



Part 1. Business



Policy and overall business

Vision / Mission / Business Objectives and Strategy of the Company

Communication & System Solution Public Limited Company "CSS" was founded on 25 January 1994, with the initial objective of distributing and installing passive fire protection materials and equipment for highrise buildings and factories. The Company has since expanded the business to become the distributor for electrical wires of various types and other electrical systems equipment from leading international manufacturers such as general cables for use in buildings and factories, internal and external lighting, transformers, conduits, and materials and equipment related to passive fire protection. Customers include government agencies and private companies. In addition, the Company provides installation and maintenance services for communications systems, including the construction and installation of mobile telephone systems, basic telephone systems. In 2015, the company has expanded to provide Information Technology (IT) and the business of renewable energy with the governance policy. The company is focused on the continued growth and sustainability. By expanding into new business areas to continue business operations at all times. Which is considered the heart of the policies and operations of the Company.

Vision

" A leading company in the business of engineering communications. Business information technology and renewable energy products and systems engineering with quality management. "

Mission

- Distributing and delivering engineering products at a reasonable price and with excellent service.
- Installing telecommunication systems with innovation to meet the needs of customers regarding international standards.
- Auction operation tasks for installation communication technology systems and information technology until successful with advanced technology solutions.
- Business operations of Renewable Energy and energy management policy for the Government to provide new alternative energy sources of Thailand.

Business objectives

The Company aims to maintain its position as the market leader in the distribution of electric cable and equipment that is of high quality and standards and to provide a one-stop service, which means offering a wide range of electrical wires and equipment of all types that makes it convenient and easy for customers to order and receive their goods. The aim is to meet customers' requirements quickly and efficiently so that they receive the highest satisfaction.



The Company aims to maintain its status as the country's leading provider of services in the design and installation of passive fire protection and telecommunication systems, focusing on improving operational efficiency and quality services to ensure customer confidence that work will be completed to the quality and schedule they require. By focusing on these areas, the Company has experienced business success.

In addition, the company is certified to ISO 9001: 2008 accreditation for the management of telecommunications systems installations from United Registrar of Systems (Thailand) Co. Ltd. (URS). However, the company remains committed to development of operational efficiency in order to meet the needs of our customers to the maximum. In 2017, The company has undertaken to improve the quality system, by expanding the scope to identify the risks and opportunities that affect the quality management system of the organization including the planning and control of changes that may affect the production and delivery of products or services. With a commitment to quality and continuous development The company can raise towards ISO certification 9001:2015 from United Registrar of Systems (Thailand) Co. Ltd. (URS) is completed.

The Company aims to expand business to cover the installation of other communication systems. As well as expanding the business into a growing industry and a government policy such as installation communication technology systems and business of Energy to provide new alternative energy sources of Thailand.

Strategy

- Planning to expand the customer base by greater coverage of sales area and industrial groups, as well as expanding the customer base among state agencies
- Increasing the range of products and services to enable expansion of the customer base and to better support the needs of existing customers.
- Focusing on growth of installation services, particularly telecommunications systems which is an expanding domestic industry, and being able to quickly adapt to changes in technology. Moreover, the Company aims to expand operations in the telecommunications field and the distribution business to support business growth in neighbouring countries where there is high growth potential such as Myanmar.
- Building and maintaining good customer relations by focusing on pre- and post-sales services and maintaining the quality and standards of services offered to customers in order to create satisfaction and confidence in choosing to continue using the Company's services.
- The development of Company personnel at all levels in order to move ahead with changing technology and reduce reliance on key personnel, with staff training budget provided every year.
- Expand business to make revenue and long-term returns, such as business investment in information technology and the Government's renewable energy policy.
- Expand business and invests in neighboring countries, such as Myanmar and AEC Group to reduce on the effects of competition and the domestic market.



Significant developments

Historical, the Changes and Development of the Company and its subsidiaries.

Histories of the Company and its subsidiaries.

The Company was founded in 1994, with the initial objective of distributing and installing passive fire protection materials and equipment for highrise buildings and factories. The Company has since expanded the business to become the distributor for electrical wires of various types and other electrical systems equipment from leading international manufacturers such as general cables for use in buildings and factories, internal and external lighting, transformers, conduits, and materials and equipment related to passive fire protection. Customers include government agencies and private companies. In addition, the Company provides installation and maintenance services for communications systems, including the construction and installation of mobile telephone systems, basic telephone systems. In 2015, the company has expanded to provide Information Technology (IT) and the business of renewable energy and energy management according to government policy. The Company's head office is at 455,477 Moo.9, Bondstreet Road, Bangpood, Pakkred, Nonthaburi. In August 2015, Head Office and warehouses of the company moved to 329 Moo.3, Banmai, Pakkred, Nonthaburi. In addition, the company also has 2 branch offices and warehouses where in East at 59 Moo.7, Bang Phra, Sri Racha, Chonburi and Ram40 branch at 142 Soi Ramkhamhang 40, Ramkhamhang Road, Huamak, Bangkok. Which later, the company canceled the contract for the warehouse of Ram 40 branch.

The company increased the capital from 1 million baht to 120 million baht during the year 1995 - 2005. The Company registered an increase in paid-up capital to 250 million baht from the rights offering to existing shareholders and was listed on the Stock Exchange of Thailand on 3 September 2013 with paid-up capital increased to 350 million Baht. Now, the company has registered capital to 588,036,884.50 Baht by paid – up capital to 587,869,544.50 Baht into 1,175,739,089 ordinary shares at the par value of Baht 0.50 per share.

