in accordance to obtain or maintain any other unfair business benefits to the company itself or those involved except where the law regulations, local traditions or trade tradition can be done.

Policies on Anti-Corruption

The Board of Director, Management, employees, subsidiaries, joint ventures, and other entities that may have a control over including agents (if any), will not be a part 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 the company exercise business with.

- (1) The company sets directions, procedures, and duties of responsible person including audit and review operations according to “Anti-Corruption Manual” regularly to meet changes of the business, rules, regulations, and the concerned law.

Important Anti-Corruption policies are as follow:

- | | |
|--|---|
| 1. Aid of politics | 9. Financial report |
| 2. Donate to charity and monetary support | 10. Accept cash from customers or other parties |
| 3. Gift giving and receiving of assets or other benefits | 11. Payment to creditor or any parties |
| 4. Entertainment | 12. Loan, lending, creation of obligations |
| 5. Bribe and convenient fees | 13. Conflict of interest |
| 6. Assets or commissions from sales,
trade discounts, agency fees | 14. Relevant transactions |
| 7. Procurement | 15. Save and storage of information on the computer |
| 8. Trade and investment | 16. Resource management |
| | 17. Communicate policies internally and externally |
- (2) The Boards will verify and review policies and Anti-corruption policy annually to meet changes of the business environment, rules, regulations, and the provision of laws. On May 14, 2019, the Boards reviewed the policy and distribute for use in the organization in May 21, 2019.

Operation in 2019

- Communicate policies and anti-corruption to all employees which counts as 100% through e-mail, Intranet, print announcement, and Digital Signet.
- Arrange “HARN Anti-Corruption” for employees and new recruits in total of 44 persons and all must pass the test on knowledge and policies of anti-corruption to stands for determination with 100%.
- In 2019, the company plans to review information, understanding, and create awareness of corporate governance, anti-corruption measures and business ethics through e-learning where employees can review and take time to understand and take assessment during 24 June 2019 to 31 December 2019
- Provide a risk assessment process from corruption that must cover all concerned departments, report the result to the Risk Management Committees, Audit Committee and the Board of Directors every quarterly. in every quarterly.
- Attended certify of a member of Private Sector Collective Action Against Corruption event on 26 February 2019.



Guidelines on supervision and supervision to prevent and monitor the risk of corruption

The company offers channels of complaint and clues to cover procedures of complaints, review facts and summarize including protect identity of the whistle-blower, stakeholders that may affect or risks that may receive from the operation of the business and actions of the Boards, Management, and employees relate to business ethics, violation of law and any action that may view as corruption.

(1) Scope and complaints and whistle-blowing


- Any action that violate or not comply to the laws, rules/corporate governance rules, business ethics including policies, rules, policies of the company
- Any action that is presumed as corruption or misbehave and to seek for interests that may not earn lawfully by law for personal use and/or other parties such as corruption, steal, fraud for example.
- Any action that may make employees receive an unfair treatment from operating or seen flaws of internal control and suspect that it may be a corruption or make the company losing its benefits.


(2) Persons that may give comments and clues

Employees, stakeholders, interests persons, commoners that seen, knew information or may affect from the operation of the business or from administer of the Boards, management, employees or from any action that concern scope of complaints and clues according to (1) above.

(3) Channels and methods for reporting clues

Employees or others whom has inquiries and seek for advice on anti-corruption policy may contact “Chief Operating Officer” at

 Tel. 02-2030868 ext. 415

 Send mail by post to Harn Engineering Solutions Public Company Limited

Corporate Governance Department 19/20-22 Soi Soonvijai, Rama 9 Road, Bangkapi, Huaykwang, Bangkok 10310

 Email : varinkan.t@harn.co.th

(4) Channels

The person may complain or provide information with details and mark as “confidential” to the Chairman of the Audit Committee which is an Independent Committee through

- Letter To. Chairman of the Audit Committee
Harn Engineering Solutions Public Company Limited
19/20-22 Soi Soonvijai, Rama 9 Road, Bangkapi, Huaykwang, Bangkok 10310
- E-mail chairac@harn.co.th
- Website www.harn.co.th

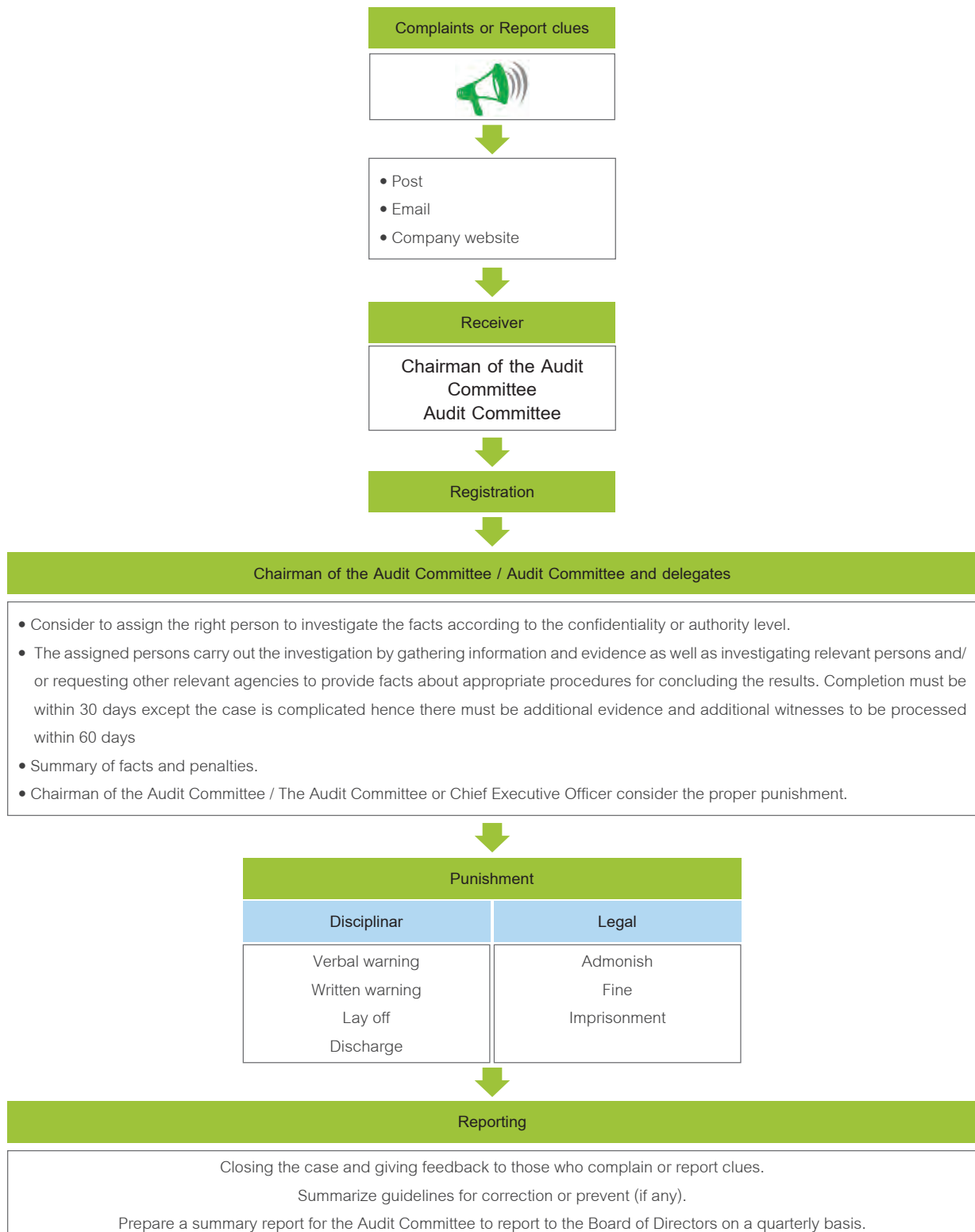
(5) Measures to protect whistleblowers

In order to protect the rights of the complainants and informants in good faith, the company will proceed as follows:

- Complainant Whistleblower as well as related parties will receive appropriate and fair protection from the company, such as not to demolish, punish or negatively affect employees. No job change, job description, workplace, job suspension, intimidation, interfering with job performance, termination of employment, or any other unfair treatment.

- The company will keep the information regarding the complaint confidential. Not disclosed to unrelated parties Except as required by law.
- Related parties that have been informed of the subject or information relating to the complaint Must keep the information confidential And not disclosed to others Except when disclosure is required by law, if disclosure is made intentionally, the company will take disciplinary action, and / or take legal action, as the case may be.

Diagram of the process of receiving complaints or report clues, investigation, punishment and reporting



Guidelines for monitoring and evaluating the implementation of the anti-corruption policy

The company determined that it is responsibility and duty of the Boards, management, and employees to be aware and follow policies and corporate governance and business conduct of the company.

The company supports development and understanding to the Boards, management, and employees. Moreover, the company designated all managers to be responsible for and take this matter as important issue to develop employees under supervision to understand and obey the policies and corporate governance and business conduct of the company strictly.

The company will not perform illegal activities or any action that against the policies and principles of corporate governance and business conduct

1. If the Boards management or employees violate the principles or policies stated, they will be punished.
2. If any action that may believe be in violation of the law, rules, regulations and policies of the government, the company will consider passing on to the government for further actions.
3. If employees found a difficulty in decision-making or in operation that concern corporate governance / code of conduct but not stated in this document, the following questions should be raised to self as follow:
 - Is the action against the law?
 - Is the action results in severe conflict of interest?
 - Is the action effects major reputation of the company?
 - Is the action is acceptable and able to disclose to the society?

If found that the answer is a risk to one of the questions above, the employee must take that issue to consult with supervisor in order to assist in reviewing and proceed to the next step.

However, if the employee or general public found any violation of the law and/or corporate governance, business conduct, please write a complaint letter through various channels listed in the complaint policy as follow:

- Letter To. Chairman of the Audit Committee
Harn Engineering Solutions Public Company Limited
19/20-22 Soi Soonvijai, Rama 9 Road, Bangkok, Huaykwang, Bangkok 10310
- E-mail chairac@harn.co.th
- Website www.harn.co.th

Code of Conduct

The Board of Directors is committed to carry out the Company's business with integrity and fairness by defining the code of conduct to be adopted among the directors, executives and employees of all levels so that every member within the organization understands the ethical standard which the Company upholds in carrying out its business operation, as well as to set up a practice guideline to reflect corporate intention in conducting its business with transparency and fairness and with responsibility towards all stakeholders, the society and the environment, all of which are done through trainings and various forms of internal communication. Such code of conduct also reflects corporate values and practices adopted by the employees in compliance with the defined ethical standard. The Company has made announcements and informed all members across the organization to acknowledge, Including disclosure on the website. Which must be understood and strictly followed Both written compliance and following the spirit of honesty.

The Board of Directors Followed up to comply with the said ethics seriously, has reviewed and approved the use of business ethics at the Board of Directors' Meeting No. 2/2019 held on May 28, 2019, the Board saw fit not to make any amendments, since enough details have been provided.

7

Ensure Disclosure and Financial Integrity

7.1 Manage financial reports and disclosure of information with integrity, accurate, and according to the principles, standards, and procedures.Create Financial Reports

The Board is responsible for financial of the company and communication of finance related information stated in the financial report. The financial report is arranged and certified by common accounting standards in Thailand. The company chose to disclose appropriate information and sufficient in the financial report at constant. The Audit Committees will verify quality of the report and internal control including reveal sufficient sensitive information as a notice in the financial report and reports to the Boards.

Disclosure

The Board of Directors attaches a high degree of importance on disclosure of accurate, complete, timely and transparent important information, both financial and non-financial, through reliable and easily accessible channels on an equitable basis. The Company has disseminated its information to shareholders, investors and the public through the channel and media of the Stock Exchange of Thailand and on the website of the Company. Its information is also compiled in the Annual Disclosure Statement (Form 56-1) and the Annual Report.

- (1) The Company has disseminated its information to shareholders, investors and the public through the channel and media of the Stock Exchange of Thailand and on the website of the Company. Its information is also compiled in the Annual Disclosure Statement (Form 56-1) and the Annual Report.
- (2) The Company is obliged to disclose information that affects decision making of investors and stakeholders. Information so disclosed, financial and non-financial, shall be accurate, complete, timely, reliable, transparent, not misleading and sufficient for investors to make decision, and shall accord with the criteria of Office of the Securities and Exchange Commission and the Stock Exchange of Thailand, including also other significant information that affects the Company share price.
- (3) The disclosure of financial information will be considered thoroughly with the stated aspects at minimum:
 - The result of the assessment is sufficient for internal control system
 - Comments of the auditors and recommendations relate to the internal control system and recommendations of the auditors through other channels (if any)
 - Comments of the Audit Committees
 - Relevant to main objectives, goals, strategies and policies of the company
- (4) The Company makes available brief reports on corporate governance policy, code of conduct, risk management policy, and social and environmental policy, and results of implementation in compliance with such policies including also non-compliance cases thereof together with reasons (if any) in the Annual Report and on its website.
- (5) The Company 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 the Company's financial status and operating performance in each quarter in addition to figure data in the financial statements.
- (6) The Company discloses in the Annual Report audit fee and other service fees for the auditor. Which has been approved by the annual general meeting of shareholders for the year 2019

Types of Fees	2019	2018
	Dharmniti Auditing Co., Ltd.	
Audit Fee		
• Annual audit fee and quarterly review fee	1,326,000	1,260,000
Other expenses which cover miscellaneous expenses during work period such as overtime allowance traveling and telephone etc.	per actual of expenses	per actual of expenses

- (7) The Company discloses in the Annual Report information on the roles and duties of the Board of Directors and specific Committees, number of meetings held 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.
- (8) The Company discloses in the Annual Report policy on payment of remuneration for directors and top executives of the Company that reflects their duties and responsibilities and types and nature of the remuneration, including also remuneration for any directorship on the board of subsidiaries (if any) in Annual Report of the Company.
- (9) In case of the disclosure of the information concern one of the Committees in particular, that Committee should be aware of and able to reveal identity thoroughly.

7.2 Ensure sufficiency liquidity and solvency

- (1) The Boards ensures that the Executive Committee is the pursuer in liquidity and solvency including the evaluation of risks in finance and potential risks. The report must be made to the Boards regularly and the Executive Committee and Administration should cooperate to solve the problem at urgent in case lack of liquidity or solvency.
- (2) In approval of any transaction or to give opinion to the Shareholder Meeting, the Boards will review and ensure that the transaction will not affect continuity in business, liquidity or solvency.

7.3 Ensure that the business has contingency plans or other mechanisms that able to fix financial crisis with care to stakeholders

- (1) If the business potential is downwards and may unable to pay for debts or at crisis, the Boards will closely monitor and will operate the business with care and follow rules on disclosure of financial information.
- (2) The Boards will give a notice of financial crisis such as lack of continuous investment, low cash flow, etc. to Administration to monitor and report regularly.
- (3) The Boards ensure contingency plans in case of financial crisis with care and fair to stakeholders including debtors and follow up on problem solving with logics. The Administration must report the status regularly.

7.4 Create a report on sustainability as see fit

The company has not prepared a separate sustainability report but can disclose related information on obedience of the law, business conduct, anti-corruption policy, treating employees and stakeholders fairly and respect human rights. Environment and social responsibility are also in the annual report where topics are listed from the most important matters to HARN's core business and respect standards of the report. The disclosure of operating plans distributed to divisions and results will be reported to the Boards and supervisors monthly and in quarterly to ensure that all operations and plans create values to the company sustainably.

7.5 Monitor the Administration. Appoint a position to look after investor relation and to communicate to shareholders and stakeholders such as investors and analysts appropriately, fairly, and in a timely manner.

The management of the company put importance in meet and greet, information exchange, ideas, opinions to shareholders, investors, analysts, reporters regularly to ensure that the fellows able to access company's information accurately, with integrity, transparency, and up to date especially those sensitive information regards to the stock price of the company. Available information must be shared to make the smart investment.

The company has not appointed the specific department. Currently, Mr. Wirat Sukchai, Chief Executive Officer is a delegated person who understands well in the business, objectives, goals, directions and acts as the investor relation. Channels of communication to investors, shareholders, analysts, related government sectors through are email: wirat.s@harn.co.th or phone 02 203 0868.

In 2019, Chief Executive Officer, the Board of Directors, Chief Financial Officer and other management participated in investor relation activities to announce policies and business direction including meet investors through channels and activities as follow:

7.6 Support the use of information technology to distribute information

Apart from distributing information according to the policy and through channels of The Stock Exchange of Thailand; Annual Report (56-1 Form) and Annual Report. The company disclosed in formation in both Thai and/or English via various channels constantly for example company website (www.harn.co.th), Facebook: harn Engineering Solution Pcl.

Disclosure Channels	Purposes	Activities in 2019
Email: wirat.s@harn.co.th Telephone : 02-203 0868	Open opportunity for general investor inquire about the performance opportunities and obstacles In business including important incidents that may affect the operation.	✓
Open to meet and interview in the form of a meeting	Provide opportunities for both domestic and international investors to inquire about strategies, business directions, as well as opportunities and obstacles in the company's business operations from management team	5 times
Event “mai FORUM 2019” Growth Partnership and Sustainability	To present the results of business growth potential and emphasize the position of company	1 times
Listed companies meet investors” (Opportunity Day) founded by The Stock Exchange of Thailand	Quarterly business operation results, business direction with questions and answers from investors, analysers and etc.	4 times
Annual Report and pattern 56-1	Showing the operation results of the company annually	✓
Information dissemination via the company website www.harn.co.th / Investor relations	To be channel for submitting quarterly and annual performance data after the information is disclosed via SET website and other information such as investor relations news, basic information on investment etc.	✓



8

Ensure Engagement and Communication with Shareholders

8.1 Ensuring that Shareholders are involved in making decisions on important matters of the company

- (1) The Company is well aware of and respects the basic rights of shareholders, both as investors and owners of the Company. These rights include the rights to purchase, sell or transfer the securities they hold; to receive profit sharing from the Company; to adequately access information of the Company; to attend the shareholders' meeting; to express opinions; and to make decision on important issues, e.g. dividend payment, appointment or removal of directors, appointment of auditor, approval of significant transactions having impact on the Company's business direction, and amendment of the Company's memorandum and articles of association, etc. The main mentioned agenda that stated in the law or relevant rules and may has significant effects to the operation of the company will be proposed as a Shareholders Meeting through the Annual General Meeting within 4 months from the date ending the Company's fiscal year. However, in an urgent case where a special session is needed to consider and approve matters affecting or involving the interests of the shareholders, and thus requiring the shareholders approval, the Board of Directors may call an extraordinary general meeting on a case by case basis.

- The 2019 Annual General Meeting of Shareholders on Thursday, April 25, 2019 at 14.00 hrs. at Parichart Room, 3rd Floor, Golden Tulip Sovereign Hotel Bangkok, No. 92 Soi Saengcham, Rama 9 Road, Bangkapi Subdistrict, Huay Khwang District, Bangkok 10320, There were 148 shareholders who attended the meeting, 39 of whom in person and 109 by proxy, holding a total of 351,885,963 shares, which represented 60.2029% of the total issued shares of the Company.

The meeting was held in conformity with the guidelines of the AGM Checklist issued by the Thai Investors Association to ensure the meeting standard in compliance with corporate governance principles.

- (2) Support and participation of shareholders

- Allowing minority shareholders to propose to add meeting agendas prior to the shareholder meeting date clearly, from 1 October to 31 December 2019, the company disclosed policies on propose meeting agendas in advance such as qualifications of the shareholders, limitations to propose agenda, submission procedures and review of the Boards on the company website, www.harn.co.th \ investor relations \ information for shareholders \ shareholders meeting and announced to the shareholder through the website of SET.
- Allowing minority shareholders to propose as an individual name as a Committee in advance from 1 October to 31 December 2019. Qualifications were published on the company website, www.harn.co.th \ investor relations \ information for shareholders \ shareholders meeting and informed shareholders through the website of SET as another.

However, there was no shareholders proposed agendas and no nominee names as the Committee at that time. The Secretary of the company reported to the Board to be acknowledge already.

- (3) The Company has a policy to support and encourage all shareholders, including institutional shareholders, to attend the shareholders' meeting. The Company will prepare and send to the shareholders an invitation notice indicating the venue, date, time, agenda items, supporting information of the agenda items thoroughly and sufficient for the rights of the shareholders, as well as the opinion of the Board of Directors on each agenda item indicated in the invitation notice, or in the supporting documents so enclosed.
- (4) The Company sent the invitation notice for the 2019 Annual General Meeting of Shareholders along with supporting documents of the agenda items to the shareholders by post at in April 2, 2019. The shareholders were informed 23 days prior to the meeting date and were sent invitation for the Annual General Meeting on the company website (www.harn.co.th) on 21 March 2019 in both Thai and English, at least 35 days prior to the meeting, and announced through news channel of the Stock Exchange that the company has already published the above information on

the company website so that all shareholders had easy and timely access to the information, hence adequate time to study and consider the information needed in their decision-making.

Moreover, the Company publicized the invitation notice in newspaper between 17 to 19 April 2019, 6 days before the meeting date for the shareholders' acknowledgement and preparation for the meeting.

- (5) The Company allowed the shareholders to provide their opinions, suggestions, and questions until April 15, 2019, 10 days before the AGM under clear criteria set by the Company and notified to the shareholders along with the meeting notice, as well as posted on the Company's website.
- (6) In case the shareholders were unable to attend the meeting, the Company allowed them to assign the Company's designated independent directors or any other persons to attend the meeting on their behalf, by using either one of the proxy "form b" sent along with the invitation notice in which at 3 independent director was proposed as an option for proxy assignment of the shareholders.

8.2 In charge of Annual General Meeting and preparation with transparent, effectiveness and supports rights of shareholders

- (1) The Company fully facilitated the shareholders' attendance of the meeting exercise of their voting rights.
 - The meeting venue was arranged to be easily accessible by the shareholders and provide transfer in every hour from the department store
 - The shareholders had the opportunity to register their attendance 1 hour before the meeting began. Also, during the meeting, they were able to register their attendance without losing their rights.
 - The Company assigned its staff to provide assistance and information during the verification of documents and the registration process.
 - Prepare sufficient coffee breaks and beverages to the shareholders
 - Prepare stamp tax in case the shareholders delegate a personnel
 - The Company used a barcode system containing each shareholder's reference number in the registration form for the registration and vote casting process to ensure accuracy, convenience and promptness thereof.
- (2) The Company has no policy to add agenda items for the meeting without notifying the shareholders in advance if not necessary, especially agenda items involving important matters on which shareholders should have adequate time to study information before making decisions.
- (3) The Company provided voting cards separately for each agenda item to facilitate the vote casting and counting process. Upon the completion of the vote casting, the votes so casted were counted in combination with those indicated in the proxy forms. The results of the vote count were announced right during the meeting.
- (4) The Company conducted no act in a manner that would limit the shareholders' right to attend the meeting. All the shareholders had the right to attend the meeting any time during the meeting, and were allowed to freely raise questions and give comments or opinions.
- (5) The Board and top management members, and the auditor, as well as the independent legal advisor, attended the meeting (if any). Before the meeting started, the Company Secretary, to explain the meeting procedures, such as opening of the meeting, voting, and counting of votes casted by the shareholders on each agenda item in accordance with the Company's articles of association.
- (6) The Company provides an opportunity for the shareholders to exercise their right to elect each director individually.
- (7) The Company would declare the beneficial interests of the directors in the invitation notice. At the meeting, directors with beneficial interests or involvement in any agenda item would be notified by the chairman of the meeting to the attendees before considering that agenda item. Directors with beneficial interests in any agenda item would not be entitled to be present at the meeting during consideration of that agenda item.
- (8) The Company invited volunteers from the shareholders present at the meeting to witness the vote counting to ensure transparency in the voting process, and allowed the shareholders to enquire about the voting process and method.

- (9) The Company encouraged the shareholders to exercise their rights for protection of their interests by asking questions, giving opinions and suggestions, and casting their votes on important matters that may have impact on the Company, such as appointment or removal of directors, nomination of qualified persons to be independent directors, approval of the auditor, dividend payment, capital decrease or increase, imposition or amendment of articles and memorandum of association, approval of special transactions, and so forth.
- (10) Prepare quality assessment of the Annual General Meeting through a survey by shareholders and to use the data to develop the future meetings with transparency and beneficial to the shareholders.
- (11) Disclose important information of the company around the exhibition area of the Annual General Meeting including a corner for Investor Relations where staffs of HARN stand by and welcome inquiries that the shareholders may have.

8.3 Monitor disclosure of meeting agendas and the Annual Report to the shareholders sufficiently and accurately.

- (1) The Company disclosed the meeting resolutions together with voting results on the same day after the meeting in April 26, 2019 as a newsletter to the SET via the SET's electronic listed company information disclosure (ELCID) system and also by posting on the Company's website (www.harn.co.th). By recording meeting minutes accurately and as see fit to the good corporate governance with the required information below at minimum:
- Names of the Committees and Boards that attended the meeting and ratio of the Committee that attended the meeting and non-attendees.
 - Ways of voting and counting the votes, agreement of the meeting, results of the vote (agree, disagree, N/A), voided ballot of each meeting.
 - Questions and answers in each meeting in details including names and last names of inquirer and respondent.
- (2) The company arranged the minutes of meeting to shareholders by posting on the company website (www.harn.co.th) and to the Stock Exchange in May 8, 2019 or within 14 days after the Annual General Meeting which was an agreed timeline by The Stock Exchange.

2 Compliance with the Company's principles of corporate governance in 2019

From the evaluation of corporate governance of "Findings from the survey of corporate finance of the listed companies in Thailand, 2019" arranged by Thai Institute of Directors and supported by The Stock Exchange of Thailand and The Securities and Exchange Commission, Thailand, found that HARN received an overall of 91 scores which is "excellent" or 5 stars rating. The score was better than in 2018 which was 87 scores and the result of HARN in 2019 was significantly higher than those surveys of the listed companies in Thailand (scored at 82).

The Board of Directors realizes its role and duties and responsibilities as the corporate leader who has to monitor and supervise the Company to ensure sound business administration and create value for business sustainability through business processes. Therefore, review and exercise CG Code 2018 in total of 8 agendas and take recommendations from the above surveys and approved the following issues.

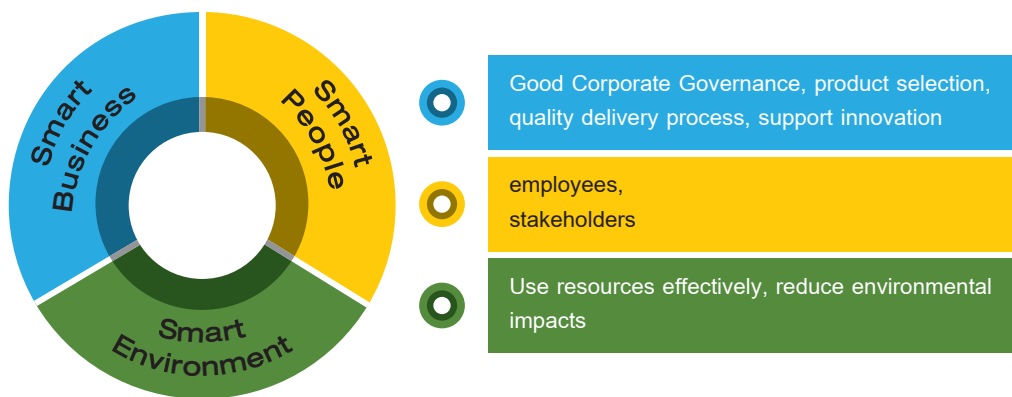
CG Code operation procedure	Justification or Alternative Measure
The Board of Directors should consider appointing the CG Committee.	Delegating the Corporate Administration Division to oversee and present to the Board of Directors for acknowledgment of the implementation at least once a year.
The Boards should consist of more than 50 percent of independent regulatory commission.	At present, the proportion of independent directors is three (3) person from nine (9) person (as Dr. Supot Tiarawut has resigned from the Independent Director position effective from January 1, 2020). The proportion of independent directors is 33 percent because the products that the company distributes are various and need to have knowledge in products, markets, competitive conditions and customers' needs.
Sustainability Report	Sustainability reports are not yet operational. But 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 reports in the Corporate Governance category, Social & Sustainable caegry in the annual report

15

Corporate Social Responsibility

HARN Engineering Solutions Public Company Limited (“HARN”), realizes the importance of operating the business based on sustainable development and are aware of the risks and all interested parties involved in the sustainability cycle of the company. The BOD therefore determines HARN's social responsibility in the vision, mission, values and established a commitment on sustainability that states “Quality Living through Sustainable Engineering” which will be further developed into long-term sustainable strategy of the HARN.

The Board of Directors determined that management of the company must attend P01 curriculum which manages Corporate Sustainability and another 6 operational seminars that build skills in daily tasks that involve in developing business and sustainability arranged by Stock Exchange of Thailand. Also, to initiate activities in the company by dividing into 3 CSR groups that are significantly affect HARN's operations which are:



Priority and Participation by HARN Stakeholders

The Company respects the rights of all stakeholders, whether they are internal stakeholders like shareholders, executives and employees of the Company, or external stakeholders like creditors, customers, trade partners, competitors, the government sector, the society and the community. The Company is well aware that supports and viewpoints from all stakeholders will benefit the Company's business operation and development. Hence, the Company will comply with relevant laws and regulations so as to safeguard the rights of all stakeholders. In addition, operating its business, HARN is aware of the entitlements and expectations of all stakeholders brought into consideration according to the following guidelines:

Shareholders



- : The Company has a policy of running its business with honesty, integrity and business ethics and puts best efforts in developing its business, and improving the operating performance to ensure consistent and reasonable returns on the investment of the shareholders and investors on a sustainable basis. The Company adheres to equitable treatment of its shareholders. Its directors, executives and employees are committed to performing duties with honesty and making decisions with transparency, carefulness, prudence and fairness to all shareholders for the maximum benefits of all shareholders. The Company will also present the situation of the Company such as performances, financial status, accounting status and other reports regularly, fully and accurately. The Company will notify all of the shareholders regarding the future trend of the Company both positively and negatively which is on the basis of probability with back up evidences and sufficient reasoning and will not seek for personal gains or benefits for other parties by utilizing the Company's information that has not been disclosed to the public, or proceed with any action that may cause conflict of interests with the Organization.

Performance in 2019

Policies	Course of action	Results	Assessment
● Fair employment	Acting in accordance with Labour Protection Act and other employment related regulations	Set criteria for employment and provide welfare suitable for staff responsibility and work conditions.	Cases of labour problems or complaints: 0
● Appropriate welfare			Compared to the Job market every year: common work: average; sales and service: above average.
● Safe and hygienic work environment	Providing a good and safe work environment for staff and their property.	The Safety Committee did a follow up every month.	Staff satisfaction level towards the environment is 69%.
● Career advancement opportunities	Assessing staff performance and promoting	The Board of Directors review the assessment criteria annually.	The number of staff that meet the assessment criteria: 100%

Customers



- : The Company gives high priority to customer satisfaction. It is committed to procuring products with quality commensurate with product price and punctual delivery, and compliance with contracts, agreements or conditions, as well as after-sales service provided by quality teams. It has adopted the ISO 9001:2015 to the organization, and set a quality policy: We will build customer satisfaction with high quality products and services, advanced technology and business management of excellence.

Trade partners
and /or creditors

- : The Company has a policy to create good relationship with our trade partners and/or creditors and to run the business on the basis of mutual benefits that are fair to all parties. The Company treats all trade partners and/or creditors with due regard to the maximum benefits of the Company, avoids the circumstances that may cause conflict of interest, and complies strictly with the commitment or agreement to achieve mutual benefits. The Company will provide certain guidelines concerning the creditor, especially on purchasing conditions, warranty, payment terms and failure to pay debt on time for the seller during the negotiation process and strictly comply with all conditions with the trade partners and/or creditors. Any inability to fulfill the conditions shall immediately be informed to the trade partners and/or creditors to find a solution. and to prevent any harm and encourage trade partners and/or creditor to fight against corruption by agreeing to anti-corruption policies (for new registered sellers).

Performance in 2019

Trade partner selection (726 trade partners)	Results
<ul style="list-style-type: none"> ✓ Manufacture and sell products that meet the needs ✓ Has work quality certification and product certification ✓ Has after-sales service or technical support ✓ Not related to any of the staff in the company ✓ Well-known and ethical 	Passed the criteria as in percentage: 100%
Performance evaluation (Twice/year: 365 trade partners)	Results
<ul style="list-style-type: none"> ✓ Products ✓ Time ✓ Documents 	The average of 95%

Competitors



- : The Company has a policy to treat its competitors with adherence to fair competition rules, without seeking competitor's trade secret by any unfair or inappropriate method. The Company will abide by the competition rules, without any attempt to impair the competitor's reputation through false accusation or accessing the competitor's trade secret in a dishonest manner.

Employees

: The Company considers its employees as its essential resource that will play an important role in supporting and driving the Company to successful operation. Therefore, the Company has a policy in place to improve the quality of life of all staff members with fair employment conditions, reasonable welfare packages, promising career path, and safe and sanitary work environment. The Company will enforce laws and regulations relating to the employees strictly, provide good working atmosphere and safe for the assets and lives of the employees. Treat the employees gently and with respect to their individualities and human dignity. Reward the employees fairly. Promotion and relocation, including rewards and punishments must be conducted fairly by considering the knowledge, abilities and suitability of each employee as the standard. Emphasize on the skills development of the employees by providing equal opportunities regularly. Avoid any unfair action that may affect the stability of the employees' jobs or threaten and cause stress to the employees mentally. The employees have the rights to appeal in the case that they are not treated fairly according to the system that allows for opinions and suggestions from all levels of employees equally and fairly.

Public sector

: The Company runs its business in order to support the country's advancement in accordance with the relevant laws, rules, regulations, as well as customary practice.

**Community,
Society and
Environment**

: The Company values the responsibility for the community and the society by strictly following various standards relating to safety, security, sanitation and environment, and with the impact on natural resources and the environment taken into account. The Company has continuously fostered awareness of social and environmental responsibility among the staff at all levels and created activities that will promote the society, the environment and the quality of life of the people. The Company cooperates and controls the strict use of the laws and regulations issued by overseeing departments, emphasizes on the communal and social activities by focusing on the development of the society, community, environment, creativity and the protecting the natural resources.

Smart Business**Fair business operation**

In the course of business operation, the Company is committed to fair and ethical administration, creating management credibility. The fair treatment shall apply to all groups of stakeholders, including shareholders, customers, business partners, and competitors. The Company 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, the Company 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. In so achieving, the Company has established the following guidelines:

Promote fair competition

1. Undertake the business activities in compliance with the law and competition regulations, and cooperate with the government authorities.
2. Establish the procedure and measure preventing the involvement in or conspiracy with the behavior against fair competition.
3. Ensure the employees be aware of fair competition and compliance with applicable competition law.

4. Promote fair competition and activities, and support anti-monopoly and anti-dumping.
5. Pay attention to the Company's 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

1. Integrate social and environmental measures in the measures and procedures for procurement and distribution.
2. Encourage other relevant companies to accept and apply the similar policy in order to prevent unfair competition.
3. Actively participate in elevating awareness of the principles and issues relating to CSR activities in which the Company takes part.
4. 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 the right over property

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

The Company allows for reporting of any possible offence or filing any complaint of any breach of law or ethics through an independent director and a member of Audit Committee. The Company 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 Company's Board of Directors.

In addition, the Company 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 employees organization-wide to be aware and follow. In this regard, the Company has set a process to monitor such performance on a regular basis.

Smart Business

Responsibility to Consumers

The Company 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 the Company. The Company always considers investing for the maximum benefits of the consumers as well.

HARN is committed to sharing the engineering knowledge of the company with its customers and the general public by posting contents on Facebook and the company's website to provide society with wider knowledge and deeper insights. Moreover, the company did a project called "Knowledge Sharing" aimed at training interested participants in the South to have the knowledge of how the cooling system works. The project took place twice in 2019 based on "The giver learns and grows" motto.

The Company develops the responsibility to the consumers through the practical process and the staff activities in various departments following the ISO 9001:2015 certification, which is audited by the system twice every year, each month in January 2019 and December 2019.

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



Customer Satisfaction Survey 2019

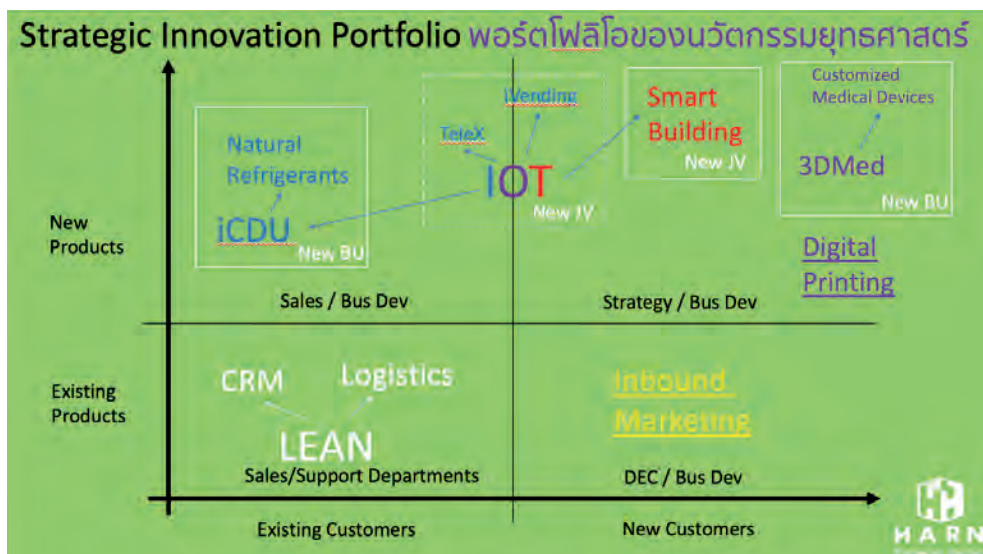
The Company has a policy in place to conduct a survey of customer satisfaction on an annual basis so as the company to get feedback on the delivered to customer in various fields:

In 2019 Customers' Survey found that overall score was significantly higher than in 2018 which reflects commitment that created customers' satisfaction as per our policy "We will create customer satisfaction by delivering products and high quality services with advanced technology" The company will analyze customers' comments and recommendation to develop and improve our products and services to meet customers' need sustainably.

Customers' Satisfaction	2019	2018	2017
Product (quality, variety of products)	89.98	88.06	84.80
Sale persons (product knowledge, services, problem solving)	90.3	87.93	85.40
Other services (management, providing information, contact channels with the company)	89.01	86.31	82.00
Average Customers' Satisfaction	89.76	87.43	84.07

Smart Business

Discovering and publishing the innovations to the society and to the stakeholders



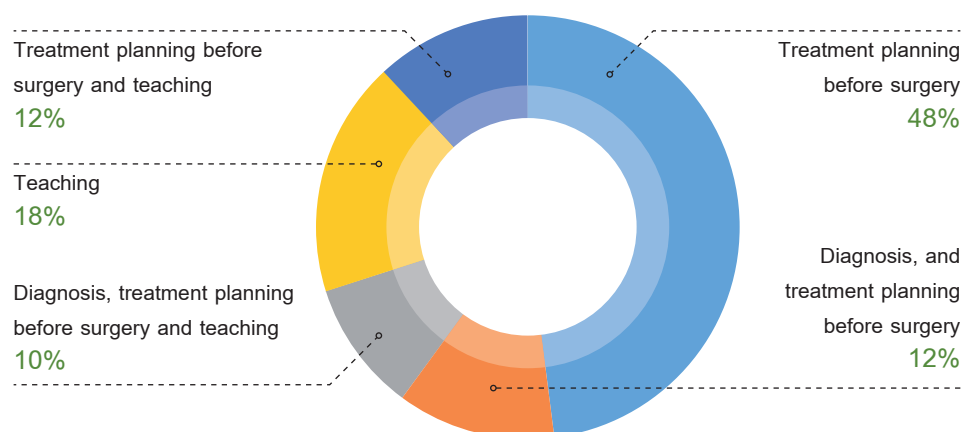
As shown in the strategic innovation portfolio above, HARN engaged in 2 major innovative activities in 2019 including;

Harn 3DMed project with creation of replica of human organs by advanced 3D printing technology for effective medical diagnosis and treatment planning

The company was sponsored by the National Innovation Agency (Public Organization) (NIA) in the project "HARN 3D Med: creating the human organ replicas with the advanced 3D printing technology for effective medical diagnosis and treatment planning" in project code: P13-EC-61-02-005. The timeline for this project began from 15 May 2018 to 14 November 2019 with objectives;

1. To create human organ replicas with the advanced 3D printing technology for diagnosis, treatment planning, and medical education.
2. To test with other surgery centers of the leading hospitals in skull, jawbone, facial, cardiothoracic, and orthopedic surgeries.
3. To offer high - quality and commercial 3D printing service for medical centers across the county at a reasonable price.

The company already delivered 50 human organ replicas to the leading hospitals as scheduled. These models were applied for treatment planning, or together with diagnosis, or together with medical teaching about 41 cases amounted to 82% and used only for teaching about 9 cases amounted to 18%. The statistics also showed that doctors used these replicas mostly for treatment planning before surgery amounted to 48%, followed by medical teaching amount to 18%.