Significant developments in last 3 years

2016	March	Resolutions of the Extraordinary Meeting of Shareholders No.1/2016 were as follows;
		1. Decreased capital from 587,995,174.50 baht to 587,987,137 by decrease 16,075 dividend shares, which are not allocated with par value of Baht 0.50 per share and registered the amendment of the memorandum of association at Ministry of Commerce since 15 March 2016

2. Increased of the registered capital from 587,987,137 Baht to 588,036,884.50 Baht to support the adjustment CSS-W1 by issuing the new 99,495 ordinary shares at the par value of 0.50 Baht. And registered the amendment of the memorandum of association at Ministry of Commerce since 16 March 2016
3. Increased the amendment to the objectives of the company from 53 to 55 to comply with the business expansion and registered the amendment of the memorandum of association at Ministry of Commerce since 16 March 2016.

April The Company has increased of the paid-up capital from 544,701,641.50 baht to 587,869,544.50 Baht into 1,175,739,089 shares at the value of 0.50 per share from the lasted of the CSS-W1 and registered the amendment of the memorandum of association at Ministry of Commerce since 7 April 2016

Award of the year 2016

- Awarded of "CEO AEC Awards 2016"

2017 March The company is certified to ISO 9001: 2015 accreditation for the management of telecommunications systems installations from United Registrar of Systems (Thailand) Co. Ltd. (URS).

October Resolutions of the Board of Directors Meeting No.4/2017 approved the Company to invested in Namsor Hydro Power Company Limited to acquired the capital increase 67,200 shares at the value of 100,000 Lao Kip per share Representing 28% of total share which is located in Laos which operating for conducting hydropower business.

Award of the year 2017

- Received quality assessment score for organizing Annual General Meeting of Shareholders for 2017 by receiving 99 percent out of 100 from Thai Investors Association
- Received a rating of quality assessment criteria for good corporate governance survey of Thai listed companies by being 4 stars from Thai Institute of Directors



2018

April

Resolutions of the Board of Directors Meeting approved the Company to invested in Namsor Hydro Power Company Limited to acquired the capital increase 33,600 shares at the value of 100,000 Lao Kip or a total of 3,360 million Lao Kip to maintain its 28 % shareholding The Company made a payment totaling Baht 13.5 million for the share subscriptions on 31 May 2018.

September

The meeting of the Board of Directors of the Company passed a resolution approving the acquisition of 36,000 ordinary shares of Namor Hydro Power Company Limited, representing 10% of the issued and paid-up shares from an existing shareholder. company Has paid some shares for a total of approximately 14.6 million baht on 1 October 2018, which makes the company has a shareholding proportion of 38%

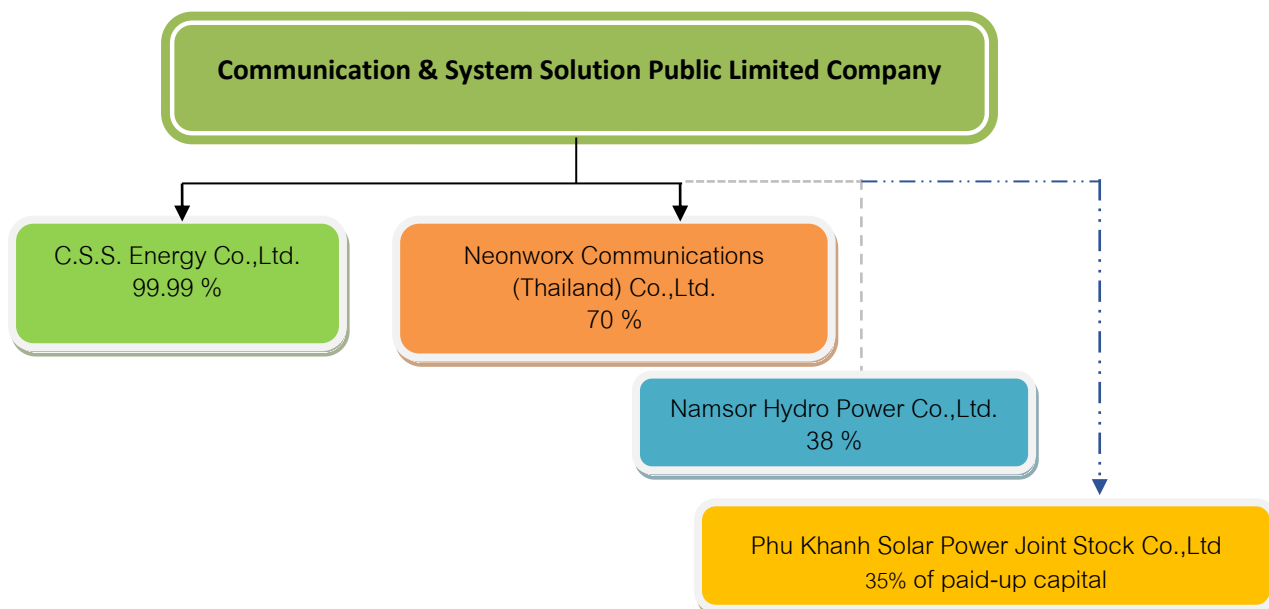
Novemberber

Resolutions of the Board of Directors Meeting No.3/2018, approved to enter an investment memorandum in the project of Solar Power Plant in Vietnam with total capacity of 99.216 MW of Phu Khanh Solar Power Joint Stock Company which is registered in Vietnam, and operates a Solar Power Plant in Fujian province, Socialist Republic of Vietnam, which invested in ordinary shares of 1,250,000 shares in proportion of 25% of the registered and representing 35% of paid-up capital and the co-investor is Solar Power Management (Thailand) Co., Ltd.