Usage	Types of usage				
	Treatment planning before surgery	Diagnosis, and treatment planning before surgery	Diagnosis, treatment planning before surgery and teaching	Teaching	Treatment planning before surgery and teaching
Treatment planning before surgery	Y	Y			Y
Diagnosis		Y	Y		
Teaching			Y	Y	Y
Number of cases	9	6	5	9	6
Usage proportion %	48	12	10	18	12
Satisfactory score (total 5)	4.43	4.44	4.64	4.5	4.62

The result showed this project testing together with surgery centers of leading hospitals received an average score at 90.5% and was placed at an excellent level, declaring its usefulness for diagnosis and treatment planning before and after surgery. The hospitals participated in this project included Chulalongkorn Hospital, Siriraj Hospital, Ramathibodi Hospital and other leading hospitals across the country. The HARN 3D Med project maintained cooperation with medical centers to develop 3D printing application to make benefit for medical profession and national education, i.e. researches on 3D bone or human organ printing.

Examples of human organ replicas

- Skull, jawbone, facial surgery



- Cardiothoracic surgery



- Orthopedic surgery

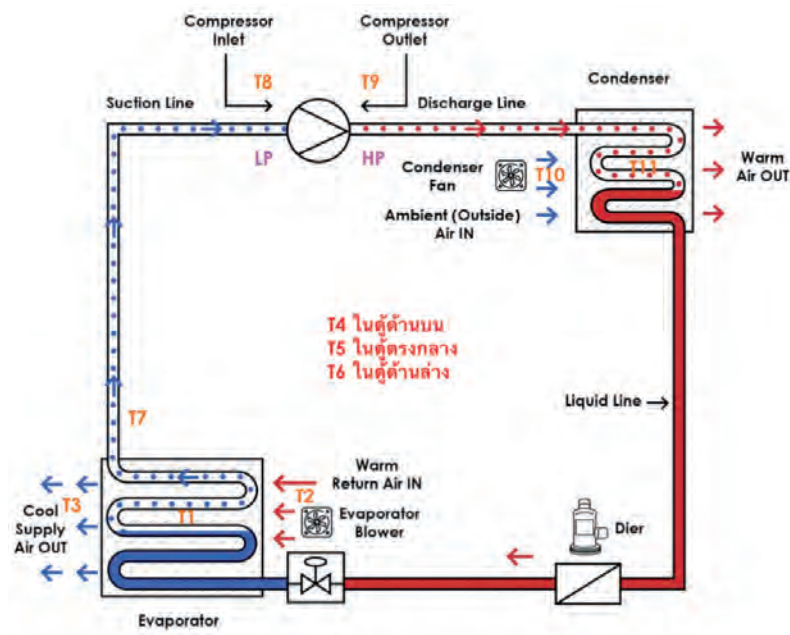


Developing the IOT system to apply for business

In 2019, the company launched an installation testing the IOT system with refrigeration system to monitor working of cold storage system titled "TeleChill" with objectives:

1. To reduce electricity usage in cooling system.
2. To increase effectiveness in product management and maintain food quality.
3. To improve a maintenance system, reduce or avoid an emergency case as a result of system breakdown.

The first step was to create a simply mock up to test a saving concept. If the testing made a satisfied result, the business model will be developed.



The company selected a candidate who is interested in developing IOT system out of 2 candidates to join a test and monitor working of cold storage system. The test had a satisfied result. IOT system reports internal data of cooling system effectively including the most important information on energy usage. The company decided to install this energy saving equipment in the testing cold storage. The result showed 25 - 35% of energy saving. The selected candidate experienced in installing the IOT in basic building system and monitored working of the basic building system from the center. The candidate then notified problem or damage for maintenance or repair and saved information in traceability system and made a report. Developing the IOT system not only made improvement for the cooling business but also the safety business and made convenience in the buildings.



Smart People**Respect for Human Rights**

The Company conducts its business with respect to the lives and dignity of all humans, promotes all areas of the Company to operate on the basis of dignity and protect the civil liberties including equal treatment for all parties which is the root of management and human resource development. The practice guidelines are as follows;

1. The Company 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.
2. The Company 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.
3. The Company 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.

Smart People**Fair treatment of employees**

The Company attaches great importance to its employees, which are important resources of the company. In order to help the company grow sustainably, the Company attaches importance to fair treatment of workers. And set a policy to take care of employees to have a good quality of life. Have fair employment conditions Have reasonable welfare. Have the opportunity to develop progress. It also has a safe and hygienic working environment. It is a mission that is. "We believe in value. And potential employees and strive to create a happy working atmosphere, enthusiasm, initiative. And has continued to develop. To the knowledgeable team. On the principles of righteousness, positive thinking and professional responsibility"

In the year 2019, the company did not violate the laws regarding labor, consumers, employment, trade competition, environment, The practice guidelines are as follows;

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

Remunerations and Benefits for the Employees

The Company had established the Welfare Committee to take care and be responsible for all levels of employees in the Organization, so that open the opportunity the employees can feel fully participated in terms of setting the policies. Because, the employees are the main force that drives the business growth and maintain its sustainability from the past to the present. Other than the salary that the employees receive, the Company also provides benefits and welfares in various forms fairly and appropriately. All of the benefits in which the Company provides are based on the same standard as the leading public company in the similar industry and the company can afford it.

(Details see in 13. The management structure, item 7.2 Employee compensation page 64 and 14. Corporate Governance, Chapter 4 Recruitment and development of senior management and personnel management, pages 77-78)

Occupational Health, Safety and Environment Policy

The Company 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.

Table Showing Safety Related Operations in 2019

Safety policies, occupational health and work environment	Plans and activities	Results
1. Working safely is the responsibility that each staff must take. Superior at all levels should set a good example, support their staff and encourage them to strictly follow the safety, occupational health and work environment policies.	1.1 Announced Safety, Occupational Health and Work environment policies (S-QMO-018) and "Safety, Occupational Health and Work environment Manual" (S-QMO-021) so every staff can study them and strictly follow them	Reviewed the documents 1 time and followed up on a monthly basis
2. Providing know-how for staff at all levels so they can develop a good safety and occupational health working style	2.1 Held a training workshop called "General Safety for New Staff" for everyone	12 training workshops, 69 staff
3. Developing a safety, occupational health, work environment and environment management system that must comply with related laws, international standards, and any other requirements the company apply to its business operation. Acting in accordance with customers' safety and environment requirements	3.1 "Work environment inspection (Light, heat, chemicals, dusts)" 3.2 Safety inspection 3.3 Annual safety inspection of Panchan 3.4 Inspection of firefighting and fire preventive equipment	1 Time Every month, 12 times in total 1 time Every month, 12 times in total
4. Promoting the development and betterment of work environment, efficient resource usage, safety procedures, and preventive plans	4.1 Shared safety contents and news on Email and Digital Signet	Every month, 12 times in total
5. Reviewing and assessing the safety system periodically for continual development plan	5.1 An emergency drill in case of chemical leakage 5.2 Training on basic firefighting 5.3 Training on how to extinguish and escape fire in the premises, with government documents submitted 5.4 Training on how to extinguish and escape fire in the warehouse	1 Time 1 Time 1 Time 1 Time
6. Receiving feedback from staff through the Safety Committee and Safety Officer for development plans in order to maximize safety of the staff	6.1 Meeting of the Safety Committee 6.2 Follow up on development of unsafe work space	Every month, 12 times in total Every month, 12 times in total

Number of accidents Classified by characteristics of danger and seriousness Between January and December 2019

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	-	-	-	-	1	-	1
Being exposed to chemicals	-	-	-	1	-	-	1
Vehicle Accident	-	-	-	-	-	15	15

- 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 Wednesday 27th November 2019.



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 6, 2019, in which 237 employees undergoing medical examinations, 228 were actually examined, representing 96.20%.



Human Resource Development

Personnel development policies have been set to develop personnel at all levels equally, improve their 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 the company. Annual training in and outside the company, 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, realizing the importance of personnel development, which is contributable to the company's success, has policies to empower and develop its personnel. Goals and strategies complying with the way the company is expanding and the company's values, are used as a framework for training and developing personnel.



In 2019, HARN implemented its personnel development plan thoroughly, covering all areas. Not only did the staff gain knowledge and skills that are necessary for their work, they also had the opportunity to participate in various activities that are beneficial to their physical and mental health and helped build good relationships between staff, leading to the spirit of collaboration and happiness at the workplace.

Seminars and Development

HARN is determined to execute its human resource development plan as soon as its employees start working at the company 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.

HARN values 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 company'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 the company's vision that says "We will be the leader in providing sustainable solutions ..." HARN also 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.

HARN also provides training focused on other related fields can help staff to work effectively such as Kaizen Course that is focused on improving and reducing costs to increase productivity, Communication Course for Effective Coordination, Leadership Development for Professional Leadership Course and Time Management and Prioritizing Techniques Course.

Furthermore, HARN also provides online courses for staff which they can study anywhere, anytime, through supported devices such as smartphones, tablets or notebooks. Learning and testing to assess the staff's the knowledge and understanding of anti-corruption in the organization is also necessary so that executives and staff can have the insight into the issue, are aware of their roles and responsibilities and fight against any kind of corruption in the organization.

Summary of personnel development workshops in 2019

Summary of personnel development	Unit	2019	2518	2517
The number of total staff	Person	254	252	244
The number of training hours	Hour	2,762	3,713	4,131
The number of training hours of each staff on average	Hour	10.87	14.73	16.93
Expenses on internal training	Baht	1,015,707	1,240,609	1,227,800
Expenses on training abroad	Baht	2,400,000	933,117	3,560,000
Score of bonding experience	% Bonding experience	74.47%	68.00%	81.00%

Training course	Description	Unit	2019	2518	2517
Basic Training Course	Focused on the fundamental knowledge of the business, its policies, its values, its cultures	% Number of trained staff	17%	45%	100%
		Average of training hour	6.00	2.40	3.70
Training Course on Preparation for Greatest Strength	Focused on fundamental knowledge that the staff should have 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.	% Number of trained staff	50%	57%	44%
		Average of training hour	9.31	5.20	4.80
Training Course on How to Work Effectively	To get an insights into the effective way to work, factors affecting you or your work, and a way to adapting to change and increasing management efficiency level	% Number of trained staff	54%	97%	49%
		Average of training hour	7.26	10.80	7.90
Training Course on Effective Management	Focused on management, learning process, innovation development to be more competitive	% Number of trained staff	16%	12%	8%
		Average of training hour	6.75	47.60	82.10



Employees activities in 2019

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

Participation in the TEMCA CHAMPIONS CUP 2019 football tournament



Songkran tradition Watering the wishes of the executives on the Thai New Year



Annual merit making activities



Activities on the occasion of Mother's Day



Mom, you are the best of my life.
#HARN #รักแม่ต้องรักโลก

Welcome the festival of August.
The activity "Love mother must share with the world"

กิจกรรมดังกล่าวมี

- 1) โฟโต้ทักทายกับคุณแม่ และเก็บเงินบริจาคคุณแม่แบบหวานๆ พร้อมใส่ไอเดียเท็ก **#HARN #รักแม่ต้องรักโลก**
- 2) แคมเปญจูงใจให้บริจาคสิ่งของแก่ **Line@HARN**

รางวัลที่ลูกค้าได้รับ

- 1) บัตรกำนัล จดรับรางวัลโชคดี จำนวน 5 ท่าน
- 2) ประกาศพลับพลาที่ 14 สิงหาคม 2562

สำหรับโพสต์ที่มี "ยอดไลค์มากที่สุด" รับรางวัลสุดน่ารักไปเลย
ตั้งแต่วันที่ - วันที่ 12 สิงหาคม 2562 ลงท้ายเข้ามาเรื่อยๆ

Like, The most



Thatchaya lam-sa-ard
300

Annual travel activities



New Year's party event



We invite everyone to join the seminar on
"All-round financial planning Build stability and wealth"

Thursday, May 16, 2019, 9.00 - 11.00 hrs. At the meeting room 3/4



Activity can be done at Khun Khantphong (Tel. 505). Application deadline is 3 April 2019.

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

Communication with employees

The Company 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, the company has arranged communication channels with employees according to the importance of the matter to be communicated as follows:

- The annual staff meeting on March 2, 2019, to allow top executives to share vision, mission and corporate strategy in both short and long term for employees at all levels.



- Direct communication from Chief Executive Officer to all employees to Application LINE Official “HARN” once a month to create understanding in business direction, changes and creates motivation and emphasis on values, visions, and innovation.
- Assessment of employees' engagement and work happiness and satisfaction. As the Company believes that career security, good work environment, good health and happiness at work will contribute to enhancement of work efficiency. In 2019, 159 out of the total of 254 employees, representing 63.00%, responded the questionnaire and the result of which was that the Company scored 74.47%.



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



Smart Environment

Environmental Management




HARN encourages the efficient use of resources in all work processes

The Company 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.

The company had revised the training manual used for training staff on safety/work environment and environment. The training started on February 2019. The test results after the training show 74.29 % of success, encouraging the staff to be aware of the right way to dispose waste via communication channels in the company such as email, Application Line Official "HARN" and Digital signage.



The Company realized the importance of reducing use of paper in work process with measures and practices set out as below:

Re-Duce	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
Re-Use	Print on one side printed paper
	
Re-Cycle	Placement of separate bins eg. General waste, used paper, bottles & plastics and sell reusable waste from paper, bottles & plastics.
	

Smart Environment

CSR after process

Social or Community Development

The Company 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.

1) Fundraising activity for the needy children in Nok Khamin Foundation

Executives and employees participated in the Songkran festival tradition.
Make a donation to the underprivileged children of the Ban Nokkhin Foundation.

Total amount 4,110 baht

2) "Sharing Knowledge" Activity to fund scholarship students in Nithiyuwapat Foundation

Punya
"Change unused items
As an educational opportunity"

Harn Engineering Solutions Public Company Limited together with Pan Kan Shop
Everyone is invited to share items in good condition with Pan Kan Shop.
To be transformed into a scholarship for underprivileged children in the Nithiyuwapat Foundation.

3) "One Box One Person" Project to recycle waste into roofs which were given to Asa Puenpeung (Pa) Yamyak Foundation

Summary of the project "each box"

objective
To support waste separation
By recycling used beverage boxes
To make a roof sheet given to
Disaster Victims, Friends in
Need, offshoots, Thai Red Cross

goal
2,000 beverage boxes in "roof"
Total number of boxes
that the companies have sorted
2,921 box

**Number of roofing
sheets produced**
1.46 sheet

September 548 box
October 1,893 box
November 463 box
December 997 box

16

Internal Control and Risk Management

The Company's Board of Directors has assigned the Audit Committee to review the appropriateness and effectiveness of the internal control system put in place by the management to ensure the Company has appropriate and adequate internal control system for monitoring of its business operation to achieve the targets and to accord with the applicable laws and regulations prescribed by the Stock Exchange of Thailand (SET) and the Securities and Exchange Commission (SEC), as well as the internal control framework under the international standards of the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Board has determined to have the adequacy of the Company's internal control system assessed and reported directly to the Board at least once a year with disclosure thereof made available in the Annual Disclosure Statement (Form 56-1) and the Annual Report (Form 56-2).

The Audit Committee has constantly monitored and reviewed the Company's internal control and risk management systems, and considered the internal audit results and the auditor's opinion on the appropriateness and adequacy of the internal control system, the operating results of which shall be reported to the Board on a quarterly basis.

17

Related Transactions

1 Necessity and reasonableness of related party transactions

In 2019 the Company entered into a number of significant related party transactions with related parties. The transactions were necessary and reasonable as they were in the normal course of business operations or in support of its business. Transaction prices were determined at market or fair prices applicable to transactions with outside parties. The employee's benefit receivables, was determined referring to the actuary's valuation reports. So the amount is fair and reasonable.

The Audit Committee has reviewed such related party transactions and considered them necessary, reasonable, and beneficial to the Company.

2 Related party transaction approval measure or process

The Board of Directors' meeting no. 3/2014 on May 15, 2014 resolved to establish a policy and process for approving related party transactions between the Company 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. The Company 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 Board of Directors' or the shareholders' meeting, the Company 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:

Related party transactions with general commercial conditions

For related party transactions with general commercial conditions done between the Company and persons that have or may have conflict of interest or beneficial interest, at present or in the future, the Company 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 of Directors. 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 the Company for business operation, or commercial transaction generally done by a company 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 the Company or offered by the Company to persons in general
2. Prices and conditions offered by related persons to persons in general
3. Prices and conditions proven by the Company 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 of Directors for information. In case that the Audit Committee and the Board of Directors find out that such transaction has not been undertaken in compliance with the policy in place, they may jointly discuss to find a solution.

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 the Company and the persons that have or may have conflict of interest or beneficial interest, at present or in the future, the Company 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 of Directors 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, the Company will engage an independent expert or the Company'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 of Directors, 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.

The Company will disclose the related party transactions made by the Company in the Notes to Financial Statements audited by the Company's auditor in the Annual Report and the Annual Registration Statement (Form 56-1).

3

Policy or tendency of entering into related party transactions in future

The Company 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, the Company has no loan or facilities guarantee provided by directors and/or loan security with directors' 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 the Company. 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, the Company 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 the Company 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.

18

Management Discussion and Analysis (MD&A)

1 Overview of business operations and significant changes

As a result of trade war between the United State and China, the world economy has dramatically contracted. The report of Gross Domestic Products (GDP) in 2019 grew at 2.4%¹⁾ which has decreased from the previous year growth of 4.1%. This led to a highly competitive market as well as changes in level of competition and sustainability. Therefore, the company must set targets to keep loyal customers and also look for new customers. By introducing products to the market and increasing other rental revenue of the company's property, there was a rise in 2019 total annual revenue of 1,393.97 million baht which is higher than that of 2018 for 2.8%. In 2020, the company plans to merge in 2 warehouses into 1 warehouse guaranteed. This is to increase its potential in management and reduce its operating costs.

As of 30 July 2019, the company formed Harn Vietnam Co., as its subsidiary in Vietnam with working capital of 800 million Vietnamese Dong (equivalent to 1.06 million Thai Baht). The company obtained 100% shares in the subsidiary company. The company's primary business is selling printing equipment to increase its potential in both competitive market and customer services. At the first board of directors' meeting held on 27 February 2020, the increase in working capital of 12 million baht was decided/implemented. To secure all orders from British suppliers, the purchase contract of 0.47 million British Pound (Approximately 18.88 million Baht) has been guaranteed. This is to increase in the working capital to determinedly encourage and support businesses in Vietnam.

The impact on changes in regulation and financial standards. The company recognized the extend to employee benefits of 3.90 million Thai Baht as a result of changes in the Labour Protection Act in April 2019 which states that to those continuously work for 20 years are eligible for compensation to final wages in equivalent to 400 working days instead of 300 working days. Furthermore, the company improves the employee benefit obligations in accordance to the actuarial report as of 31 December 2019 to the total 8.84 million Thai Baht, in which 6.85 million Thai Baht presented as expenditure and 1.99 million Thai Baht presented net of tax as lose under actuarial report. Under the financial reporting standards TFR15 regarding income from contracts with customers, effectively used in 2019, to emphasis the indication of performance obligations. The company can realise the revenue from selling products and transferring control of products at a point in time. The company can also realise the revenue overtime from services type warranty and services from installation of fire suppression system. The principle followed for revenue realization is in accordance with the financial reporting standards. The company has compared its 2018 financial statements. Therefore, there are no discrepancies than that of the financial statements stated in 2019.