Award of the year 2018

- Received quality assessment score for organizing Annual General Meeting of Shareholders for 2018 by receiving 100 percent from Thai Investors Association
- Received a rating of quality assessment criteria for good corporate governance survey of Thai listed companies by being 5 stars from Thai Institute of Directors

Overall business of the Company and subsidiaries



C.S.S. Energy Co.,Ltd.

C.S.S. Energy Co. Ltd. originally named C.S.S. Cable and Accessories Co. Ltd., was established on 6 November 1997, with the original purpose of operating as a distributor of electrical wires and other electrical system equipment from leading international manufacturers. In 2011 C.S.S. Cable transferred these operations under the Company. In 2012, Company policy was for C.S.S. Cable to conduct business with government agencies and to act as representative for various products. These operations would mainly be conducted using Company personnel.

C.S.S. Cable and Accessories Co. Ltd. registered a change of name to C.S.S. Energy Co. Ltd. at the Ministry of Commerce on 24 October 2014, with its head office located at 329 Moo.3, Banmai, Pakkred, Nonthaburi, the same address as that of the Company by having a registered capital and paid-up capital amount of 150 million baht. In addition, C.S.S. Energy Co. Ltd. also has a branch located at 59 Moo.7, Bang Phra, Sri Racha, Chonburi.

Neonworx Communications (Thailand) Co. Ltd.

Neonworx Communications (Thailand) Co. Ltd. (NWC) was established on 13 July 2006 with purpose of operating as an agent installation and maintenance the telecommunication system by turnkey. Customers of the Company are AIS, True, Dtac and TOT etc. by having a registered capital and paid-up capital amount of 10 million baht. The head office located at 10 Soi Naknivas 47, Naknivas Road, Ladprao, Bangkok.



Namsor Hydro Power Co.,Ltd.

Namsor Hydro Power Co.,Ltd is a company incorporated and registered under the laws of the Lao People's Democratic Republic was established on 25 August 2014, with the original purpose of operating for conducting hydropower business. The head office located at Ban Nam Ngom, Meuang Vien, Bolikhamsai, Laos.

Phu Khanh Solar Power Joint Stock Company

Phu Khanh Solar Power Joint Stock Company is a company incorporated and registered under the laws of Vietnam with the original purpose of operating for conducting Solar Power Plant in Fujian province, Socialist Republic of Vietnam. There are 2 projects with total capacity of 99.216 MW.

Connection with the businesses of major shareholders

-None-



Business Characteristics

Revenue Structure

Types of Products	2016		2017		2018	
	Million Baht	%	Million Baht	%	Million Baht	%
Electrical Wire	2,639.88	56.01	2,288.04	51.27	2,584.37	56.60
Lamp and lighting Equipment	441.60	9.37	431.56	9.67	131.85	2.89
Electrical conduits and fittings	132.70	2.82	114.63	2.57	84.15	1.84
Electrical system control equipment	270.86	5.75	373.49	8.37	325.41	7.13
Passive fire protection materials and equipment	40.98	0.87	40.62	0.91	32.19	0.71
Electrical Transformers	25.76	0.55	13.90	0.31	19.79	0.43
Others	16.74	0.36	8.27	0.19	34.38	0.75
<i>Total Sale Revenues</i>	<i>3,568.52</i>	<i>75.72</i>	<i>3,270.51</i>	<i>73.29</i>	<i>3,212.14</i>	<i>70.35</i>
Telecommunication system installation revenue	1,050.18	22.28	1,114.71	24.98	986.91	21.62
Passive Fire protection system installation revenue	43.62	0.93	35.31	0.79	37.60	0.82
Other services revenue	31.60	0.67	18.45	0.41	293.47	6.43
<i>Total installation service revenues</i>	<i>1,125.40</i>	<i>23.88</i>	<i>1,168.47</i>	<i>26.18</i>	<i>1,317.98</i>	<i>28.87</i>
Brokerage income	-	-	-	-	-	-
Other income	19.14	0.41	23.51	0.53	35.52	0.78
<i>Total Revenues</i>	<i>4,713.06</i>	<i>100.00</i>	<i>4,462.49</i>	<i>100.00</i>	<i>4,556.64</i>	<i>100.00</i>

Characteristics of products and services

The Company and the subsidiary (referred to jointly as “the Company”) are involved in 2 types of business: the distribution of electrical wires and other electrical equipment, and the design of telecommunication and passive fire protection systems, as well as the maintenance of telecommunication systems and other forms of coordination. The Company’s products and services can be detailed as follows:

1. Distribution business

The Company operates as a distributor of electrical wires and other types of electrical systems equipment, as well as passive fire protection materials and equipment from leading international manufacturers such as Phelps Dodge, Bticino and 3M. The Company orders products from both Thai and foreign manufacturers based in Thailand as well as importing special products from foreign manufacturers, mainly to sell to customers in the private sector such as general contractors and project developers, and through wholesale and retail outlets throughout the

country. The Company has a sales team to contact and coordinate sales through various channels and 3 warehouse facilities which enable the rapid delivery of products to meet customer needs. In the last year, the Company was aware of the importance of safety issues and therefore took out product transportation insurance in order to deliver products quickly, safely and with maximum efficiency. In 2017 and 2018, revenues from the distribution operations made up 73% and 70% of total revenue respectively. Products which the Company distributes can be divided into 5 main types: electrical wires conduits and installation equipment, electrical systems control equipment, passive fire protection materials and equipment and electrical transformers, with details as follows:

1.1 Electrical wire



At present, the Company is a distributor for various types of electrical wires, most of which are sold under the Phelps Dodge brand, one of the biggest manufacturers in Thailand. Electrical wires made up approximately 51% and 57% of total revenues in 2017 and 2018 respectively, with the 3 primary types by use being general cable for use in buildings and factories, special cable for use in factories, and cable for telecommunications engineering systems.