2 Management's Discussion and Analysis from the financial statements of the Company and Subsidiaries.

2.1 Overview Performance and Profitability of Financial Statements of the Company and Subsidiaries.

¹⁾ Data form National Economic and Social Development Board

Operating Performance for 2017 - 2019

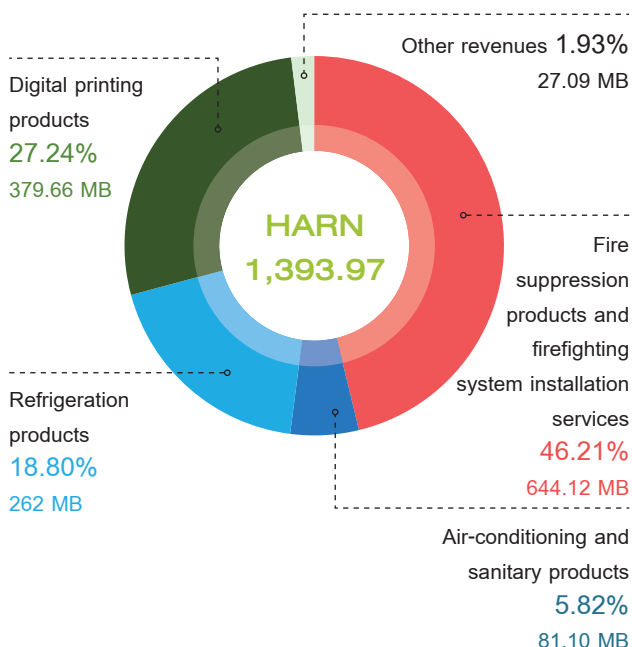
• Revenues from Sales and Services

Revenue	For the year ended December 31					
	2019		2018		2017	
	MB	%	MB	%	MB	%
Sales and Services Revenues						
1. Fire Protection Products and Projects	644.12	46.21	569.59	42.00	579.54	44.56
2. Sanitary and Air-conditioning Products	81.10	5.82	89.33	6.59	86.17	6.62
3. Refrigeration Products	262.00	18.80	320.39	23.63	312.51	24.03
4. Digital Printing Products	379.66	27.24	364.96	26.91	307.74	23.66
Total Sales and Services Revenues	1,366.88	98.07	1,344.26	99.13	1,285.96	98.87
Other Income ¹⁾	27.09	1.93	11.76	0.87	14.74	1.13
Total Revenues	1,393.97	100.00	1,356.02	100.00	1,300.70	100.00

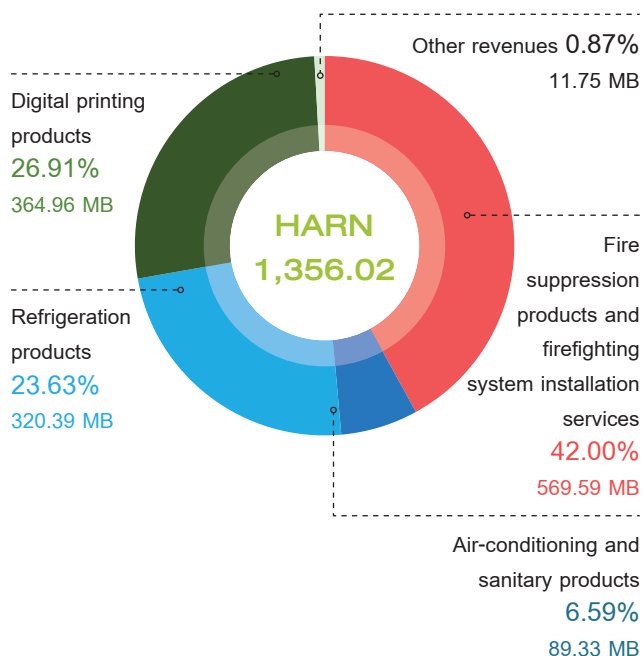
Remark : ¹⁾ Other income included gains/losses on investment in mutual funds and marketable securities, interest receivable, dividend income, and foreign exchange gains/losses, Including rental and service income from investment properties etc.

The revenue of sales and services consists of the revenue from selling the fire extinguisher system and industrial projects at 46.21%, the sanitary system and air condition at 5.82%, the refrigeration system at 18.80%, the digital printing system at 27.24% and other income of 1.93% with the total revenue between 2017 - 2019 of 1,300.70 million Baht and 1,356.02 million Baht and 1,393.97 million Baht respectively. Although the revenue from sales and services of refrigeration products have been affected from the contraction of fisheries and cooling businesses, the revenue from sales and services from other businesses have increased in comparison to previous year. This is due to the increases of new customers and new products. Additionally, the company received the revenue from rental land and warehouses which boosted other income up to 27.09 million Thai Baht from 11.76 million Thai Baht. These shapes the rise in the overall revenue from sales and services since 2018 from 1.68% and 2.8% respectively.

Revenue Structure 2019
from Financial Statements Duly Audited and Reviewed by Auditor



Revenue Structure 2018
from Financial Statements Duly Audited and Reviewed by Auditor



• Cost of Sales and Service

Costs	For the year ended December 31					
	2019		2018		2017	
	MB	%	MB	%	MB	%
Cost of Sales and Services						
1. Fire Protection Products and Projects	487.06	75.62	420.57	73.84	436.54	75.33
2. Sanitary and Air-conditioning Products	58.69	72.37	66.95	74.95	63.92	74.17
3. Refrigeration Products	174.11	66.45	220.85	68.93	216.28	69.21
4. Digital Printing Products	228.83	60.27	222.86	61.06	180.81	58.75
Total Cost of Sales and Services	948.69	69.41	931.22	69.27	897.55	69.80
Gross Profit	418.19	30.59	413.04	30.73	388.41	30.20

The significant costs of sales and services are the costs of products the import cost, transportation cost and including the salary of controlling engineers along with installation team and the contractor's fee for equipment installation, for the year 2017 to 2019 the company had cost of sales and services total 897.55, 931.22 and 948.69 million Baht respectively estimated to be 69.8%, 69.27% and 69.41% of total income from sales and services. The gross profit margin was 30.20%, 30.73% and 30.59% respectively.

Selling & Administrative Expenses

Selling & Administrative Expenses	For the year ended December 31					
	2019		2018		2017	
	MB	%	MB	%	MB	%
Selling & Administrative Expenses						
Selling Expenses	117.56	8.43	119.08	8.78	105.19	8.09
Administrative Expenses	140.78	10.10	138.20	10.19	136.83	10.52
Total Selling & Administrative Expenses	258.34	18.53	257.28	18.97	242.02	18.61
Total Revenues	1,393.97	100.00	1,356.02	100.00	1,300.70	100.00

• Selling Expenses

The Company's selling expense during the year 2017 -2019 was at 105.19 million Baht, 119.08 million Baht and 117.56 million Baht respectively. In 2019, with the rate of 8.09%, 8.78% and 8.43% of total revenue respectively, sales expenses consisted of salaries and welfare of selling staffs, commission fees, incentives, freight charges. Including sample product cost and trade shows.

• Administrative Expenses

The Company's administrative expense during the year 2017 - 2019 was at 136.83 million Baht, 138.20 million Baht and 140.78 million Baht respectively, with the rate of 10.52%, 10.19% and 10.10% of total revenues respectively. Administrative expenses consisted of salary and welfare for supporting teams, executives and board of directors, rental of buildings and warehouses, utility bills, 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. This is in accordance with the requirements of financial reporting standards which is considered as an accounting expense but does not have to pay in cash (Non-Cash Items).

The company's administrative expense has increased after considering the rise in employment benefits. This is because of changes in retirement welfare and changes in the employment termination rate. The changes in employee salary increment and reduction rate used in employment benefit obligations were under Actuarial Report as of year ending 2019.

• Net Profit

The Company earned comprehensive income between the years 2017- 2019 of 129.68 million Baht, 134.36 million Baht and 149.62 million Baht respectively. The Company's net profit margin was at 9.97%, 9.91% and 10.74% of total revenues in the respective years.

The investment of subsidiary in Vietnam under the name of Harn Vietnam Co., Ltd is to support customers who moved their factories to Vietnam and to extend customers base overseas. However, the subsidiary was still in the beginning processes of searching for new customers as well as operating. This led to the loss of 0.41 million Thai Baht. It still required helps of the holding company in term of working capital and bonds to order supplies from United Kingdom. To support its operational flow in budget intercom-pang sales, gross profit in inventory on-hand and capital listed in the subsidiary as well as shareholders were deleted in consolidated financial statements.

• Other comprehensive income (OCI)

The company obtained other comprehensive income between the years 2017-2019 of 129.64 million baht, 134.36 million baht and 147.98 million baht respectively, with the rates of other comprehensive income at 9.97%, 9.91% and 10.62% respectively. There incurred accrual losses realized under actuarial reports of 1.59 million baht (net after tax) and actuarial losses realized under exchange rate of 0.05 million baht from exchanging functional currency in the subsidiary to reporting currency in the holding company.

• Earnings Before Interest, Tax, Depreciation and Amortization (EBITDA)

EBIT and EBITDA	For the year ended December 31					
	2019		2018		2017	
	MB	%	MB	%	MB	%
Earnings Before Interest and Taxes (EBIT)	186.95	13.41	167.51	12.35	161.13	12.39
Depreciation and Amortization - normal	15.47	1.11	14.52	1.07	13.79	1.06
Depreciation and Amortization - fair value appraisal	1.25	0.09	1.83	0.13	2.24	0.17
Customer Relation Amortization - fair value appraisal	14.90	1.07	14.90	1.10	14.90	1.15
Earnings Before Interest, Taxes, Depreciation and Amortization (EBTDA)	218.57	15.68	198.76	14.66	192.06	14.77
Total Revenue	1,393.97	100.00	1,356.02	100.00	1,300.70	100.00

The Company's had earnings before interest, tax, depreciation and amortization (EBITDA) amounting in years 2017 - 2019 of 192.06 million Baht, 198.76 million Baht and 218.57 million Baht respectively, with the rate of 14.77%, 14.66% and 15.68% of total revenue respectively. The increasing amount were from increasing sales and service revenue and gross profit margin comparing to year 2018.

2.2 The Company's Assets Management Capability the Company and Subsidiaries

Financial Position Analysis as of December 31, 2017, 2018, 2019

The Company had the total assets as of December 31, between the years 2017 - 2019 of 1,457.34 million Baht, 1,548.59 million Baht and 1,596.30 million Baht respectively.

As of December 31, 2019 major assets as percentage of total assets comprised cash and temporary investment in a proportion of 15.76%, trade account, other receivables, unbilled receivables and receivables under financial lease agreements of 21.33%, inventories 19.11%, investments property accounted for 14.41% and the goodwill is 20.97% while the customer relationship is considered another intangible asset, accounting for 3.65%, both goodwill and relationships with customers had been tested for impairment in accordance with financial reporting standards annually.

As of December 31, 2018 major assets as percentage of total assets comprised cash and temporary investment in a proportion of 12.70%, trade account, other receivables, unbilled receivables and receivables under financial lease agreements of 21.24%, inventories 19.66%, investments property accounted for 14.97% consisting of vacant land at Soi Chaloe Phra Kiat, size 5-0-90 rai and land with prefabricated warehouse size 6-2-00 rai, total usable area of 5,690 square meters, total value of the project cost 231.95 million Baht (appraised by the appraiser at 238.31 million Baht) and the goodwill is 21.61% while the customer relationship is considered another intangible asset, accounting for 4.73%.

Trade and Other Receivables

Trade Receivable	As of December 31					
	2019		2018		2017	
	MB	Turn over (days)	MB	Turn over (days)	MB	Turn over (days)
Trade Receivable by Segments						
1. Fire Protection & Sanitary Products and Projects	165.65	76.88	139.86	76.79	137.36	71.80
2. Refrigeration Products	61.17	87.83	64.91	77.26	70.72	86.57
3. Digital Printing Products	61.85	57.78	58.34	56.58	54.81	66.48
Total Trade Receivable by Segments	288.67	73.68	263.11	71.42	262.89	74.12

Trade Receivable and Other Receivables	As of December 31					
	2019		2018		2017	
	MB	%	MB	%	MB	%
Trade Receivable and Others						
Trade Receivable	288.67	91.32	263.11	92.47	262.89	95.65
Other Receivable	34.73	10.99	26.90	9.45	16.24	5.91
<u>less</u> Allowance for Doubtful Accounts	(7.29)	(2.31)	(5.48)	(1.92)	(4.29)	(1.56)
Trade Receivable and Other Receivables - Net	316.11	100.00	284.53	100.00	274.84	100.00

As of December 31, 2019 The Company's account receivables can be divided into 3 products groups which are 1) Fire extinguisher, sanitary and air conditioning systems 2) Refrigeration system 3) Digital printing system with the account receivable turnover, In 2017 - 2019 (excluding other receivables and allowance for doubtful accounts) of 74.12 days, 71.42 days and 73.68 days respectively. The company could pleasantly control its ability from collecting payments from its debtors, even though the turnover for its debtors in refrigeration products was higher than that of 2018.

The Company has the allowance for doubtful accounts for estimated loss from not being able to collect payment from the debtors, which will be considered in general from past experience, the analysis of the debtors' age, Legal proceeding information includes the financial conditions of some high credit risk debtors. The company will write off uncollectable debts, over-time lawsuit and/or unenforceable cases. However, the company has been cautious and increased restriction in credit approval rules. The doubtful debt rate during the years ending 2017-2019 were at 1.56%, 1.92% and 2.31% respectively. Moreover, the company has reviewed the budget for doubtful debts under new financial reporting standards TFRS 9 regarding financial instruments to realize expected credit loss. It is considering history, current situation and expected situation for financial conditions which may affect the repayments. The company also employs external expert to review its allowance for doubtful debts as of 31 December 2019. According to the calculation under ECL model, the company's allowance for doubtful debts is relevant to the current financial situation. However, the company also increases its restriction to approve future credit by putting into consideration that Thailand's financial conditions have faced external factors, the fluctuation of Thai Baht, the trade war between the United State and China, the trade negotiation after Brexit and the COVID-19 outbreaks might impact on the debtors' capacity to repay their debts to the company in the future.

Financial lease receivables

Financial lease receivables	As of December 31					
	2019		2018		2017	
	MB	%	MB	%	MB	%
Current portion of finance lease receivables due within one year	6.84	46.12	11.79	35.81	8.78	45.61
Long-term receivables under financial lease agreements	7.99	53.88	21.13	64.19	10.47	54.39
Total Financial lease receivables	14.83	100.00	32.92	100.00	19.25	100.00

As of December 31, 2019, The Company has decreased the financial lease receivables by 18.09 million baht in comparison to year ending 2018. This was because of the repayment upon credit term or the cancellation of long-term receivables under financial lease agreement before expiration of the agreement. Customers recalled tracking barcodes on their products has led to a reduction in printing equipment leased from the company. So, customers must pay penalty fee of 50% of remaining lease. This accounts for 7.95 million baht. The company lists this transaction at other accounts receivable under accounts receivable and other accounts receivable. As for the returned printing equipment, the company lists them at the inventory on-hand which have been booked according to debtors' leasing contracts. offsetting with unrealized services income and interest.

Inventories

Finished Goods	As of December 31					
	2019		2018		2017	
	MB	Turn over (days)	MB	Turn over (days)	MB	Turn over (days)
Finished Goods by Segments						
1. Fire Protection & Sanitary Products and Projects	137.10	91.79	137.40	99.70	128.94	88.66
2. Refrigeration Products	78.61	149.21	63.75	113.58	73.70	107.25
3. Digital Printing Products	70.13	104.44	60.81	82.79	40.29	85.10
Total Finished Goods	285.84	105.38	261.96	98.95	242.93	92.42

Inventories	As of December 31					
	2019		2018		2017	
	MB	%	MB	%	MB	%
Inventories						
Finished Goods	285.84	93.71	261.96	86.05	242.93	83.40
Goods in Transit	43.59	14.29	58.62	19.26	61.75	21.20
<u>Less</u> Allowance for obsolescence and slow moving stocks	(24.39)	(8.00)	(16.14)	(5.30)	(13.41)	(4.60)
Inventories - Net	305.04	100.00	304.44	100.00	291.27	100.00

As of December 31, 2019, The Company had inventories divided into 3 products groups which are 1) Fire extinguisher, sanitary and air conditioning systems 2) Refrigeration system 3) Digital printing system with the inventory turnover (excluding goods in transit and before allowance for loss on devaluation of inventories) of 2017 - 2019 was 92.42 days and 98.95 days, 105.38 days respectively. In 2019, there is high inventory turnover in some stock. This is because customers postpone their products delivery. Some products have not yet been completed to orders as of year ending 2019.

The company has a policy to allowance for deteriorated goods or slow rotation items by setting two criteria when considering allowance for deteriorated 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, The Company believes that the condition for the allowance for deteriorated goods or slow rotation will be enough conservatism to maintain the inventory value not more than the net realizable value according to the Thai Financial Reporting Standards. However allowance for deteriorated goods or slow rotation is considered low for the year 2017 to 2019 at 4.60%, 5.30% and 8.00% respectively of the net inventory.

Investment property

Property type	Net book value (million baht)	
	As of December 31	
	2019	2018
Land	172.65	172.65
Factory Buildings	54.18	2.39
Building Improvement	0.75	55.58
Tools and equipment	2.65	0.94
Total investment property - net	229.97	231.82

According to the Board of Directors meeting No. 5/2018 on 9 November 2018, it was resolved to purchase land with warehouse size of 6-2-00 rai total amount of 117 million Baht which the warehouse consisted of 2-story reinforced concrete building with 3 booths with usable area of 5,690 square meters including a factory license (Ror Ngor 4). The land and buildings are currently rented by two renters. while the contract will be ended on 15 March 2019 (Leases can continue their contracts for 1 more year at the same rate if they notify 2 months in advance) and 30 April 2020 and when the lease contract ends, the company has a plan to relocate its warehouse from external lease and 2 related companies to the company's main distribution warehouse. This is to enhance its capacity in operation and to reduce management costs.

The company has income from rental of investment properties for the year ended 31 December 2019 and 2018 in the amount of 11.30 million Baht and 0.92 million Baht respectively and operating expenses in the amount of 2.57 million Baht and 0.13 million Baht.

Land and equipment

Property type	Net book value (million baht) As of December 31		
	2019	2018	2017
Land	-	-	114.95
Tools and equipment	2.03	1.18	1.10
Furniture and office equipment	5.70	7.94	11.06
Vehicle	11.97	11.98	11.73
Assets for rent and demonstration	10.97	11.56	11.63
Assets under construction	-	0.02	-
Total land and equipment - net	30.67	32.68	150.47

As of December 31, 2019, the company has land Building and equipment - net of 30.67 million baht. There are increases equipment and tools, vehicles and machinery for rent and demonstration according to the budget and decrease in depreciation after its usage term. For land value at 114.95 million baht listed in 2017 has been transferred into investment property. This is because there is no plan for it now.

Goodwill and customers relationship

Property Type	Net book value (million baht) As of December 31		
	2019	2018	2017
Goodwill	334.67	334.67	334.67
Customer relationship	104.31	104.31	104.31
<u>Less impairment</u>	(46.03)	(31.13)	(16.23)
Customers relationship - Net	58.28	73.18	88.08
Total Goodwill and customer related intangible	392.95	407.85	422.75

Goodwill is an intangible asset to the company. It arrives from purchase and transfer of businesses from Chillmatch Co., Ltd and QIIS Co., Ltd. It is done by issuing shares of 675.36 million baht. The swap ratio is equal to 0.67. This is to exchange for net tangible assets of both companies at fair prices of 340.69 million baht. This leads to intangible assets being valued at 334.67 million baht. 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 2019 and 2018, the company has listed value in use from expected future cashflow of cash generating unit (CGU) i.e. refrigeration products and digital printing products. Expected net cashflow in 5 years' time and changes in terminal growth rate are equal to 0%. Impairment of current value with impaired rate that is risk reflective to cash generating unit. The discount rate for the years ending 2018 and 2017 were 4.47% and 10.05% respectively. Under Capital Asset Pricing Model (CAPM), it is concluded that there is no impairment in Goodwill. This means present value of net cashflow is excess the intangible assets and other current assets of those businesses.

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 3 October 2016, the company issued policy to write off customer related intangibles with straight-line method for 7 years, regularly record total sales and sales portion, and compare total sales of each cash generating unit. This helps in impairments calculation. In conclusion, it is no impairment of customer relation in 2019.

Trade and Other Payables

Trade and Other Payables	As of December 31					
	2019		2018		2017	
	MB	Turn over (days)	MB	Turn over (days)	MB	Turn over (days)
Trade and Other Payables						
Trade Payables	104.65	44.38	128.37	45.69	109.51	41.00
Other Payables						
• Accrued Expenses	42.25	n/a	40.64	n/a	39.32	n/a
• Others	47.50	n/a	41.17	n/a	25.65	n/a
Total Trade and Other Payables	194.40	44.38	210.18	45.69	174.48	41.00

The Company has the policy to maintain the business relationship with stakeholders such as vendors both domestically and internationally, contractors for equipment installations and other trade partners. The basis of maintaining a good relationship, financial credit is considered to be very important. Other than keeping relationships, The Company can also negotiate the prices of products and services which are the most important costs and will result in sustainable profitability of The Company in the future.

Types of credit limits and interest rates

Types of credit	Facilities (Million Baht)		Interest rates (% per annum)	
	2019	2018	2019	2018
Overdraft	11.00	11.00	MOR	MOR
Letter of Credit / Trust Receipt	160.00	160.00	MLR-1, MMR	MLR-1, MMR
Letter of Guarantee	54.00	54.00	1.25 - 2%	1.65 - 2%
Forward Contract	562.39	562.39		
Promissory Note	5.00	5.00	MLR	MLR
Total	792.39	792.39		
Forward Contract (Million USD)	7.00	3.00		

In the year 2017 - 2019, The Company's liquidity level is high, as can be seen from the liquidity ratio of 4.19 times and 3.48 times and 3.98 times respectively. It accounts for the average of 3.88 times. This shows that the company is efficient in managing its liquidity and working capital. The company 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. The company has short term loan and credit to support the expansion of its businesses and/or to invest in engineering business in the future.

Foreign Exchange Risks

Currency	Imported goods in 2019		Imported goods in 2018	
	Foreign currencies	As % of import value	Foreign currencies	As % of import value
United States Dollar	9,659,953	47.23	12,338,899	53.94
Euro	4,318,729	23.40	3,337,481	17.39
Pound Sterling	4,491,826	28.03	4,734,786	27.66
Yen	14,845,600	0.67	20,778,016	0.83
Chinese Yuan	936,610	0.66	268,402	0.17
Other		0.01		0.01
		100.00		100.00

Currency	2019			2018		
	Trade account payables As of 31 Dec 2019 (Foreign)	Risk hedging		Trade account payables As of 31 Dec 2018 (Foreign)	Risk hedging	
		Forward contracts outstanding (balance)	% Proportion		Forward contracts outstanding (balance)	% Proportion
United States Dollar	1,345,940	1,236,671	91.88	1,617,842	1,293,213	79.93
Singapore Dollars	-	-	-	1,000	-	-
Euro	242,514	263,532	108.67	419,773	153,314	36.52
Pound Sterling	519,138	622,823	119.97	610,009	897,792	147.18
Yen	198,050	198,050	100.00	575,000	575,000	100.00
Chinese Yuan	5,554	-	-	-	-	-

The Company 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 and Baht movement trends. In addition at the end of 2019, the company has prepared against the risk of changes of Euro and Pound Sterling for the trading of firmed commitment because the value of the products is high and the company has issued a sales order and a customer agreeing to pay the price in Baht therefore it is considered that the company has closed an exchange rate risk for such cases completely. The company has no speculative policy from currency fluctuations because the company is not expertise in forecasting the direction of movement of money. In contrast the company desires to reduce the exchange rate risk that will affect the cash flow and pay in the future to a controlled level. Furthermore, as of year ending 2019, the company has maintained its saving in a financial institute for 1.15 million USD to leverage currency risk from overseas orders.

2.3 Liquidity and Working Capital

2.3.1 Cash Flows from The Company's Financial Statement

unit : Million Baht

Description	For the year ended December 31		
	2019	2018	2017
Net Cash Flow from Operating Activities	150.99	163.44	107.14
Net Cash Flow from (Used in) Investing Activities	40.37	(94.26)	(48.44)
Net Cash Flow from (Used in) Financing Activities	(93.52)	(81.83)	(52.61)
Effect of translation adjustment on foreign currency financial statements	(0.05)	-	-
Net Increase (Decrease) in Cash and Cash Equivalents	97.79	(12.65)	6.09
Cash and Cash Equivalents - B/F	29.31	41.96	35.87
Cash and Cash Equivalents - C/F	127.10	29.31	41.96

Analyzing the Cash Flows Statement for the year ended December 31, 2019

The Company had net cash flows from the business operation in 2019 of 150.99 million baht, an decrease 12.45 million Baht when compared to 2018, mainly due to the increase in net profit 15.26 million baht, Debtors and other debtors (before allowance for doubtful account) increased by 33.44 million baht and inventories (before allowance for stock obsolescence) increased by 8.86 million baht. This includes creditors and other creditors decreased by 15.78 million baht.

The cash flows that had been used for the investing activities in 2019 of 40.37 million baht, from cash flow from selling mutual funds of 45.74 million baht and cash flow used in buying equipment and intangible assets of 7.24 million baht.

The cash flows from investing activities for the financing activities came from the dividend declaration during 2018 at the rate of 0.16 baht per share, representing 93.52 million baht, an increase of 11.69 million baht from the previous year.

Analyzing the Cash Flows Statement for the year ended December 31, 2018

The Company had net cash flows from the business operation in 2018 of 163.44 million baht, an increase 56.30 million Baht when compared to 2017, mainly due to the increase in net profit 4.68 million baht, Trade and other payables increased by 35.71 million baht. Inventories (before allowance for stock obsolescence) increased by 15.90 million baht, Trade and other receivables (before allowance for doubtful accounts) increased by 10.88 million baht and financial lease receivables, Increased by 13.67 million baht.

The cash flows that had been used for the investing activities in 2018 of 94.26 million baht, increased from the previous year by 45.82 million baht due to the purchasing investment properties 117 million baht and from the sales of investment units net decreased 31.81 million baht

The cash flows that had been used for the financing activities came from the dividend declaration during 2018 at the rate of 0.14 baht per share, representing 81.83 million baht, an increase of 29.22 million baht from the previous year.

2.3.2 Capital Structure from the Financial Statement as of December 31, 2019, 2018, 2017

The Company had the total liabilities on the December 31, between years 2017 - 2019 of 242.66 million Baht, 281.38 million Baht and 274.64 million Baht, the significant components of the liabilities were account payables and other payables income tax, deferred tax, employment benefits etc., and other current liabilities without interest-bearing liabilities.

As of 31 December 2019, the company has total liabilities of 274.64 million baht which decreased from previous year by 6.74 million baht. Creditors decreased by 23.73 million baht and employment benefits increased by 8.84 million baht in accordance to actuarial report in debt calculation hypothesis and changes in regulations.

As of December 31, 2018 The Company's total debts were equal to 281.38 million Baht, an increase from 2017 by 38.71 million Baht, From trade accounts payables increase of 18.87 million Baht from the purchase of products in the fourth quarter in order to be sufficient to sell and advance payments for goods and services total 15.69 million Baht from the sale of products and providing installation services of high value printers.

With The Company's capital structure that does not need to rely on any bank loans this results. in The Company having no interest expense, high liquidity and low debt to equity ratio, making the Company able to payout its dividends to shareholders consistently. During 2017 - 2019, the dividends were paid at 0.14 Baht, 0.16 Baht and 0.18 Baht per share, representing the dividend payout ratio per net profit equal to 63.64%, 69.57% and 69.23% respectively, the annual dividend for 2019 is not confirmed until the approved by the Annual General Meeting of Shareholders.

2.3.3 Important ratios as of 31 December 2019, 2018, and 2017

Financial Ratio		2019	2018	2017
Debt to equity (D/E ratio)	times	0.21	0.22	0.20
Return on asset (ROA) ¹⁾	%	11.89	11.15	11.36
Return on Equity (ROE) ²⁾	%	11.43	10.83	11.02

¹⁾ Use EBIT in calculation

²⁾ Use comprehensive income in calculation

The company has low debt to equity ratio, 3 years average is at 0.21 times. This shows that capital structure is strong and doesn't need to rely on banks and other financial institutions for both short- and long-term loans. According to the financial reports' standards (TFRS16) regarding leasing agreement, will lead to a cancellation of operating leases and change to financial lease instead. This forces the company to record the right of use and lease commitment from the start date which result in a shift in debt to equity ratio and return on assets in 2020. Rental payments which have been done with straight line method will be changed to depreciation value from the real claims of assets and interest expense. However, as of the year ending 2019, the company remained the leasing agreement for warehouses and office buildings for 3 years. This result has no material impact on the return on equity and return on assets of the 2019 financial statements under TFRS 16.

The returns on asset for the years ending 2017-2019 were 11.36%, 11.15% and 11.89% respectively. This means that the company can constantly and efficiently generate its assets for profit before interests and taxes.

The return on equity for the year 2017-2019 were 11.02%, 10.83% and 11.43% respectively. This means that the company can constantly and efficiently general return to shareholders conforming the ability to pay dividend annually.

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Report of the Board of Directors' Responsibility for Financial Reports

Dear Shareholders,

The Board of Directors is responsible for the financial statements of Harn Engineering Solutions Public Company Limited ("Company's") (previously known as Fire Victor Public Company Limited) 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 regarding preparation and presentation of financial report under the Securities and Exchange Act, taking into consideration appropriate and consistent accounting policies 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.

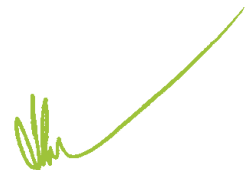
The Board of Directors has established and maintained good corporate governance and appropriate risk management and internal control systems to assure that the accounting information is correctly, completely and timely recorded, and adequate to sustain the Company's assets and prevent any fraud or any material act of irregularities.

The Board of Directors 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 efficiency. The Audit Committee's opinions on these issues are included in the Report of the Audit Committee presented in this Annual Report.

The Board of Directors is of the opinion that the internal control and internal audit of the Company can give assurance that the financial statements of Harn Engineering Solutions Public Company Limited and Subsidiary for the year ended 31 December 2019 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 Report.



Dr. Thakol Nunthirapakorn
Chairman of the Board



Mr. Wirat Sukchai
Chief Executive Officer

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Report of the Audit Committee



Dr. Thakol Nunthirapakorn

Chairman of the Audit Committee

Dear Shareholders,

The Audit Committee, appointed by the Board of Directors, is composed of three Independent Directors as follows :

- | | |
|--------------------------------|-------------------------------|
| 1. Mr. Thakol Nunthirapakorn | Chairman of Audit Committee |
| 2. Miss Voranuch Supaibulpipat | Member of the Audit Committee |
| 3. Mr. Sothitorn Mallikamas | Member of the Audit Committee |

To have accurate financial reporting

The Audit Committee is in charge of review of the Company's financial reports to ensure that they are accurate, has appropriate and effective internal control and internal audit, and its business operations are compliant with applicable laws and regulations. The Audit Committee is also responsible for propose to appoint and terminate the external auditor of the Company's, considering the Company's disclosure of information in an accurate and complete manner, and performing duty independently, with Mr. Wisit Wachiralappaitoon as the Secretary of the Audit

Committee, perform duties within the scope of duties and responsibilities under the Audit Committee Charter.

In 2019, the Audit Committee held four meetings. The three Committee members attended all the meetings held. The Audit Committee discussed and shared opinions with the management, internal auditors, and external auditor on relevant issues. Salient points can be concluded here :

1. Review of quarterly and yearly financial statements for 2019:

The Audit Committee reviewed the quarterly and annual financial statements, which were reviewed or audited by Dharmniti Auditing Co., Ltd with enquiries made with and explanation sought from the management and the auditor as regards the accuracy, completeness and compliance with the Thai Accounting Standards and Thai Financial Reporting Standards as well as the criteria of the Securities and Exchange Commission and the Stock Exchange of Thailand as appropriate in the material aspects, and as regards disclosure of information in an adequate, complete and reliable manner, for further submission to the Board of Directors for approval.

2. **Review and assessment of the adequacy of the internal control system:** The Audit Committee reviewed the internal control system and monitored the audit result, with the audit report submitted on a quarterly basis by the internal auditors from Ultima Advisory Co., Ltd. to assess the adequacy of the internal control system which would support and drive the Company toward its targets, in terms of both effectiveness and efficiency of the operations, and ensure the reliability of the financial reports and the compliance with the relevant regulations and policies of the Company.
3. **Review and consideration of related party transactions or transactions that may have conflict of interests, including disclosure of information thereof in conformity with the relevant laws and regulations of the Office of the Securities and Exchange Commission and the Stock Exchange of Thailand:** The Audit Committee is given the opinion that such transactions were carried out in a reasonable manner for the maximum benefit of the Company, and that disclosure of information thereof was accurate, complete and adequate in line with the good corporate governance practice.
4. **Review of work performance pursuant to the securities and exchange law, the regulations of the Office of the Securities and Exchange Commission and the criteria of the Stock Exchange of Thailand, as well as other laws relevant to the Company's business operations, including compliance with the Company's regulations and obligations with third parties:** In this regard, the Audit Committee did not find any significant issue of non-compliance with the law and regulations of the Stock Exchange of Thailand and relevant regulatory bodies.
5. **Selection the appointment of the Company's auditor and determination of audit fee for 2019:** The proposed appointment was proposed for the endorsement by the Board of Directors for proposal to the 2019 Annual General Meeting of Shareholders for consideration and approval.

The Audit Committee reviewed the performance and independence of the candidate, and the appropriateness of the remuneration for the auditor, and considered it proper for the Company to appoint 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 Securities and Exchange Commission. Assigned by the company as the responsible auditor

The Audit Committee is given the opinion that, in 2019, the Company maintained good corporate governance and appropriate internal control, prepared the financial statements that exhibited the factual information in material aspects adequately and accurately in compliance with the Thai Accounting Standards and Thai Financial Reporting Standards, disclosed information in conformity with the relevant laws and regulations, had Internal controls and risk management are adequate and at an acceptable level, performed in adherence to the relevant laws, rules and regulations as well as obligations, and disclosed related party transactions in an accurate and complete manner. The Audit Committee and the management attached high importance on business operations in line with the good corporate governance. No material irregularities were found that might affect the Company's financial status. The Company consistently developed and rationalized its work processes to boost quality and suit the business environment, as well as to be compliant with the rules and regulations of the Office of the Securities and Exchange Commission and the Stock Exchange of Thailand, and other laws relevant to the business operations of the Company.

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Report of the Nomination and Remuneration Committee



Miss Voranuch Supaibulpipat

Chairperson of the Nomination and
Remuneration Committee

Dear Shareholders,

The Nomination and Remuneration Committee, appointed by the Board of Directors in order to promote and support the company in compliance with the principles of good corporate governance in recruiting and developing Directors and senior executives in an appropriate proportion, has the clear and transparent recruitment and selection processes as well as a proper remuneration to support the company's performance in both short term and long term goals. The Committee consists of independent directors and non-executive director not less than three members and more than half of the Committee must be independent directors.

Currently, the Nomination and Remuneration Committee of the Company 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 |
| 2. Mr. Sothitorn Mallikamas | Member of the Nomination
and Remuneration
Committee |
| 3. Mrs. Sirima Iamsakulrat | Member of the Nomination
and Remuneration
Committee |

In 2019, Nomination and Remuneration Committee held four meetings. The three Committee members attended all the meetings held. The essence of the performance of duties can be summarized as follows :

1. Consider and propose remuneration of the Board of Directors and the sub - committees in 2019 and 2020.

Based on the company' rule, the criteria are concerned with suitability, duties and responsibilities, relating to the overall performance of the company, and remuneration data from other companies at the same business size and type to propose to the Board of Directors and seek an approval of the annual general meetings of shareholders in 2019 and 2020.

2. Consider and propose remuneration of the Chief Executive Officers and Managing Directors in 2019 and 2020.

Based on the company' rule, the criteria are concerned with duties, responsibilities, and relating to the overall performance of the company to propose to the Board of Directors and seek for approval.

3. Consider and reappoint the Directors for another term due to termination and later propose to the Board of Directors and seek an approval of the annual general meetings of shareholders in 2019 and 2020.

4. Consider and recruit a suitable candidate for the independent directors, replacing the Directors who is terminated due to retirement at 80 years old as of a fiscal year - end date.

5. Consider and propose a policy on selection and remuneration of Directors in writing in order to propose guideline and method of remuneration to the Board of Directors and the sub - committees appointed by the Board including payment and other privileges to propose to the Board of Directors and seek an approval.

6. Consider and propose a plan to recruit the Directors. The committee will apply the Board Skill Matrix to recruit a proper candidate for this position as specified by the company

and in compliance with the principles of good corporate governance and later report to the Board of Directors.

7. Consider and propose a plan to develop the Directors and senior executives. The committee will consider the suitable qualifications in business management and administration including experience, knowledge, expertise, and important business environment factors, and later report to the Board of Directors.

8. Consider the evaluation criteria and performance appraisals of the Chief Executive Officers and Managing Directors of the company. The committee will assess their leadership, strategy, planning, relationship, knowledge, and personalities and consider raising salary, later propose to the Board and seek an approval.

9. Evaluate performance of the Nomination and Remuneration Committee and report the assessment to the Board of Directors.

10. Encourage and provide opportunity for shareholders to propose agendas and nominate candidates for the Directors at least three months before the 2020 annual general meetings of shareholders via online website of the company.

In conclusion, the Nomination and Remuneration Committee has fulfilled their duties as specified in the Nomination and Remuneration Committee's Charter which has been approved by the Board of Directors, by employing their knowledge, ability with due care and independence as sufficient to provide the opinions and suggestions for the overall benefits of the Company.

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Report of the Executive Committee



Mr. Wirat Sukchai

Chairman of the Executive Committee

Dear Shareholders,

The Company's Executive Committee is composed of 5 directors and top executives as appointed by the Board of Directors as below:

- | | |
|--------------------------------|--|
| 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, Chief Operating Officer and Company Secretary |

Although Thai economy in 2019 remained volatile with risk exposures in several areas, business opportunities in overall were still seen particularly in real economic sectors such as tourism related business, public sector investment and help in expanding. Therefore, the Company has to accelerate the strengthening of the organization in all respects to ensure continued business operation and expansion towards a sustainable growth. The Executive Committee is in charge of assisting the Board of Directors in consider and scrutinize with caution. Be careful in important matters before submission to the Board of Directors for consideration, thus facilitating the Company's business operation. Mrs. Varinkan Teraumranon is the secretary to the Board of Directors performing duty within the scope of duties and responsibilities according to the Executive Committee Charter.

In 2019, the Executive Committee held altogether 12 meetings to consider significant issues of the Company, salient points of which were as concluded here:

1. **Map out business plan and strategy:** Consider the company's review the vision, mission and strategy of the company in the past year. To determine the strategy and operation plan of the company. In each business line In accordance with the vision and mission of the company by considering internal and external factors that have an impact Including acceptable opportunities and risks by delegated such plans to executives and employees at all levels in the company to know and monitor the implementation of the company's strategy In order to meet the goals set and report progress according to the strategic plan to the Board of Directors every quarter.
2. **Check and follow the Company's business operation:** Consider checking Track the performance of every business line on a monthly basis. In order to be in accordance with the policy, plan Target set including budgets that have been approved by the board of directors and report the operating results to the Board of Directors every quarter.
3. **Consider the Company's budget and investment projects:** Consider and approve the annual budget and increasing the working capital of a subsidiary company Vietnam as well as investment projects and other matters proposed by management to propose to the board of directors for approval.
4. **To consider the dividend payment for the year 2019:** Consider, screen and approve the net profit from the operation result of the year 2018 and the dividend payment

for the year 2019 is set at the rate of 0.16 baht per share to propose to the Board of Directors for approval before submitting to Annual General Meeting of Shareholders for the year 2019.

5. **Considering the recruitment of executives and department managers upward:** Consider, select, appoint, transfer, terminate employment and determine the structure, authority and framework. Person with appropriate qualifications to hold executive positions at the level of department manager up Except for the position of Chief Executive Officer and Managing Director. In the year 2019, the selection and appointment of the sales director Refrigeration System Business Division and reported to the Board of Directors.
6. **Consider nomination and recruitment of top executives:** Consider and scrutinize the compensation rate policy. Salary structure, bonuses and other benefits Suitable for staff and department manager up Except for the position of Chief Executive Officer and Managing Director.

The Executive Committee is committed to performing our duties with integrity, prudence and carefulness, being ready to develop the Company's business with full capabilities in the best interests of the Company, the shareholders and all stakeholders, and ensuring the Company has in place the operational systems that are in compliance with the law and the code of conduct under the good corporate governance so that the Company will be able to move forward towards success with stability and sustainability.

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Report of the Risk Management Committee



Dr. Supot Tiarawut

Chairman of the Risk Management Committee

Dear Shareholders,

In 2019, the Risk Management Committee performed our duties with full potential to support the Board of Directors and other committees in monitoring the Company's risk management so that the Company will be able to achieve all the business targets set forth, and to build confidence and trust among investors and stakeholders in the business operation of the Company. The Risk Management Committee, appointed by the Board of Directors, is composed of 11 directors with competence, expertise and experience as well as understanding of business operation as follows:

- | | | | |
|-----------------------------|---|--------------------------------------|---|
| 1. Mr. Supot Tiarawut | Chairman of the Risk Management Committee | 4. Mr. Pracha Phromphornchai | Member of the Risk Management Committee |
| 2. Mr. Wirat Sukchai | Member of the Risk Management Committee | 5. Mr. Rattanaphan Mukhariwattananon | Member of the Risk Management Committee |
| 3. Mr. Thammanoon Tripetchr | Member of the Risk Management Committee | 6. Mr. Suchat Suwatnodom | Member of the Risk Management Committee |
| | | 7. Mr. Sukit Litikorn | Member of the Risk Management Committee |
| | | 8. Mr. Withoon Thamee | Member of the Risk Management Committee |
| | | 9. Mr. Pongsawat Penglengpol | Member of the Risk Management Committee |
| | | 10. Mr. Wisit Wachiralappaitoon | Member of the Risk Management Committee |
| | | 11. Mrs. Varinkan Teraumranon | Member of the Risk Management Committee |

The Risk Management Committee is in charge of formulating and reviewing the Company's risk management framework, policy and procedure to suit the business operation with efficiency and in line with the Company's operational strategy and business plan, as well as supporting and developing efficient and consistent risk management at all levels across the organization in line with international standards to build up corporate risk management culture. Mrs. Varinkan Teraumranon is the secretary to the Risk Management Committee.

In 2019, the Risk Management Committee held altogether 4 meetings to consider issues with salient points as below:

1. Considered the annual risk management plan based on risk assessment prepared by the executives of all business units.
2. Prioritized risk issues and identified impacts thereof to determine risk management measures.
3. Supported and developed risk management consistently across the organization.
4. Monitored and reviewed implementation of the risk management plan to ensure compliance with the risk management policy and framework in place, with internal auditors to follow up and review risk management in a systematic and efficient manner.
5. Reviewed risk management policy regarding corruption risk to be in line with the anti-corruption framework adopted in 2018

In 2019, the Risk Management Committee organized 4 workshops, in which executives at the manager level participated to brush up on and enhance skills in risk analysis so that potential risks of each business unit is a warning signal for staff to try to truly reduce loss from their work performance. Therefore, the Risk Management Committee is of the opinion that, the Company developed its risk management system to comprehensively cover all risk factors, and had risk management undertaken continuously and in line with the changing circumstances. The Risk Management Committee met regularly to consider urgent and significant risk issues in a timely manner. This led to effectiveness in the risk management of the Company. Moreover, significant organization-level risks were managed efficiently and appropriately and controlled within the acceptable levels.