1.2 Conduits and installation equipment



In setting up electrical wiring systems, conduits help to prevent damage to wiring and allow it to be properly routed. At present, the Company distributes electrical coated steel and iron conduits and fittings from the Arrow pipe brand and white ARR pipes and fittings from the CLIPSAL brand which have been certified according to ISO 9001, UL, BS, IEC, TIS 770-2553 and TIS 2133-2545 standards. The Company also distributes polyethylene pipes for the TGG and TAP brands, which are used for their insulation properties and resistance to environmental conditions when buried. In addition, the Company distributes other fittings such as joints, white pvc pipes and steel channels from the ARR, TST and CS Wire way brands. Electrical conduits and fittings accounted for approximately 3% and 2% of revenues in 2017 and 2018.

1.3 Electrical system control equipment



The Company is the distributor of products under the Bticino brand which include switches, electrical plugs or sockets, television and telephone sockets, breakers and safety equipment. Bticino products are designed with a stylish modern look and safety in mind. They are quality products that meet customers' needs and comply with IEC and NEMA international quality standards, as well as TIS standards and UNI EN 29000-ISO 9000. Sales of

electrical system control products made up approximately 8% and 7% of revenue in 2017 and 2018.

1.4 Passive fire protection materials and equipment



The Company was appointed by 3M Thailand Co. Ltd. (3M) as their distributor for passive fire protection materials and equipment which are used to fill spaces in pipes and walls and which, if a fire breaks out, will expand to fill the spaces to prevent the spread of flames and toxic smoke from one area to another. The passive fire protection materials and equipment sold by the Company takes several forms, with the choice of materials depending on customers' specific requirements in terms of appearance and durability. The preventative properties of the materials

range from approximately 30 minutes to 4 hours and comply with Under Laboratories (UL) standards. In addition, the Company also distributes other 3M electrical products such as connectors, terminal kits, cable insulation, non-contact infrared thermometers, sprays for electrical work and more than 30 types of electrical tape including tape used for insulation, moisture sealant, heat resistance and corrosion prevention. Passive fire protection materials and equipment and other electrical products accounted for approximately 1% of revenues in 2017 and 2018.

1.5 Electrical transformers



These transformers provide the transformation from the high voltage lines to the distribution system of the Metropolitan Electricity Authority and Provincial Electricity Authority at the level required by end users such as factories, households and high rise buildings. Transformers accounted for approximately 0.3% and 0.4% of revenues respectively in 2017 and 2018.

2. Design and installation business

In 2017 and 2018, installation services made up approximately 26% and 29% of the Company's total revenue respectively. The Company's installation services can be separated into 2 areas: (1) communication system design and installation (2) Fire protection systems and maintenance services. Details are as follows;

2.1 Communication System design and installation

Over the course of several years, the telecommunications industry has seen continuous growth, together with changes in technology and consumer behavior, and the Company first recognizing the opportunities for the installation of telecommunications towers in 1999. Currently, the Company provides design, purchasing and installation services for telecommunication systems, both mobile telephone signal systems and complete basic telephone systems, by a professional team of engineers with over 20 years' experience. When taking on an



installation project, the Company will study and design a steel-framed tower, using one of several designs through a computer program that allows changes to be made to the proportions, form, height and weight of the mast, in order to meet the customer's requirements and for the efficient transmission of mobile signals, and also produces a design ready for the communication equipment such as the signal transmission systems of different mobile phone operators, power systems and electric wiring systems. Next, the Company will hire a contractor to prepare the construction area, lay the foundations, construct the steel frame and install the communication equipment, with the Company's engineers overseeing construction, connecting the signal and testing that the quality of the work meets the customer's specifications and is handed over as scheduled. In addition, the Company provides after-sales services with a 1-year warranty period to ensure customer satisfaction and confidence in the quality of the work. The Company's main customers are mobile network operators from the private sector and contractors who have been hired directly by mobile network operators. (See additional details in the telecommunication installation business) . In 2017 and 2018, design, purchasing and installation services for telecommunication systems accounted for 25% and 22% of the Company's total revenue respectively.

Characteristics of the telecommunications towers installed are as follows:

1. Self-Supporting Tower
2. Guyed Mast Tower
3. Stub Tower
4. Pole

Major Works

The Company's installation of telecommunication towers has had a good reputation in terms of the quality of the materials and products meeting the specifications and work being completed on schedule. In the last 3 years, important installations of telecommunication towers have included both new sites and upgrades.