Harn Engineering Solutions Public Company Limited and subsidiaries

Report and Financial Statements

for the year ended December 31, 2019



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Auditor's Report



บริษัท สอบบัญชีธรรมนิติ จำกัด
178 อาคารธรรมนิติ ชั้น 6-7, ซอยเพ็ชรพรุ่ย
(ประตูชัย 20) ถนนประชาชื่น แขวงบางซื่อ
เขตบางซื่อ กรุงเทพมหานคร 10800
DHARMNITI AUDITING CO., LTD.
178 Dharmniti Building, 6th-7th Floor, Soi
Permsap (Prachachuen 20), Prachachuen
Road, Bangsue, Bangkok 10800
Telephone : (66) 0-2596-0500
Facsimile : (66) 0-2596-0560
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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 subsidiary (the Group), which comprise the consolidated statement of financial position as at December 31, 2019, 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, 2019, 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 subsidiary as at December 31, 2019, 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, 2019, 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.



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 four main business segments which are fire protection and projects, sanitary and air-conditioning systems, cold storage devices, and digital printing system for the year ended December 31, 2019 amounting to Baht 1,369.58 million and Baht 1,366.88 million, respectively, which have different terms and pricing conditions, including revenue from services under the fire protection installation project amounting to Baht 83.96 million and Baht 83.96 million or 6.14% and 6.13% 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, 2019. 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. 3.17 and 24, 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 20.97% and 21.04% of total assets as at December 31, 2019, 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. 3.12 which describes the accounting policies and No. 13 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 27, 2020

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Financial Statements



HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARY
STATEMENT OF FINANCIAL POSITION
AS AT DECEMBER 31, 2019

<u>ASSETS</u>				
		Baht		
		Consolidated	Separate financial statements	
		financial		
		statements		
	Note	2019	2019	2018
CURRENT ASSETS				
Cash and cash equivalents	5	127,099,721	120,123,681	29,310,563
Temporary investments	6	124,477,923	124,477,923	167,434,994
Trade and other receivables	7	316,114,477	319,085,352	284,531,945
Current portion of finance lease receivables	8	6,837,622	6,837,622	11,793,435
Unbilled receivables		9,566,298	9,566,298	11,421,369
Inventories	9	305,039,856	302,782,483	304,439,304
Other current assets		726,617	422,726	478,604
TOTAL CURRENT ASSETS		889,862,514	883,296,085	809,410,214
NON-CURRENT ASSETS				
General investment		241,845	241,845	241,845
Long-term finance lease receivables	8	7,990,909	7,990,909	21,128,666
Investment in subsidiary	10	-	1,057,444	-
Investment property	11	229,967,576	229,967,576	231,818,176
Property and equipment	12	30,666,742	30,666,742	32,680,745
Goodwill	13	334,672,061	334,672,061	334,672,061
Customer relationship	14	58,279,813	58,279,813	73,180,908
Intangible assets	15	20,947,073	20,947,073	23,979,343
Other non-current assets		23,668,992	23,668,992	21,474,503
TOTAL NON-CURRENT ASSETS		706,435,011	707,492,455	739,176,247
TOTAL ASSETS		1,596,297,525	1,590,788,540	1,548,586,461

Notes to the financial statements form an integral part of these statements


HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARY
STATEMENT OF FINANCIAL POSITION (CONT.)
AS AT DECEMBER 31, 2019
LIABILITIES AND SHAREHOLDERS' EQUITY

	Note	Baht		
		Consolidated	Separate financial statements	
		financial statements		
		2019	2019	2018
CURRENT LIABILITIES				
Trade and other payables	16	194,404,184	187,871,210	210,181,058
Income tax payable		21,183,499	21,183,499	16,064,280
Short-term provisions		1,455,735	1,455,735	384,041
Other current liabilities		6,547,394	6,545,623	6,271,500
TOTAL CURRENT LIABILITIES		223,590,812	217,056,067	232,900,879
NON-CURRENT LIABILITIES				
Deferred tax liabilities	17	2,166,298	2,166,298	9,744,962
Employee's benefit obligations	18	25,513,846	25,513,846	16,670,899
Other non-current liabilities		23,364,196	23,364,196	22,064,273
TOTAL NON-CURRENT LIABILITIES		51,044,340	51,044,340	48,480,134
TOTAL LIABILITIES		274,635,152	268,100,407	281,381,013

Notes to the financial statements form an integral part of these statements



HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARY

STATEMENT OF FINANCIAL POSITION (CONT.)

AS AT DECEMBER 31, 2019

LIABILITIES AND SHAREHOLDERS' EQUITY (CONT.)

		Baht		
		Consolidated	Separate financial statements	
		financial		
		statements		
	Note	2019	2019	2018
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
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
Premium on ordinary shares	20	776,416,427	776,416,427	776,416,427
Retained earnings				
Appropriated				
Legal reserve	21	29,225,000	29,225,000	27,068,831
Unappropriated		223,824,610	224,796,706	171,470,190
Other components of equity		(53,664)	-	-
TOTAL SHAREHOLDERS' EQUITY		1,321,662,373	1,322,688,133	1,267,205,448
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY		1,596,297,525	1,590,788,540	1,548,586,461

Notes to the financial statements form an integral part of these statements



HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARY
STATEMENT OF COMPREHENSIVE INCOME
FOR THE YEAR ENDED DECEMBER 31, 2019

	Note	Baht	
		Consolidated	Separate financial statements
		financial statements	
		2019	2019 2018
Revenues			
Revenues from sales		1,236,042,819	1,238,746,444 1,198,963,880
Revenue from rendering of services		130,840,381	130,840,381 145,302,809
Other income		27,090,896	27,089,584 11,749,984
Total revenues		1,393,974,096	1,396,676,409 1,356,016,673
Expenses			
Cost of sales		827,909,781	830,117,478 802,508,957
Cost of rendering of services		120,782,675	120,782,675 128,718,817
Selling expenses		117,556,045	117,457,878 119,078,784
Administrative expenses		140,780,321	140,401,008 138,202,799
Finance cost		-	- 341
Total expenses		1,207,028,822	1,208,759,039 1,188,509,698
Profit before income tax expenses		186,945,274	187,917,370 167,506,975
Income tax expenses	26	37,325,871	37,325,871 33,148,221
Profit for the year		149,619,403	150,591,499 134,358,754
Other comprehensive income			
Item that will not be reclassified to profit or loss:			
Actuarial gain (losses) on define employee benefit plans, net of tax	18	(1,588,878)	(1,588,878) -
		(1,588,878)	(1,588,878) -
Item that may be reclassified subsequently to profit or loss:			
Currency translation differences of the financial statement of foreign subsidiary		(53,664)	- -
		(53,664)	- -
Other comprehensive income (expense) for the year, net of tax		(1,642,542)	(1,588,878) -
Total comprehensive income for the year		147,976,861	149,002,621 134,358,754
Basic earnings per share	27		
Profit attributable to owners of the parent		0.26	0.26 0.23
Weighted average number of ordinary shares (shares)		584,500,000	584,500,000 584,500,000

Notes to the financial statements form an integral part of these statements



HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARY
STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
FOR THE YEAR ENDED DECEMBER 31, 2019

Baht						
Consolidated financial statements						
	Issued and paid-up share capital	Premium on ordinary shares	Retained earnings Appropriated legal reserve	Unappropriated	Other components of equity Currency translation differences of the financial statements of foreign subsidiary	Total shareholders' equity
Note						
Beginning balance as at January 1, 2019	292,250,000	776,416,427	27,068,831	171,470,190	-	1,267,205,448
Appropriated to legal reserve	-	-	2,156,169	(2,156,169)	-	-
Dividend	22	-	-	(93,519,936)	-	(93,519,936)
Total comprehensive income for the year						
Profit for the year	-	-	-	149,619,403	-	149,619,403
Other comprehensive income (expense) for the year						
Actuarial gain (losses) on define employee benefit plans, net of tax	-	-	-	(1,588,878)	-	(1,588,878)
Exchange difference on translating financial statements	-	-	-	-	(53,664)	(53,664)
Ending balance as at December 31, 2019	292,250,000	776,416,427	29,225,000	223,824,610	(53,664)	1,321,662,373

Notes to the financial statements form an integral part of these statements



HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARY
STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
FOR THE YEAR ENDED DECEMBER 31, 2019

Baht					
Separate financial statements					
		Issued and paid-up share capital	Premium on ordinary shares	Retained earnings Appropriated Unappropriated legal reserve	Total shareholders' equity
	Note				
Beginning balance as at January 1, 2018		292,250,000	776,416,427	20,350,894	125,659,317
Appropriated to legal reserve		-	-	6,717,937	(6,717,937)
Dividend	22	-	-	-	(81,829,944)
Total comprehensive income for the year					
Profit for the year		-	-	-	134,358,754
Other comprehensive income (expense) for the year		-	-	-	-
Ending balance as at December 31, 2018		292,250,000	776,416,427	27,068,831	171,470,190
Appropriated to legal reserve		-	-	2,156,169	(2,156,169)
Dividend	22	-	-	-	(93,519,936)
Total comprehensive income for the year					
Profit for the year		-	-	-	150,591,499
Other comprehensive income (expense) for the year		-	-	-	-
Actuarial gain (losses) on define employee benefit plans, net of tax		-	-	-	(1,588,878)
Ending balance as at December 31, 2019		292,250,000	776,416,427	29,225,000	224,796,706

Notes to the financial statements form an integral part of these statements



HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARY
STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED DECEMBER 31, 2019

	Baht		
	Consolidated	Separate financial statements	
	financial statements		
	2019	2019	2018
Cash flows from operating activities			
Profit for the year	149,619,403	150,591,499	134,358,754
Adjustment to reconcile profit for the year to net cash provided by (used in) operating activities :			
Allowance for doubtful account (reversal)	1,811,036	1,811,036	1,184,750
Depreciation and amortization	16,721,518	16,721,518	16,358,023
Amortization of customer relationship	14,901,095	14,901,095	14,901,094
Loss on devaluation of inventories	8,256,642	8,256,642	2,724,182
(Gain) loss on disposals of equipment	(662,322)	(662,322)	(156,674)
Unrealized (gain) loss on exchange rate	210,302	210,302	(389,504)
(Gain) loss on disposals of investment	(902,711)	(902,711)	(1,827,324)
Unrealized (gain) loss on revaluation of temporary investments	(1,654,472)	(1,654,472)	1,706,493
Interest income	(436,931)	(436,931)	(95,676)
Employee's benefit expenses	7,485,849	7,485,849	1,772,906
Finance cost	-	-	341
Income tax expense	37,325,871	37,325,871	33,148,221
Profit from operating before changes in operating assets and liabilities	232,675,280	233,647,376	203,685,586
(Increase) decrease in operating assets			
Trade and other receivables	(33,444,591)	(36,415,466)	(10,860,744)
Finance lease receivables	18,093,570	18,093,570	(13,665,530)
Unbilled receivables	1,855,071	1,855,071	455,380
Inventories	(12,385,768)	(10,128,394)	(20,268,938)
Other current assets	(248,013)	55,877	430,483
Other non-current assets	(2,194,489)	(2,194,489)	(4,123,139)

Notes to the financial statements form an integral part of these statements



HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARY

STATEMENT OF CASH FLOWS (CONT.)

FOR THE YEAR ENDED DECEMBER 31, 2019

	Baht		
	Consolidated	Separate financial statements	
	financial statements		
	2019	2019	2018
Increase (decrease) in operating liabilities			
Trade and other payables	(15,985,061)	(22,518,035)	39,699,501
Short-term provisions	1,071,693	1,071,693	384,041
Other current liabilities	274,123	274,123	455,145
Employee's benefit obligations	(629,000)	(629,000)	-
Other non-current liabilities	1,301,694	1,299,923	5,517,698
Cash generated (paid) from operating	190,384,509	184,412,249	201,709,483
Interest paid	-	-	(341)
Income tax paid	(39,388,096)	(39,388,096)	(38,268,022)
Net cash provided by (used in) operating activities	150,996,413	145,024,153	163,441,120
Cash flows from investing activities			
Cash payments for purchase of temporary investments	(184,555,615)	(184,555,615)	(380,170,447)
Cash receipts from redemption of temporary investments	230,299,806	230,299,806	411,975,543
Cash payment for acquisition of investment in subsidiary	-	(1,057,444)	-
Cash payments for purchase of investment property	-	-	(117,000,000)
Cash payments for purchase of equipment	(5,868,717)	(5,868,717)	(7,460,653)
Cash receipts from disposal of equipment	1,654,429	1,654,429	2,727,685
Cash payments for purchases of intangible assets	(1,370,553)	(1,370,553)	(4,424,415)
Interest received	206,995	206,995	95,676
Net cash provided by (used in) investing activities	40,366,345	39,308,901	(94,256,611)
Cash flows from financing activities			
Dividend paid	(93,519,936)	(93,519,936)	(81,829,944)
Net cash provided by (used in) financing activities	(93,519,936)	(93,519,936)	(81,829,944)

Notes to the financial statements form an integral part of these statements



HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARY

STATEMENT OF CASH FLOWS (CONT.)

FOR THE YEAR ENDED DECEMBER 31, 2019

	Baht		
	Consolidated	Separate financial statements	
	financial statements		
	2019	2019	2018
Net increase (decrease) in cash and cash equivalents	97,842,822	90,813,118	(12,645,435)
Cash and cash equivalents at beginning of year	29,310,563	29,310,563	41,955,998
Effect of translation adjustment on foreign currency	(53,664)	-	-
financial statements	127,099,721	120,123,681	29,310,563
Cash and cash equivalents at end of year			

Supplemental disclosures of cash flows information :

Non-Cash transaction

Liabilities incurred from acquisition of equipment and intangible assets

Liabilities incurred from acquisition of equipment

and intangible assets - beginning of year	426,371	426,371	4,045,276
Inventories transferred to equipment	(3,748,221)	(3,748,221)	(5,352,797)
Equipment transferred to expense	(219,646)	(219,646)	(239,526)
<u>Add</u> Purchases of equipment and intangible assets	11,036,399	11,036,399	130,858,486
<u>Less</u> Cash payments	(7,239,270)	(7,239,270)	(128,885,068)
Liabilities incurred from acquisition of			
fixed assets and intangible assets - ending of year	255,633	255,633	426,371

Notes to the financial statements form an integral part of these statements

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Notes to the Financial Statements


HARN ENGINEERING SOLUTIONS PUBLIC COMPANY LIMITED AND ITS SUBSIDIARY
NOTES TO THE FINANCIAL STATEMENTS
DECEMBER 31, 2019
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: 19/20-22 Soi Soonvijai, Rama 9 Road, Bangkapi, Huaykwang, Bangkok 10310, Thailand.

Subsidiary

Harn Vietnam Company Limited “subsidiary” 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

(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’s principal business is sale of printing equipment.

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 subsidiary as follows;

Company name	Type of business	Percentage of shareholding	Country of establishment
		% of share capital	
		As at December 31, 2019	
Direct shareholding			
Harn Vietnam Co., Ltd.	Printing equipment	100.00	Vietnam

The Company had purchased the investment in Harn Vietnam Co., Ltd. at 100% of total number of shares 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.

- 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 Subsidiary 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 subsidiary 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 subsidiary 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 (revised 2018) and new financial reporting standards and interpretations, which are effective for fiscal years beginning on or after January 1, 2019. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards with most of the changes and clarifications directed towards disclosures in the notes to financial statements. The adoption of these financial reporting standards does not have any significant impact on the Company and its subsidiaries' financial statements.



2.4 Financial reporting standards that will become effective in the future

The Federation of Accounting Professions issued a number of new and revised financial reporting standards and interpretations, which are effective for fiscal years beginning on or after January 1, 2020. 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. Except, the new standard involves changes to key principles, as summarized below.

Financial reporting standards related to financial instruments:

A set of TFRSs related to financial instruments, which consists of five accounting standards and interpretations, as follows:

Financial Reporting Standards:

TFRS 7	Financial Instruments: Disclosures
TFRS 9	Financial Instruments

Accounting standard:

TAS 32	Financial Instruments: Presentation
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Financial Reporting Standard Interpretations:

TFRIC 16	Hedges of a Net Investment in a Foreign Operation
TFRIC 19	Extinguishing Financial Liabilities with Equity Instruments

These TFRSs related to financial instruments make stipulations relating to the classification of financial instruments and their measurement at fair value or amortized cost (taking into account the type of instrument, the characteristics of the contractual cash flows and the Company's business model), calculation of impairment using the expected credit loss method, and hedge accounting. These include stipulations regarding the presentation and disclosure of financial instruments. When the TFRSs related to financial instruments are effective, some accounting standards, interpretations and guidance which are currently effective will be cancelled.

TFRS 16 Leases

These TFRSs supersedes TAS 17 Leases together with related Interpretations. The standard sets out the principles for the recognition, measurement, presentation and disclosure of leases, and requires a lessee to recognize assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is low value.

Accounting by lessors under TFRS 16 is substantially unchanged from TAS 17. Lessors will continue to classify leases as either operating or finance leases using similar principles to those used under TAS 17.

The management of the Company and its subsidiary are currently evaluating the impact of these standards to the financial statements in the year when they are adopted.



3. SIGNIFICANT ACCOUNTING POLICIES

3.1 Business combinations

The Company and its subsidiary applies the acquisition method for all business combinations except for the business combination under common control.

The Company's and its subsidiary'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 subsidiary to the previous owners of the acquiree, and equity interests issued by the Company and its subsidiary. 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 subsidiary measures any non-controlling interest at its proportionate interest in the identifiable net assets of the acquiree.

Transaction costs that the Company and its subsidiary 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 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. Further details of financial instruments are disclosed in Note 30.

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 and other comprehensive income.

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 Hedge accounting

Fair value hedges accounting

Where a derivative financial instrument hedges the changes in fair value of a recognized asset, liability or unrecognized firm commitment, any gain or loss on re-measuring the fair value or foreign currency component of the hedging instrument is recognized as income or expense or in statement of profit or loss and other comprehensive income. The hedged item is also stated at fair value in respect of the risk being hedged.

Hedge accounting is discontinued when the Company and its subsidiary revokes the hedging relationship, the hedging instrument expires or is sold, terminated, or exercised, or no longer qualified for hedge accounting. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was deferred in equity is recognized immediately in profit or loss in the statement of profit or loss and other comprehensive income.

3.5 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.

3.6 Temporary investments

Investments held for trading are stated at fair value, with any resultant gain or loss from revaluation recognized in profit or loss.

Investment in debt securities which the Company intent and able to hold investment to maturity. Investment in debt securities is stated at amortization cost net from impairment loss (if any). Interest income is recognized by using the effective interest rate method in statement of comprehensive income. Unit trust is stated at fair value which announced by the fund management company

Cost of investment sold during the year are calculated using the weighted average cost method.



3.7 Trade and other receivables

Trade and other receivables are stated at their invoice value less allowance for doubtful accounts.

Allowance for doubtful accounts is an estimation of those amounts, which may prove to be uncollectible, based on historical collection experience and review of the current status of existing receivables. Bad debts are written off when incurred.

3.8 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.

3.9 Investments in subsidiary

Subsidiary 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 subsidiary 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.

3.10 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.



3.11 Equipment

Recognition and measurement

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 subsidiary, 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
Tool and equipment	5
Furniture and office equipment	5
Vehicles	5 - 7
Assets for rental and demonstration	5

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.



3.12 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 subsidiary assess an impairment of goodwill annually, without consideration of indication that such goodwill may be impaired.

3.13 Intangible asset

Other intangible assets

Other intangible asset, which are acquired by the Company and its subsidiary 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.

3.14 Impairment of assets

The carrying amounts of the Company's and its subsidiary'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.

3.15 Lease

Operating Lease

Leases not transferring a significant portion of the risks and rewards of ownership to the lessee are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) are charged to the statements of comprehensive income on a straight-line basis over the period of the lease.

When an operating lease is terminated before the lease period has expired, any payment required to be made to the lessor by way of penalty is recognized as an expense in the period in which termination takes place.

Financial lease

Lease in which substantially all the risks and rewards of ownership other than legal title are transferred to the Company and its subsidiary are accounted for as financial lease. At inception, the fair value of the leased assets is recorded together with the obligation. The leased assets are depreciated using the straight-line method over their estimated useful lives. Interest or finance charge and depreciation are recognized as expenses in the statements of profit or loss and other comprehensive income.



3.16 Employee benefits

Short-term benefits

The Company and its subsidiary 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 subsidiary 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 subsidiary recognizes all actuarial gains (losses) immediately in other comprehensive income.

3.17 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 subsidiary may not be able to reasonably measure the outcome of a performance obligation, but the Company and its subsidiary expect to recover the costs incurred in satisfying the performance obligation. In those circumstances, the Company and its subsidiary 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.

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 subsidiary 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.

3.18 Expenses

Expenses are recognized in the statement of profit or loss and other comprehensive income on an accrual basis.



3.19 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.

3.20 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 subsidiary 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 subsidiary 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.

3.21 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.

3.22 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, except for share-based payment transactions that are within the scope of TFRS 2 (Revised 2018), leasing transactions that are within the scope of TAS 17 (Revised 2018), and measurements that have some similarities to fair value but are not fair value, such as net realizable value in TAS 2 (Revised 2018) or value in use in TAS 36 (Revised 2018).

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.



3.23 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 subsidiary 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 subsidiary 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 subsidiary 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 based upon, among other things, past collection history, aging profile of outstanding debts and the prevailing economic condition.

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 subsidiary 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

Management applies judgement in estimating the loss they expect to be realised on each installation, based on estimates of anticipated costs that take into account the progress of the project and actual costs incurred to date, together with fluctuations in costs of installation materials, labour and the current situation.

Provision for penalty from delay delivery

The Company and its subsidiary 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 subsidiary have recorded provision for penalty from delay delivery in the financial statements. However, actual results could differ from the estimates.

Classification of leases

In determining whether a lease should be classified as an operating lease or finance lease, the Company and its subsidiary are management has to use judgement to determine whether significant risk and rewards of ownership of the leased asset has been transferred, taking into consideration terms and conditions of the arrangement.

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/Depreciation

In determining depreciation of plant and equipment, 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 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 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 subsidiary 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 18.

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.

(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 subsidiary use market-observable data to the extent it is available. Where Level 1 inputs are not available, the Company and its subsidiary 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 29.



4. RELATED PARTY TRANSACTIONS

The Company and its subsidiary 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.

Types of relationship of related parties were as follows :

Company/Person name	Country/ Nationality	Related	Relationship
Harn Vietnam Co., Ltd.	Vietnam	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
Throughwave (Thailand) Co., Ltd.	Thailand	Related company	Close members of the director's family
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

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



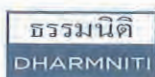
Significant agreements with related parties

The Company and its subsidiary entered into office building rental agreement as follows:

As at December 31, 2019			
	Lessor	Period	Rate per month (Baht)
Office rental agreement	Mr. Jain Charnnarong	3.6 years	53,100
	Harn Engineering Co., Ltd.	3.6 years	413,916
Warehouse rental agreement	Phraboriban Co., Ltd.	3 years	280,900

Balances with the related parties as at December 31, 2019 and 2018 consisted of:

		Baht		
		Consolidated financial statements	Separate financial statements	
		2019	2019	2018
Trade and other receivables				
Subsidiary				
	Harn Vietnam Co., Ltd.	-	3,238,895	-
Related company				
	Harn Engineering Co., Ltd.	1,852,022	1,852,022	2,336,218
		<u>1,852,022</u>	<u>5,150,917</u>	<u>2,336,218</u>
Deposit				
Related company				
	Throughwave (Thailand) Co., Ltd.	<u>5,229,668</u>	<u>5,090,668</u>	<u>-</u>
Other payable				
Related company				
	Throughwave (Thailand) Co., Ltd.	<u>2,988,382</u>	<u>2,988,382</u>	<u>-</u>



Transactions for the years ended December 31, 2019 and 2018 with related parties were summarized as follows:

	Baht		
	Consolidated	Separate financial statements	
	financial statements		
	2019	2019	2018
Sale of goods			
Subsidiary			
Harn Vietnam Co., Ltd.	-	3,190,895	-
Purchase of equipment			
Related company			
Harn Engineering Co., Ltd.	-	-	284,673
Throughwave (Thailand) Co., Ltd.	484,000	484,000	-
	484,000	484,000	284,673
Office rental and service expenses			
Related company			
Harn Engineering Co., Ltd.	5,902,872	5,902,872	5,987,952
Related person			
Mr. Jain Charnnarong	637,200	637,200	637,200
	6,540,072	6,540,072	6,625,152
Warehouse rental expenses			
Related company			
Phraboriban Co., Ltd.	3,370,800	3,370,800	1,404,500
Related person			
Mrs. Sirima Iamsakulrat	-	-	1,966,300
	3,370,800	3,370,800	3,370,800
Directors remuneration			
Directors remuneration	3,955,000	3,955,000	3,970,000
Management benefit expenses			
Shot-term employee's benefits	10,184,187	10,184,187	12,059,930
Post-employment benefits	342,142	342,142	425,795
	14,481,329	14,481,329	16,455,725

Management benefit expenses represents the benefits paid to the Company and its subsidiary are management and directors such as salaries, related benefit and directors' remuneration, including the benefit paid by other means. The Company and its subsidiary 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.



5. CASH AND CASH EQUIVALENTS

Cash and cash equivalents were consisted of:

		Foreign currencies		Baht	
		Consolidated financial statements	Separate financial statement	Consolidated financial statements	Separate financial statement
		2019	2019	2019	2018
Cash on hand	- Baht			160,905	118,915
Cash at banks					
Current accounts - Baht				21,491,132	3,758,241
Savings accounts - Baht				98,471,644	25,433,407
	- Vietnamese Dong	5,391,066,665	-	6,976,040	-
				127,099,721	29,310,563

6. TEMPORARY INVESTMENTS

Temporary investments were consisted of:

		Baht		
		Consolidated financial statements/ Separate financial statements		
		2019		
		Cost value	Unrealized gain (loss) on revaluation of investments	Fair value
Trading securities				
- Investment in Bond				
Bank of Thailand		59,585,551	35,204	59,620,755
- Investment in units		63,129,353	1,727,815	64,857,168
Total		122,714,904	1,763,019	124,477,923
		Baht		
		Separate financial statements		
		2018		
		Cost value	Unrealized gain (loss) on revaluation of investments	Fair value
Trading securities				
- Investment units		167,326,447	108,547	167,434,994
- Investments in listed securities		2,989	-	2,989
Less Allowance for diminution in value of investment		(2,989)	-	(2,989)
Total		167,326,447	108,547	167,434,994



7. TRADE AND OTHER RECEIVABLES

Trade and other receivables were consisted of:

	Baht		
	Consolidated	Separate financial statements	
	financial statements		
	2019	2019	2018
Trade receivable			
Trade receivables - subsidiary	-	3,238,895	-
Trade receivables - other companies	288,666,770	288,435,152	263,108,696
Total	288,666,770	291,674,047	263,108,696
<u>Less</u> Allowance for doubtful accounts	(7,286,049)	(7,286,049)	(5,475,013)
Net	281,380,721	284,387,998	257,633,683
Other receivables			
Other receivables - related parties	1,852,022	1,852,022	2,336,218
Other receivables - other companies	8,853,168	8,853,168	1,157,930
Accrued retentions	9,527,045	9,527,045	9,457,971
Deposit	8,762,613	8,746,087	9,595,215
Prepaid expenses	4,674,077	4,654,201	3,677,167
Accrued income	1,064,831	1,064,831	673,761
Total other receivables	34,733,756	34,697,354	26,898,262
Total trade and other receivables	316,114,477	319,085,352	284,531,945

Trade receivables are classified by aging as follows:

	Baht		
	Consolidated	Separate financial statements	
	financial statements		
	2019	2019	2018
Current	187,039,492	186,855,915	171,737,088
Overdue			
Less than 3 months	83,826,501	87,017,355	81,579,532
Over 3 months up to 6 months	8,308,446	8,308,446	5,357,886
Over 6 months up to 12 months	5,356,651	5,356,651	804,084
Over 12 months	4,135,680	4,135,680	3,630,106
Total	288,666,770	291,674,047	263,108,696
<u>Less</u> Allowance for doubtful account	(7,286,049)	(7,286,049)	(5,475,013)
Trade receivables, net	281,380,721	284,387,998	257,633,683



8. FINANCE LEASE RECEIVABLES

Finance lease receivables were consisted of:

	Baht		
	Consolidated	Separate financial statements	
	financial statements		
	2019	2019	2018
Finance lease receivables - printing devices	14,828,531	14,828,531	32,922,101
<u>Less</u> Current portion	(6,837,622)	(6,837,622)	(11,793,435)
Long-term finance lease receivables	7,990,909	7,990,909	21,128,666

The minimum lease payments and present value of minimum lease payments which receivable will be paid under the financial lease agreements as at December 31, 2019 and 2018, are as follows:

	Baht	
	Consolidated financial statements	
	2019	
	Minimum lease payments	Present value of minimum lease payments
Collection period		
Within 1 year	8,413,838	6,837,622
Over 1 year but less than 5 years	9,936,769	7,990,909
	18,350,607	14,828,531
<u>Less</u> Deferred interest	(3,522,076)	-
	14,828,531	14,828,531

	Baht			
	Separate financial statements			
	2019		2018	
	Minimum lease payments	Present value of minimum lease payments	Minimum lease payments	Present value of minimum lease payments
Collection period				
Within 1 year	8,413,838	6,837,622	16,521,656	11,793,435
Over 1 year but less than 5 years	9,936,769	7,990,909	30,963,874	21,128,666
	18,350,607	14,828,531	47,485,530	32,922,101
<u>Less</u> Deferred interest	(3,522,076)	-	(14,563,429)	-
	14,828,531	14,828,531	32,922,101	32,922,101



9. INVENTORIES

Inventories were consisted of:

	Baht		
	Consolidated	Separate financial statements	
	financial statements		
	2019	2019	2018
Finished goods	285,842,722	283,585,349	261,955,093
Goods in transit	43,591,076	43,591,076	58,621,511
Total	329,433,798	327,176,425	320,576,604
<u>Less</u> Allowance for loss on devaluation of inventories	(24,393,942)	(24,393,942)	(16,137,300)
Net	305,039,856	302,782,483	304,439,304

Decline in value of inventory recognized as cost of goods sold for the years ended December 31, 2019 and 2018 were Baht 8.27 million and Baht 3.21 million, respectively (for the Company's only amounting to Baht 8.27 million and Baht 3.21 million, respectively).

10. INVESTMENT IN SUBSIDIARY

Investment in subsidiary consisted of:

Subsidiary	Paid-up capital	Percentage of shareholding (%)	Baht
			Separate financial statements
			Cost method
		2019	2019
Harn Vietnam Co., Ltd.	Vietnamese Dong 800 million	100.00	1,057,444
Total			1,057,444

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.



11. INVESTMENT PROPERTY

Investment property were consisted of:

	Baht				
	Consolidated financial statements/Separate financial statements				
	Balance	Transactions during the year			Balance
	Dec. 31, 2018	Additions	Decrease	Transfer in/out	Dec. 31, 2019
<u>Cost</u>					
Land	172,645,421	-	-	-	172,645,421
Factory building	55,675,068	-	-	-	55,675,068
Building improvements	2,671,760	-	-	-	2,671,760
Tool and equipment	957,751	-	-	-	957,751
Total	231,950,000	-	-	-	231,950,000
<u>Accumulated depreciation</u>					
Factory building	(99,147)	(1,391,877)	-	-	(1,491,024)
Building improvements	(19,032)	(267,176)	-	-	(286,208)
Tool and equipment	(13,645)	(191,547)	-	-	(205,192)
Total	(131,824)	(1,850,600)	-	-	(1,982,424)
Investment property-net	231,818,176				229,967,576

	Baht				
	Separate financial statements				
	Balance	Transactions during the year			Balance
	Dec. 31, 2017	Additions	Decrease	Transfer in/out	Dec. 31, 2018
<u>Cost</u>					
Land	-	57,695,421	-	114,950,000	172,645,421
Factory building	-	55,675,068	-	-	55,675,068
Building improvements	-	2,671,760	-	-	2,671,760
Tool and equipment	-	957,751	-	-	957,751
Total	-	117,000,000	-	114,950,000	231,950,000
<u>Accumulated depreciation</u>					
Factory building	-	(99,147)	-	-	(99,147)
Building improvements	-	(19,032)	-	-	(19,032)
Tool and equipment	-	(13,645)	-	-	(13,645)
Total	-	(131,824)	-	-	(131,824)
Investment property-net	-				231,818,176

	Baht		
	Consolidated	Separate financial statements	
	financial	2019	2018
	statements		
Depreciation for the years			
- selling and administrative expenses	1,850,600	1,850,600	131,824



During the year 2018, the Company has changed its objective for land holding from previously determined future use to be as held for capital appreciation. Therefore, the Company transferred such owner-occupied land as investment property with the cost at Baht 114.95 million. Moreover, the Company was appraised by an independent appraiser by applying the market price approach in the valuation. According to the report dated September 17, 2018, investment property had its fair value in the amount of Baht 117.04 million.

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. However, currently such land and building have two renters. 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) and April 30, 2020.

The Company and its subsidiary had rental incomes of investment property for the year ended December 31, 2019 and 2018 in total amounting of Baht 11,300,180 and Baht 922,886, respectively (for the Company's only amounting to Baht 11,300,180 and Baht 922,886, respectively) and recognized as operating expenses amounting to Baht 2,567,033 and Baht 131,824, respectively (for the Company's only amounting to Baht 2,567,033 and Baht 131,824, respectively).

12. PROPERTY, AND EQUIPMENT

Property, and equipment were consisted of:

	Baht				
	Consolidated financial statements/Separate financial statements				
	Balance	Transactions during the year			Balance
	Dec. 31, 2018	Additions	Decrease	Transfer in/out	Dec. 31, 2019
<u>Cost</u>					
Land	4,180,434	1,307,299	(81,000)		5,406,733
Tool and equipment	25,645,470	982,782	(452,219)	506,430	26,682,463
Furniture and office equipment	25,432,035	3,163,849	(4,092,160)		24,503,724
Vehicles	37,678,779	3,812,274	(1,438,715)	19,642	40,071,980
Assets in progress	22,430	503,642	-	(526,072)	-
Total	92,959,148	9,769,846	(6,064,094)	-	96,664,900
<u>Accumulated depreciation</u>					
Tool and equipment	(3,005,043)	(457,165)	80,999	-	(3,381,209)
Furniture and office equipment	(17,707,097)	(3,721,711)	447,178	-	(20,981,630)
Vehicles	(13,447,522)	(2,220,282)	3,131,862	-	(12,535,942)
Assets for rental and demonstration	(26,118,741)	(4,172,938)	1,192,302	-	(29,099,377)
Total	(60,278,403)	(10,572,096)	4,852,341	-	(65,998,158)
Property and equipment-net	32,680,745				30,666,742



	Baht				
	Separate financial statements				
	Balance	Transactions during the year			Balance
	Dec. 31, 2017	Additions	Decrease	Transfer in/out	Dec. 31, 2018
<u>Cost</u>					
Land	114,950,000	-	-	(114,950,000)	-
Tool and equipment	3,686,673	624,263	(142,283)	11,781	4,180,434
Furniture and office equipment	24,913,580	1,757,113	(1,025,223)	-	25,645,470
Vehicles	26,130,288	4,661,404	(5,359,657)	-	25,432,035
Assets for rental and demonstration	36,680,064	5,838,956	(4,840,241)	-	37,678,779
Asset in progress	-	34,211	-	(11,781)	22,430
Total	206,360,605	12,915,947	(11,367,404)	(114,950,000)	92,959,148
<u>Accumulated depreciation</u>					
Tool and equipment	(2,590,154)	(553,771)	138,882	-	(3,005,043)
Furniture and office equipment	(13,855,517)	(4,599,305)	747,725	-	(17,707,097)
Vehicles	(14,396,823)	(2,381,448)	3,330,749	-	(13,447,522)
Assets for rental and demonstration	(25,049,860)	(4,427,130)	3,358,249	-	(26,118,741)
Total	(55,892,354)	(11,961,654)	7,575,605	-	(60,278,403)
Property and equipment-net	150,468,251				32,680,745

	Baht		
	Consolidate	Separate financial statements	
	financial		
	statements	2019	2018
Depreciation for the years			
- cost of sale	3,777,903	3,777,903	4,189,592
- selling and administrative expenses	6,794,193	6,794,193	7,772,062
Total	10,572,096	10,572,096	11,961,654

As at December 31, 2019 and 2018, the Company and its subsidiary had equipment which were fully depreciated but still in use with the cost price of Baht 34.60 million and Baht 27.69 million, respectively (for the Company's only amounting to Baht 34.60 million and Baht 27.69 million, respectively).

According to the minutes of the Board of Directors' Meeting No.4/2017 dated October 18, 2017, it had a unanimous resolution to approve purchasing land size 5 - 0 - 90 rai, amounted Baht 114.95 million which is located in Tambon Dok Mai (North Samrong) Praveth (Prakhanong) Bangkok to increase the warehouse center management efficiency, and the ownership already transferred at Land Department is on October 30, 2017. During the year 2018, the Company has transferred the such land to become investment property (Note 11).



13. 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, 2019 and 2018, 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.

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
	2019	2018	
- Discount rate	4.47% (Weighted Average Cost of Capital: WACC)	10.05% (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

14. CUSTOMER RELATIONSHIP

Customer relationship were consisted of:

	Baht			
	Consolidated financial statements / Separate financial statements			
	Balance	Transactions during the year		Balance
	Dec. 31, 2018	Addition	Decrease	Dec. 31, 2019
<u>Cost</u>				
Customer relationship	104,307,663	-	-	104,307,663
<u>Less</u> accumulated amortization	(31,126,755)	(14,901,095)	-	(46,027,850)
Customer relationship - net	<u>73,180,908</u>			<u>58,279,813</u>

	Baht			
	Separate financial statements			
	Balance	Transactions during the year		Balance
	Dec. 31, 2017	Addition	Decrease	Dec. 31, 2018
<u>Cost</u>				
Customer relationship	104,307,663	-	-	104,307,663
<u>Less</u> accumulated amortization	(16,225,661)	(14,901,094)	-	(31,126,755)
Customer relationship - net	<u>88,082,002</u>			<u>73,180,908</u>



	Baht		
	Consolidated financial statement	Separate financial statement	
	2019	2019	2018
Amortization cost for the years - selling expenses	14,901,095	14,901,095	14,901,094

15. INTANGIBLE ASSET

Intangible asset were consisted of:

	Baht			
	Consolidated financial statements / Separate financial statements			
	Balance	Transactions during the year		
	Dec. 31, 2018	Addition	Decrease	Balance Dec. 31, 2019
				In / out
<u>Cost</u>				
Software licenses	37,571,664	463,600	-	38,035,264
Software in progress	104,000	802,952	-	906,952
Total	37,675,664	1,266,552	-	38,942,216
<u>Less Accumulated amortization</u>				
Software licenses	(13,696,321)	(4,298,822)	-	(17,995,143)
Total	(13,696,321)	(4,298,822)	-	(17,995,143)
Intangible asset-net	23,979,343			20,947,073

	Baht			
	Separate financial statements			
	Balance	Transactions during the year		
	Dec. 31, 2017	Addition	Decrease	Balance Dec. 31, 2018
				In / out
<u>Cost</u>				
Software licenses	36,323,635	495,729	-	37,571,664
Software in progress	409,490	446,810	-	104,000
Total	36,733,125	942,539	-	37,675,664
<u>Less Accumulated amortization</u>				
Software licenses	(9,431,776)	(4,264,545)	-	(13,696,321)
Total	(9,431,776)	(4,264,545)	-	(13,696,321)
Intangible asset-net	27,301,349			23,979,343



	Baht		
	Consolidate financial statements	Separate financial statements	
	2019	2019	2018
Amortization cost for the years			
- cost of sale	832,181	832,181	766,137
- selling and administrative expenses	3,466,641	3,466,641	3,498,408
Total	4,298,822	4,298,822	4,264,545

As at December 31, 2019 and 2018, the Company and its subsidiary had intangible assets which were fully depreciated but still in use with the cost price of Baht 1.96 million and Baht 1.05 million, respectively (for the Company's only amounting to Baht 1.96 million and Baht 1.05 million, respectively).