Project	Employer	Process by	Characteristics of Services	Value of Project (Million Baht)	Process Time
Thailand BKFT 3G HSPA (East) ph.5	Asia Wireless Communication Co.,Ltd ("AWC")	Company	New Site	346.25	Mar 2012 – Mar 2015
Thailand BKFT 3G HSPA (East) ph.5	Asia Wireless Communication Co.,Ltd ("AWC")	Company	New Site	534.35	Mar 2012 – Mar 2015
Thailand BKFT 3G HSPA (Bangkok Region) Phase 5	Asia Wireless Communication Co.,Ltd ("AWC")	Company	New Site	66.00	Mar 2012 – Mar 2015
Thailand BKFT 3G HSPA (Bangkok Region) Upgrade Site	BKFT Thailand Co.,Ltd	Company	New Site	14.10	Oct 2012 – Nov 2015
2.1GHz UMTS_LTE Phase 0 Project	Huawei Technologies (Thailand) Co.,Ltd ("Huawei")	Company	New Site	67.76	Feb 2013 – Apr 2016
2.1GHz UMTS_LTE Phase 1 Project (Bangkok Region)	Huawei Technologies (Thailand)Co.,Ltd ("Huawei")	Company	New Site	74.59	Jun 2013 – Jun 2016
2.1GHz UMTS_LTE Phase 1 Project (East Region)	Huawei Technologies (Thailand) Co.,Ltd ("Huawei")	Company	New Site	54.58	Jul 2013 – Dec 2015
2.1GHz UMTS_LTE Phase 1 Project (South Region)	Ericsson (Thailand) Co.,Ltd	Company	New Site	73.10	Aug 2013 – Dec 2015
2.1GHz UMTS_LTE Phase 1 Project (South Region) (TE Installation)	Ericsson (Thailand) Co.,Ltd	Company	New Site	24.60	Sep 2013 – Jun 2016
Real Future 2.1GHz New Site & Existing_LTE Ph.1 (East/Bangkok/South)	True Corporations PCL.	Company	New Site	81.36	Jan 2014 - Dec 2015
True_Infrastructure Fund Project (Site Acquisition Work)	True Corporations PCL.	Company	New Site	3.44	Jan 2014 - Dec 2015
True_Infrastructure Fund Project "East"	True Corporations PCL.	Company	New Site	599.43	Jan 2014 – Apr 2016
True_Infrastructure Fund Project "Bangkok"	True Corporations PCL.	Company	New Site	393.50	Jan 2014 – Apr 2016
True_Infrastructure Fund Project "South"	True Corporations PCL.	Company	New Site	380.43	Jan 2014 – Apr 2016
Real Future 2.1GHz UMTS_LTE Ph.2.2 (South)	Ericsson (Thailand) Co.,Ltd	Company	New Site	2.60	Nov 2014 - Dec 2016



Project	Employer	Process by	Characteristics of Services	Value of Project (Million Baht)	Process Time
Real Future 2.1GHz UMTS_LTE Ph.3 (South)	Ericsson (Thailand) Co.,Ltd	Company	New Site	40.56	Dec 2014 - Dec 2016
Real Future 2.1GHz UMTS_LTE Ph.3 (East)	Huawei Technologies (Thailand) Co.,Ltd	Company	New Site	48.63	Dec 2014 - Dec 2016
DTAC Cell site year 2014 (BMA 430)	Dtac	Company	New Site	5.40	Dec 2014– Jun 2016
2.1GHz UMTS_LTE (The Best in PHUKET)Project (South Region)	Ericsson (Thailand) Co.,Ltd	Company	New Site	4.26	Jan 2015 – Apr 2016
True Move H2.1GHz UMTS_LTE Phase 3.2 Project (Bangkok Region)	Huawei Technologies (Thailand) Co.,Ltd	Company	New Site	17.19	Apr 2015 – Dec 2016
DTAC New Cell site Year 2015 (South&West)	Dtac	Company	New Site	189.50	Jul 2015 – Jun 2017
True Move H2.1GHz UMTS_LTE Phase 4.3 Project (Bangkok Region)	Huawei Technologies (Thailand) Co.,Ltd	Company	New Site	17.33	Aug 2015 – Dec 2016
DTAC co-Locate True GIF site Project	Dtac	Company	New Site	80.10	Oct 2015 – Jun 2017
True Move Year 2016_900 MHz&1800 MHz(South)	Ericsson (Thailand) Co.,Ltd	Company	New Site	29.70	Jan 2016 – Dec 2017
True Move TE Installation Year 2016_900 MHz&1800 MHz	Ericsson (Thailand) Co.,Ltd	Company	New Site	11.90	Jan 2016 – Dec 2017
True Move Year2016_900 MHz&1800MHz (Bangkok)	Huawei Technologies (Thailand) Co.,Ltd	Company	New Site	11.80	Feb 2016 – Dec 2017
True Move Year 2016_900 MHz&1800 MHz (East)	Huawei Technologies (Thailand) Co.,Ltd	Company	New Site	8.10	Feb 2016 – Dec 2017
True Move Phase 4.6 & 11 for 900 MHz (BKN&East)	True Corporations PCL.	Company	New Site	10.60	Feb 2016 – Dec 2017
True Move 900 MHz for Village Site (East Region)	True Corporations PCL.	Company	New Site	85.30	Feb 2016 – Dec 2017



Project	Employer	Process by	Characteristics of Services	Value of Project (Million Baht)	Process Time
True Move 900 MHz for Village Site (South Region)	True Corporations PCL.	Company	New Site	32.0	Feb 2016 – Dec 2017
DTN Year 2016 Project	DTAC	Company	New Site	132.20	Jul 2016 – Jun 2017
LTE 2100 Phase 5 Densification	Huawei Technologies (Thailand) Co.,Ltd	Company	New Site	8.60	Jul 2016 – Jun 2017
DTAC 2016 Expansion (TE Installation)	Ericsson (Thailand) Co.,Ltd	Company	New Site	2.20	Jul 2016 – Dec 2017
True Move LTE2100 Phase 5 Densification (New Site)	True Corporations PCL.	Company	New Site	4.0	Aug 2016 – Dec 2017
True Move Pracharath School Project (East&South)	True Corporations PCL.	Company	New Site	6.30	Sep 2016 – Dec 2017
DTN 2018 Project (Expansion Project)	DTAC.	Company	New Site	665.30	Jan 2018 – Dec 2018
True Move TE Installation Year 2016_900 MHz&1800 MHz	Ericsson (Thailand) Co.,Ltd	Company	TE Installation	5.80	Jan 2018 – Dec 2018
True Move Year2016_900 MHz&1800MHz (Bangkok)	Huawei Technologies (Thailand) Co.,Ltd	Company	New Site	4.90	Jan 2018 – Dec 2018
True Move Coverage & Capacity Project (New Site)	True Corporations PCL.	Company	New Site	178.30	Jan 2018 – Dec 2018



2.2 Fire Protection System design, purchasing and installation

The Company offers design, purchasing and installation services for fire stops to customers who purchase 3M products supplied by the Company. Installation services can cover open spaces following electrical conduits and water or air conditioning systems that pass through walls or floors in offices and homes, using passive fire protection materials and equipment which provide protection from the effects of heat, flames and smoke for at least 3 hours and have a 1-year warranty period to ensure customer satisfaction and confidence in the quality of the work. The Company has a professional team of engineers with almost 20 years' experience who have been trained by the manufacturer to offer advice on the design of fire and smoke protection systems that comply with safety standards and consult on quality testing standards.

In addition, the Company is able to provide consultancy, design, purchasing and product development services or other services related to engineering projects as required by customers (special projects), such as the purchase and installation of silencers for the underground rail project of the Mass Rapid Transit Authority of Thailand (MRTA) in 2000 and the installation and maintenance of energy-saving lamps and lighting in 2010 - 2012 ("Smart Way" project) for the Energy Engineering Institute, Kasetsart University and the Provincial Electricity Authority. In 2017 and 2018, fire protection system design, purchasing and installation and other services accounted for approximately 1% and 1% of the Company's total revenue.

2.3 Other service installation

The company has auctioned government Related to telecommunication systems, communication systems, electrical equipment installation systems which is continued from the products the Company sells and increasing the revenue of the Company. Such auctions The company is the auctioneer or joint venture with other companies Ex. Sub station projects of the Provincial Electricity Authority, etc.

Marketing and Competition

Company operations have successfully built up customer confidence and satisfaction in terms of product quality and the provision of services that are fast and according to schedule. These are delivered with honesty and fairness and the Company has therefore always enjoyed the trust of its customers. The Company has set the following competitive strategies:

Marketing strategies

1. Products & Services

With the aim of responding to the variety of consumer needs, the Company is focusing on the distribution of electrical products through a one-stop service and quality that meets international standards through top level international brands. The Company also adheres to a policy of creating the greatest customer satisfaction by providing fast services. The Company has 3 warehouses in Bangkok, Sri Racha, Chonburi and Pakkred, Nonthaburi, which is the Head office and the big warehouse. This allows the Company to store a wide range of products in appropriate quantities at locations that are close to customers and convenient for transportation. The



Company is therefore able to make fast deliveries to customers in all areas. The Company has also identified safety as an important area and taken out product transportation insurance to build customer confidence in the Company's products and best respond to customers' needs.

For the installation business, the Company has a team of engineers with over 15 years' expertise and experience in the design and installation of telecommunication systems, as new site construction or equipment upgrades, and almost 20 years' experience in the design and installation of passive fire protection systems. These teams carry out on-site surveys to prepare a work plan and timetable before work begins and organize a regular progress and quality inspection system that ensures the Company is able to meet the deadline and the customers' specifications.

The Company has received ISO 9001: 2008 certification for the management of telecommunication system installations from United Registrar of Systems (Thailand) Co. Ltd. since 2010

In 2014 was awarded ISO 9001: 2008 certification in a further 2 branches are Ramkamhaeng branch and Eastern Branch.

In 2016 was awarded ISO 9001: 2008 certification in cargo maintenance; inspection before transport and also check the cars available regularly to make customers trust in our services.

In 2017 The company is committed to quality and continuous development by expanding the scope to identify risks and opportunities that impact an organization's quality management system as well as planning and control changes that affect the production and delivery of products or services that make the company to raise the standards. The Company has received ISO 9001: 2015 certification from United Registrar of Systems (Thailand) Co. Ltd. (URS).

2. Price

For pricing in the distribution business, the Company takes several factors into consideration. Apart from the cost of the goods and the Company's desired profit margin, pricing also follows market supply and demand, the quantities ordered by customers and competitiveness against other suppliers in the same industry, with pricing strategies also revised in accordance with prevailing industry conditions.

For pricing in the installation business, the Company carries out a study to assess the initial cost of the project and offers a quotation. The assessment is based on the characteristics of the area of installation, the type of tower, the number of piles and the value of materials and equipment to be used in the project, the number of personnel supervising the project and other related costs, the time frame and other risks that may occur while carrying out the project, as well as the Company's profit margin, which will be set appropriately according to the extent of the work to be carried out.

3. Place

The Company sells its products on both a cash and trade credit basis almost entirely within the country through a network which includes large and small wholesale outlets and retail stores located throughout the country, with a sales team going out to meet the target group of customers including general contractors, project developers and customers from state agencies and enterprises. The Company's marketing policy considers good



long-term customer relations to be of importance in order to retain the existing customer base and to attract new customers and gain a bigger market share. The Company has an experienced sales team that make contact and coordinate sales through various distribution channels that allow deliveries to be made quickly and efficiently, and also present accurate product information. The Company also employs a strategy of paying commissions for introducing new customers to the Company as an additional opportunity and method of finding new business. The Company has set clear rules and methods regarding the payment of such commissions, specifying that persons receiving the commission must be persons from outside the Company who introduce new customers and must not be directors, management, staff, major shareholders of customers or the Company and must not be related to any of these persons. A ceiling is applied to the commission referencing a percentage of the total sale and the minimum margin of return after sales costs and the commission are accounted for. Sales staff must request and receive Company approval before proceeding, with the commission paid by crossed cheque only after payment has been received from the customer. Records of commission payments must be presented quarterly to the audit committee and board of directors. If the audit committee finds that any payments were inappropriate, the Company will carry out a review and present its findings to the board of directors for further action.