16. TRADE AND OTHER PAYABLES

Trade and other payables were consisted of:

	Baht		
	Consolidated financial statements	Separate financial statements	
	2019	2019	2018
Trade payables			
Trade payables - other companies	104,648,825	104,648,825	128,374,706
Other payables			
Accrued commission expenses	16,746,476	16,746,476	15,545,412
Accrued bonus	18,568,265	18,568,265	17,851,309
Advance from customers for goods and services	34,517,307	28,141,860	29,354,624
Other accrued expenses	16,005,979	15,848,452	13,602,482
Other	3,917,332	3,917,332	5,452,525
Total	89,755,359	83,222,385	81,806,352
Total trade and other payables	194,404,184	187,871,210	210,181,058



17. DEFERRED TAX ASSETS AND DEFERRED TAX LIABILITIES

Changes in deferred tax assets and deferred tax liabilities for the years ended December 31, 2019 and 2018 were summarized as follows:

	Baht			
	Consolidated financial statements/Separate financial statements			
	Balance as at	Income (expenses) during the year		Balance as at
	Dec. 31, 2018	In profit or loss	In other comprehensive income	Dec. 31, 2019
Deferred tax assets:				
Allowance for doubtful accounts	1,115,423	349,813	-	1,465,236
Allowance for devaluation of inventories	3,227,460	1,651,328	-	4,878,788
Allowance for impairment of investment	1,195	-	-	1,195
Employee's benefit obligations	2,866,936	1,468,209	397,220	4,732,365
Foreign currency forward contracts	95,029	34,584	-	129,613
Total	7,306,043	3,503,934	397,220	11,207,197
Deferred tax liabilities:				
Inventories (from fair value adjustment of business combination)	160,355	50,217	-	110,138
Equipment (from fair value adjustment of business combination)	466,447	262,334	-	204,113
Unrealized gain (loss) on temporary investments	257,061	(393,350)	-	650,411
Customer relationship (from fair value adjustment of business combination)	14,636,181	2,980,218	-	11,655,963
Depreciation of equipment	206,135	17,330	-	188,805
Finance lease assets	1,324,826	760,761	-	564,065
Total	17,051,005	3,677,510	-	13,373,495
Deferred tax assets (liabilities) - net	(9,744,962)			(2,166,298)
Deferred tax income (expenses) - net		7,181,444	397,220	



	Baht			
	Separate financial statements			
	Balance as at	Income (expenses) during the year		Balance as at
	Dec. 31, 2017	In profit or loss	In other comprehensive income	Dec. 31, 2018
Deferred tax assets:				
Allowance for doubtful accounts	881,759	233,664	-	1,115,423
Allowance for devaluation of inventories	2,682,624	544,836	-	3,227,460
Allowance for impairment of investment	1,195	-	-	1,195
Employee's benefit obligations	2,507,594	359,342	-	2,866,936
Foreign currency forward contracts	115,358	(20,329)	-	95,029
Total	6,188,530	1,117,513	-	7,306,043
Deferred tax liabilities:				
Inventories (from fair value adjustment of business combination)	257,334	96,979	-	160,355
Equipment (from fair value adjustment of business combination)	833,261	366,814	-	466,447
Unrealized gain (loss) on temporary investments	363,008	105,947	-	257,061
Customer relationship (from fair value adjustment of business combination)	17,616,400	2,980,219	-	14,636,181
Depreciation of equipment	274,637	68,502	-	206,135
Finance lease assets	298,687	(1,026,139)	-	1,324,826
Total	19,643,327	2,592,322	-	17,051,005
Deferred tax assets (liabilities) - net	(13,454,797)			(9,744,962)
Deferred tax income (expenses) - net		3,709,835	-	



18. EMPLOYEE'S BENEFIT OBLIGATIONS

Movements of employee's benefit obligations for the years ended December 31, 2019 and 2018 were as follows:

	Baht		
	Consolidated	Separate financial statements	
	financial statements		
	2019	2019	2018
Beginning balance defined benefit obligations	16,670,899	16,670,899	14,897,993
Past service costs and interest			
- change a post-employment plan amendment	3,900,264	3,900,264	-
Current service costs and interest	3,585,585	3,585,585	1,772,906
Actuarial (gain) loss	1,986,098	1,986,098	-
Benefits paid by the plan	(629,000)	(629,000)	
Ending balance defined benefit obligations	25,513,846	25,513,846	16,670,899

The statements of comprehensive income for the years ended December 31, 2019 and 2018 are as follows:

	Baht		
	Consolidated	Separate financial Statements	
	financial Statements		
	2019	2019	2018
Past service costs	3,900,264	3,900,264	-
Current service costs			
Cost of sales	639,553	639,553	207,419
Selling expenses	1,685,793	1,685,793	478,869
Administrative expenses	712,468	712,468	673,138
Interest on obligation	547,771	547,771	413,480
	3,585,585	3,585,585	1,772,906
Total	7,485,849	7,485,849	1,772,906



Principal actuarial assumptions at the reporting date for the years ended December 31, 2019 and 2018 are as follow:

	Percentage		
	Consolidated financial statements	Separate financial statements	
	2019	2019	2018
Discount rate	1.50 - 1.80	1.50 - 1.80	2.40 - 2.99
Salary increase rate	4.50	4.50	4.50
Employee turnover rate	4.78 - 28.65	4.78 - 28.65	4.78 - 28.65
Mortality rate	Thai Mortality Ordinary Table 2017	Thai Mortality Ordinary Table 2017	Thai Mortality Ordinary 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, 2019 and 2018 are summarized below:

	2019			
	Consolidated financial statements/Separate financial statements			
	%		Baht	
	increase	decrease	increase	decrease
Discount rate	2.30 - 2.50	(1.00) - (1.30)	(2,441,549)	2,860,592
Salary increase rate	1	(1)	2,351,558	(2,043,907)
Turnover rate	20	(20)	(2,937,513)	3,609,038
Mortality rate	20	(20)	(284,311)	288,500
	2018			
	Separate financial statements			
	%		Baht	
	increase	decrease	increase	decrease
Discount rate	2.90 - 3.49	(1.90) - (2.49)	(747,102)	804,187
Salary increase rate	1	(1)	1,481,105	(1,289,997)
Turnover rate	20	(20)	(1,970,811)	2,420,057
Mortality rate	20	(20)	(184,305)	187,015



On April 5, 2019, the Labour Protection Act has been enacted in the Royal Gazette. The Labour Protection Act includes a requirement that an employee who is terminated after having been employed by the same employer for an uninterrupted period of 20 years or more, receives severance payment of 400 days of wages at the most recent rate, which is increased from the current maximum rate of 300 days. This Act shall come into force after the expiration of thirty days from the enacted date in the Royal Gazette onwards. This change is considered a post-employment benefits plan amendment. The Company recognized the increase in the employee benefit obligations approximately Baht 3.90 million, resulting in the decrease in profit approximately Baht 3.90 million in profit or loss for the year ended December 31, 2019.

19. THE EMPLOYEE JOINT INVESTMENT PROGRAM (EJIP)

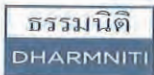
On May 22, 2015, the Securities and Exchange Commission approved the Employee Joint Investment Program (EJIP). The details of the program are as follows;

The period of EJIP	May 1, 2015 to April 30, 2020, with a total duration of 5 years.
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 5-25% of each month. 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

During the years 2019 and 2018, the Company and its subsidiary contributed Baht 4.22 million and Baht 4.30 million, respectively (for the Company's only amounting to Baht 4.22 million and Baht 4.30 million, respectively), to the program.

20. 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.



21. 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.

22. APPROPRIATION OF RETAINED EARNINGS

According to the Annual General Meeting of Shareholders No. 1/2019, held on April 25, 2019, the shareholders approved the appropriation of legal reserve at 5% of annual net profit in the amount of Baht 6,717,937 on and approve the dividend payment at the rate of 0.16 baht per share for the issued and paid-up shares of 584,500,000 shares, amounting to Baht 93,519,936. The dividend was paid on May 17, 2019.

According to the Company's Board of Directors No. 2/2018, held on February 23, 2018, the directors passed the resolution to declare dividend at Baht 0.14 per share for 584,500,000 issued and paid up ordinary shares, in total amount of Baht 81,830,000. The dividend declaration had been approved from Annual General Shareholders' Meeting No. 1/2018 on April 28, 2018.

23. 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, 2019 and 2018, the Company and its subsidiary paid contributions to provident fund and recognized as expenses amounting to Baht 3.82 million and Baht 3.69 million, respectively (for the Company's only amounting to Baht 3.82 million and Baht 3.69 million, respectively).

24. 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 subsidiary 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



Operating segment by business in the consolidated statement of comprehensive income for the ended December 31, 2019 were as follows:

	Thousand Baht				
	Consolidated financial statements				
	2019				
	Segment 1	Segment 2	Segment 3	Segment 4	Total
Revenue from sale of goods	547,642	81,097	262,005	345,299	1,236,043
Revenue from rendering of services	96,479	-	-	34,361	130,840
Cost of sale of goods	(398,254)	(58,695)	(174,115)	(196,846)	(827,910)
Cost of rendering of services	(88,807)	-	-	(31,976)	(120,783)
Gross profit	157,060	22,402	87,890	150,838	418,190
Other income					27,091
Selling expenses					(117,556)
Administrative expenses					(140,780)
Finance cost					-
Profit before income tax expense					186,945
Income tax expense					(37,326)
Profit for the periods					149,619
Other comprehensive income (expense)					(1,642)
Total comprehensive income for the years					147,977

Operating segment by business in the statement of comprehensive income for the years ended December 31, 2019 and 2018 were as follows:

	Thousand Baht									
	Separate financial statements									
	2019					2018				
	Segment 1	Segment 2	Segment 3	Segment 4	Total	Segment 1	Segment 2	Segment 3	Segment 4	Total
Revenue from sale of goods	547,642	81,097	262,005	348,002	1,238,746	455,822	89,327	320,394	333,420	1,198,963
Revenue from rendering of services	96,479	-	-	34,361	130,840	113,762	-	-	31,540	145,302
Cost of sale of goods	(398,254)	(58,695)	(174,115)	(199,053)	(830,117)	(321,577)	(66,951)	(220,849)	(193,132)	(802,509)
Cost of rendering of services	(88,807)	-	-	(31,976)	(120,783)	(98,996)	-	-	(29,722)	(128,718)
Gross profit	157,060	22,402	87,890	151,334	418,686	149,011	22,376	99,545	142,106	413,038
Other income					27,089					11,749
Selling expenses					(117,457)					(119,078)
Administrative expenses					(140,401)					(138,203)
Finance cost					-					-
Profit before income tax expense					187,917					167,506
Income tax expense					(37,326)					(33,148)
Profit for the years					150,591					134,358
Other comprehensive income (expense)					(1,589)					-
Total comprehensive income for the years					149,002					134,358



Operating segment by business in the statement of financial position as at December 31, 2019 and 2018 were as follows:

	Thousand Baht				
	Consolidated financial statements				
	2019				
	Segment 1	Segment 2	Segment 3	Segment 4	Total
Assets for reportable segments					
Trade receivables - other companies	144,452	21,196	61,169	61,850	288,667
Inventories	144,012	9,518	73,452	78,058	305,040
Goodwill	-	-	200,066	134,606	334,672
Customer relationship	-	-	42,092	16,188	58,280
Assets under common use					
- Investment property	-	-	-	-	229,967
- Plant and equipment	-	-	-	-	30,667
- Intangible assets	-	-	-	-	20,947
- Others	-	-	-	-	328,057
Total assets for reportable segments	288,464	30,714	376,779	290,702	1,596,297
Total liabilities for reportable segments		-	-	-	274,635

Operating segment by business in the statement of financial position as at December 31, 2019 and 2018 were as follows:

	Thousand Baht									
	Separate financial Statements									
	2019					2018				
	Segment 1	Segment 2	Segment 3	Segment 4	Total	Segment 1	Segment 2	Segment 3	Segment 4	Total
Assets for reportable segments										
Trade receivables	144,452	21,196	61,169	64,857	291,674	117,937	21,920	64,915	58,337	263,109
Inventories	144,012	9,518	73,452	75,800	302,782	150,573	11,879	72,802	69,185	304,439
Goodwill	-	-	200,066	134,606	334,672	-	-	200,066	134,606	334,672
Customer relationship	-	-	42,092	16,188	58,280	-	-	52,858	20,322	73,180
Assets under common use										
- Investment property	-	-	-	-	229,967	-	-	-	-	231,818
- Plant and equipment	-	-	-	-	30,667	-	-	-	-	32,681
- Intangible assets	-	-	-	-	20,947	-	-	-	-	23,979
- Others	-	-	-	-	321,799	-	-	-	-	284,708
Total assets for reportable segments	288,464	30,714	376,779	291,451	1,590,788	268,510	33,799	390,641	282,450	1,548,586
Total liabilities for reportable segments	-	-	-	-	268,100	-	-	-	-	281,381

For the years ended December 31, 2019 and 2018, there was no revenue from sales and service with a single external customers contributed 10% or more to the total revenue.



25. EXPENSE BY NATURE

Expenses by nature for the years ended December 31, 2019 and 2018 consist of the significant expenses were as follows:

	Baht		
	Consolidated	Separate financial statements	
	financial statements		
	2019	2019	2018
Purchases of finished goods	832,948,759	832,899,082	813,401,193
Other changes in finished goods and work in process	1,656,821	1,656,821	(13,173,221)
Employee expenses	200,061,724	199,950,186	196,747,200
Office rental and service expenses	14,156,410	14,138,804	14,249,352
Depreciation and amortization	31,622,613	31,622,613	31,259,117
Others	126,582,495	128,491,533	146,026,057
Total	1,207,028,822	1,208,759,039	1,188,509,698

26. INCOME TAX EXPENSE (TAX INCOME)

26.1 Major components of income tax expense (tax income)

For the years ended December 31, 2019 and 2018 consisted of:

	Baht		
	Consolidated	Separate financial statements	
	financial statements		
	2019	2019	2018
Income tax expense shown in profit or loss :			
Current tax expense:			
Income tax expense for the years	44,507,315	44,507,315	36,858,056
Deferred tax expense (income):			
Changes in temporary differences relating to the original recognition and reversal	(7,181,444)	(7,181,444)	(3,709,835)
Total	37,325,871	37,325,871	33,148,221
Income tax relating to components of other comprehensive income:			
Deferred tax expenses (income) relating to Actuarial gain (losses) on defined employee benefits plans	(397,219)	(397,219)	-
Total	(397,219)	(397,219)	-



- 26.2 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, 2019 and 2018, which were summarized as follows:

	Baht		
	Consolidated	Separate financial statements	
	financial statements	2019	2018
Accounting profit for the years	186,945,274	187,917,370	167,506,975
The applicable tax rate (%)	20%	20%	20%
Income tax expense at the applicable tax rate	37,389,055	37,583,474	33,501,395
Reconciliation items:			
Tax effect of expenses that are not deductible in determining tax profit:			
- Expenses not allowed as expenses in determining taxable profit	185,860	185,860	20,775
Addition expenses deductible for tax purpose	(443,463)	(443,463)	(373,949)
Unrecognized deferred tax			
Asset from loss carry forward	194,419	-	-
Total reconciliation items	(63,184)	(257,603)	(353,174)
Total tax expense (income)	37,325,871	37,325,871	33,148,221

- 26.3 A numerical reconciliation between the average effective tax rate and the applicable tax rate.

For the years ended December 31, 2019 and 2018 were summarized as follows:

	Consolidated financial statements	
	2019	
	Tax amount (Baht)	Tax rate (%)
Accounting profit before income tax expense for the years	186,945,274	
Income tax expense at the applicable tax rate	37,389,055	20.00
Reconciliation items	(63,184)	(0.03)
Income tax expense at the average effective tax rate	37,325,871	19.97

	Consolidated financial statements/Separate financial statements			
	2019		2018	
	Tax amount (Baht)	Tax rate (%)	Tax amount (Baht)	Tax rate (%)
Accounting profit before income tax expense for the years	187,917,370		167,506,975	
Income tax expense at the applicable tax rate	37,583,474	20.00	33,501,395	20.00
Reconciliation items	(257,603)	(0.14)	(353,174)	(0.21)
Income tax expense at the average effective tax rate	37,325,871	19.86	33,148,221	19.79



27. 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	
	2019	2019	2018
Profit for the years (Baht)	149,619,403	150,591,499	134,358,754
Weighted average number of ordinary shares (Shares)	584,500,000	584,500,000	584,500,000
Basic earnings per share (Baht per share)	0.26	0.26	0.23

28. COMMITMENTS AND CONTINGENT LIABILITIES

As at December 31, 2019 and 2018, the Company and its subsidiary had commitments and contingent liabilities as follows :

28.1 As at December 31, 2019 and 2018, the Company and its subsidiary have letters of guarantee issued by banks for goods and work under system installation service agreement of:

	Consolidated financial statements		Separate financial statements	
	2019	2018	2019	2018
Million Bath	26.98	21.86	26.98	21.86
Million US dollars	0.27	-	0.27	-

28.2 The credit facilities with financial institutions as at December 31, 2019 and 2018 consisted of :

Type of credit	Consolidated financial statements	
	Facilities (Million Baht)	Referred interest rate (% per annum)
	2019	2019
Bank overdrafts	11.00	MOR
Letter of credit/trust receipt	160.00	MLR-1,MMR
Letter of guarantee	54.00	1.25 - 2%
Forward exchange contracts	562.39	-
Promissory notes	5.00	MLR
Total	792.39	
Forward foreign exchange contracts (Million US dollars)	7.00	

Type of credit	Separate financial statements			
	Facilities (Million Baht)		Referred interest rate (% per annum)	
	2019	2018	2019	2018
Bank overdrafts	11.00	11.00	MOR	MOR
Letter of credit/trust receipt	160.00	160.00	MLR-1,MMR	MLR-1,MMR
Letter of guarantee	54.00	54.00	1.25 - 2%	1.65 - 2%
Forward exchange contracts	562.39	562.39		
Promissory notes	5.00	5.00	MLR	MLR
Up country check purchase	-	-		
Total	792.39	792.39		
Forward foreign exchange contracts (Million US dollars)	7.00	3.00		



28.3 Minimum lease and service payments are as follows :

Payment periods	Million Baht		
	Consolidated financial statements	Separate financial statements	
	2019	2019	2018
Due not later than 1 year	10.10	9.86	11.92
Due later than 1 year but not later than 5 years	11.71	11.71	1.57

Rental and service expenses for the years ended December 31, 2019 and 2018 are Baht 14.14 million and Baht 14.25 million, respectively (for the Company's only to Baht 14.14 million and Baht 14.25 million, respectively).

29. FAIR VALUE MEASUREMENT

The Company and its subsidiary 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 subsidiary 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, 2019 and 2018, the Company and its subsidiary 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			
	2019			
	Level 1	Level 2	Level 3	Total
Financial assets (liabilities) measured at fair value				
Investments in bond	-	59,620,756	-	59,620,756
Investments in investment units	-	64,857,167	-	64,857,167
Foreign currency forward contracts	-	135,819	-	135,819



	Baht			
	Separate financial statements			
	2018			
	Level 1	Level 2	Level 3	Total
Financial assets (liabilities) measured at fair value				
Investments in investment units	-	167,434,994	-	167,434,994
Foreign currency forward contracts	-	(1,677,459)	-	(1,677,459)

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 period, 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, 2019 and 2018.

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	Separate financial statements		
	2019	2018		
Financial assets (liabilities)				
Foreign currency forward contracts	135,819	(1,677,459)	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 subsidiary are as follows:

Cash and cash equivalents, trade and other 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 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.

30. FINANCIAL INSTRUMENTS

Financial risk management policies

The Company and its subsidiary 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 subsidiary 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 subsidiary. The Company and its subsidiary 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 subsidiary 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 subsidiary 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 subsidiary are exposed to foreign currency risk relating to purchases which are denominated in foreign currencies. The Company and its subsidiary 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, 2019 and 2018, the Company and its subsidiary have financial liabilities in foreign currencies as follows;

	Foreign Currencies		
	Consolidated	Separate financial statements	
	financial statements		
	2019	2019	2018
Not hedged			
US dollar	119,663	119,663	324,629
SG dollar	-	-	1,000
EURO	35,902	35,902	266,459

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 subsidiary are customer base, management does not anticipate material losses from its debt collection.

Liquidity risk

The Company and its subsidiary monitor its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Company's and its subsidiary's operations and to mitigate the effects of fluctuations in cash flows.

31. EVENT AFTER THE REPORTING PERIOD

31.1 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 472,586 Pound Sterling.



31.2 Dividend payment

According to the resolution of the Board of Directors' Meeting No. 1/2020 held on February 27, 2020, the Board of Directors approved dividend payment at Baht 0.18 per share for 584,500,000 issued and paid up ordinary shares, in total amount of Baht 105,210,000. The dividend declaration will be proposed to the next Annual General Shareholders' Meeting for approval.

32. RECLASSIFICATIONS

Certain reclassifications have been made in the statements of profit or loss and other comprehensive income for the years ended December 31, 2018 to conform to the classifications used in the statements of profit or loss and other comprehensive income for the years ended December 31, 2019 as follows:

	Baht		
	Separate financial statements		
	For the year ended December 31, 2018		
	As previously reported	Increase (decrease)	As reclassified
Selling expenses	118,974,255	104,529	119,078,784
Administrative expenses	138,307,328	(104,529)	138,202,799

33. APPROVAL OF FINANCIAL STATEMENTS

These financial statements were authorized for issue by the Board of Directors of the Company on February 27, 2020.

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19/20-22 ซอยศูนย์วิจัย ถนนพระราม 9 แขวงบางกะปิ เขตห้วยขวาง กรุงเทพฯ 10310

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