For the telecommunication system installation business, the Company has 2 main channels for contacting potential customers to present its services: (1) the Company contacts the operators of mobile telephone networks directly and (2) contacts the main contractors who are hired by the mobile network operators. The Company has the advantage in the telecommunication system business of being an independent company that is not part of a group belonging to any one network operator, meaning that the Company is able to provide services to every mobile network operator. Once the Company has been contacted by a customer regarding a project, a team from the telecommunications business will be assigned to directly coordinate the organization of the relevant documents, such as construction drawings and specifications, in order to provide a construction estimate and timetable, before presenting this to the customer. The Company mainly goes through the distribution channels for the passive fire protection system business to locate customers interested in purchasing related 3M products to offer a complete.

4. Promotion

It is Company policy to support sales to both wholesale and retail customers by considering discounts for major customers who place high volume orders or customers with a good financial status and payment record, organizing online promotions through the Company website (www.cssthai.com), E-news letters and Facebook, as well as setting up booths at shows, organizing customer relations activities, meeting target customers directly and producing product catalogues.

For the installation business, the Company places importance on good customer relations. The Company's telecommunications team stay in close contact with customers in order to understand their needs and to quickly be aware of their problems and limitations, and to assist in solving problems, thereby creating maximum customer satisfaction.



Company strengths

- The Company is one of the leading distributors of electrical wires in Thailand and sells electrical system products through a one-stop service that carries a wide range of all types of electrical wires and equipment and makes it convenient and easy for customers to make and receive their orders, with quality standards guaranteed by products from the world's leading brands.
- The Company is the main distributor of quality product from well-known international brands and is able to increase products from various brands each year. This has created confidence in the Company and means it has constantly been entrusted with the distribution of manufacturers' products.
- Deliveries of the Company's products are served by warehouses in Bangkok, and Pakkred, Nonthaburi and Sri Racha, Chonburi, and the Company has expanded storage facilities with 1 additional warehouse in Pakkred, Nonthaburi, which is currently under construction and expected to be completed in 2015. These locations are convenient for transportation and close to customers, allowing the Company to store a wide range of products and make deliveries to customers in all areas and as required. This has built
- The Company has distribution channels covering the whole country through stores and the Company's sales staff reaching private sector customers who are general contractors and project developers.
- The Company's engineering team has almost 20 years' expertise and experience in the design and installation of fire protection systems and over 15 years' experience in the design and installation of telecommunication systems, ensuring that the Company is able to meet deadlines and customers' specifications. In addition, the Company has received ISO 9001: 2008 certification for the management of telecommunication system installations from United Registrar of Systems (Thailand) Co. Ltd. (URS) and in 2014 was awarded ISO 9001: 2008 certification in a further 2 branches. In 2017, The company has undertaken to improve the quality system, by expanding the scope to identify the risks and opportunities that affect the quality management system of the organization including the planning and control of changes that may affect the production and delivery of products or services. With a commitment to quality and continuous development The company can raise towards ISO certification 9001:2015
- The Company is an independent operator in the telecommunication system installation business, providing services to every mobile network operator, since the Company is not part of a group belonging to any one network operator.
- The Company has received strong financial support through loans from financial institutions, as well as public share offerings and being registered with the Stock Exchange. This gives the Company an advantage over its competitors in terms of capital and sources of investment for business operations since at present no competitors with similar operations have been able to attract investment through the capital markets and be listed on the Stock Exchange of Thailand.



Characteristics of target customers

1) Customers in the distribution business

The Company distributes various products with almost all revenue coming from sales within the country. The Company's customers can be categorized into the following main groups:

1.1 Private sector customers

Private sector customers include general contractors, with sales made both directly and through sales representatives who coordinate with contractors and project developers including owners of commercial buildings, offices, shopping malls, hotels, real estate developers and factories, to use the Company's products in their projects. Private sector sales in 2017 and 2018 accounted for approximately 99% and 98.98% of sales revenue respectively.

1.2 Stores

Stores purchase products from the Company to sell to their own customers. This includes stores supplying general construction materials, retailers and wholesalers who provide a channel that enables the Company's products to be distributed throughout the country. Sales to stores in 2017 and 2018 accounted for approximately 0.20% and 0.88% of sales revenue.

1.3 State agencies

State agencies/ state enterprises are customers who require the Company's electrical equipment including the Provincial Electricity Authority, the Metropolitan Electricity Authority, the Mass Rapid Transit Authority of Thailand, Airports of Thailand and CAT Telecom. Sales to state agencies go through 2 channels, auctions or regular orders. The Company's current policy is for the subsidiary to deal with these transactions in future. In 2017 and 2018, these customers accounted for approximately 0.80% and 0.14% of sales revenue.

The Company has policies on extending credit that cover the amount, payment period and trading conditions with consideration given to the trade relationship, the history of contact with the Company and financial status.

2) Customers in the design, purchasing and system installation business

Customers in the design, purchasing and telecommunication system installation business consist of mobile telephone network operators and primary contractors that are hired by the mobile network operators directly. For the fire protection system installation business, customers are from state agencies, private sector commercial businesses, industry, construction and property development etc.



Industry conditions and competition

Industry perspective

Since the Company's business is the distribution of electrical system products, especially electric wiring and providing purchasing and installation services for telecommunication towers, various market factors occur in related industries, namely the construction and real estate industry and telecommunications industry, that have a direct impact on the Company's business operations. For this reason, analysis of the impact that the overall state of the industry has on the Company's business largely depends on conditions in the related industries which can be outlined as follows:

Conditions in the construction and real estate industry

Construction projects such as a residence construction by the private sector and other fundamental constructions by the government sector including the Mass Rapid Transit system, electrical distribution system, or property development project; all require the equipment and system installations with the use of electrical wire which somehow is considered as a part of the constructions.

In first half of 2018, operations in many government construction projects faced some limitations, such as financing sources, environmental impact studying, public opinion surveys, legislative procedures for ease of implementation of construction projects also procurement process in accordance with Government Procurement and Supplies Management Act, 2017 and Ministry of Finance Regulations which takes time to select to find a contractor through a tender. Therefore, in beginning of 2018, construction of government project expanded in limited framework. However, from clear direction of government investment project of first half of year result in second half of year and in 2019, Construction investment in government project is likely to increase at an accelerated rate through large Mega projects that are in tender process and are expected to start construction in 2019 with a total investment capital of over 1.03 trillion baht including from or projects beyond infrastructure development strategies such as Thai Popular Sustainable Project in accordance with government policy to raise quality of life in area consisting of 14,362 road traffic within village project 8,960 community projects and renovation of waterworks 6,103 villages, projects and investment plans of Ministry of Transport to expand road network in 2019 for 48 routes with a credit limit of 48,000 million baht. In addition, consideration of draft of Annual Budget Expenditure Act 2019 on August 30, which approved a budget of over 3 trillion-baht, which Ministry of Transport has allocated budget amount 183,732.5 million baht increased by 8.9% from previous year, ranking as the highest proportion of money received in group. Ministry received a budget of more than 50,000 million baht reflecting money that will enter economic via investment structure basis of Thailand in last quarter of 2018, continued in 2019. (Reference : Kasikorn Research)

For public construction trends during the years 2018-2019 will be expanded according to the progress of the mega project. The expected value of the construction sector will grow by 13-16% per year. The value of total construction in two years about 1.9 trillion Baht. The government also has the policy to the Metropolitan Electricity Authority (MEA) provided an execution plan in converting the electric distribution system, from overhead to



underground, within Bangkok area. This would help create better scenery of the city as a whole and also help elevate the power quality and consistently improve the electric distribution system which in turn allows the system to fully support the increasing needs of electricity; where MEA has allocated over ten billion baht for such project. Recently, MEA has successfully replaced overhead power lines with underground cables on Silom Road. Government units in other rural areas such as Hat Yai city municipality in Song Khla province together with the Provincial Electricity Authority (PEA) have also installed underground cables in the area of Hat Yai municipality during the first phase and are currently in process of phase two. Additionally, as PEA plans to move through these underground cable projects in several more provinces, it seems to help create business opportunities for the company to boost up sales of various types of electrical wires in the near future.

Conditions in the Telecommunication

Currently, competition of mobile phone market is still a competition among 3 major service providers, namely AIS, DTAC and True Move (including True Move H) which individually improve signal system covering more service areas, adjust direction of antenna in order to be able to receive mobile signals more efficiently and put more mobile phone receiver to support increasing number of mobile phone users.

Kasikorn Research Center sees that wireless telecommunications market in 2018 still has a slowing growth from previous year due to intense competition in market especially price competition for data communication services per megabyte that is likely to continue to decline. As a result, revenue from data communication services is likely to slow down while revenue from voice services continues to shrink due to fact that most Thai consumers use online media to communicate with each other instead of making calls which this trend has continued since 3G era in 2013. At same time, entrepreneurs still face a lot of cost management challenges especially cost of business licenses, cost of 4G network expansion and also prepare for 900 MHz and 1800 MHz spectrum auction in second quarter of 2018 as well.

From market outlook, apparently intense competition, Kasikorn Research Center viewed that overall wireless telecommunications market in 2018 should have a slowing growth direction, expected to be worth 253,930 - 259,580 million baht, expanding in framework of 4.7 - 7.1 percent from 2017 (median is 5.9 percent) which should be driven primarily by marketing of entrepreneurs who push for more monthly users or pushing original monthly user to change higher price package with motivation from using more mobile internet including behavior of Thai consumers who still prefer to use mobile broadband internet causing data communication market value continue to expand. However, growth of data communication market is likely to slow down. Kasikorn Research Center foresees that in 2018, value of data communication services market in Thailand should be around 186,660 - 190,490 million baht, with growth rate approximately 14.7 - 17.1 percent, slowing down from 2017 that is expected to expand approximately 21.8 percent due to lower service fee and intense competition in the market.

For tendency of communication business in 2019, still "continue to grow" with significant support from same factors in 2018, including demand for video and audio communications as well as broadband internet that has continued to increase, also entrepreneurs who have plans to invest in network development to increase



network efficiency and plans to invest in high-speed internet networks in order to cover more service areas considered as business opportunity in design and installation for communication company.

(Source: Service Sector Economic Analysis Unit, branch economic sector, Business and Economic Research)

Competition

The distribution of products related to fire protection systems has a high market value and a wide range of products and services. The Company is currently the distributor of products for several companies, with various types of electrical wires as the core product. Domestic electrical wires production can be considered as a replacement for imported production since in the past all electrical wires used in the country was imported. Imports began to fall when the factory manufacturing electrical wires was opened. At present, there are manufacturers of electrical wires in the country:

- Thai Yazaki Electric Wire Co., Ltd
- Bangkok Cable Co.,Ltd
- Charoong Thai Wire & Cable Public Company Limited
- MCI-Draka Cable Co., Ltd.

The electrical wires manufacturers in the country are able to produce and distribute products that are of a similar quality, with the result that the state of the industry and market for these products is a perfectly competitive market.

Competition in the installation of telecommunication towers depends primarily on the policies of the mobile telephone service providers towards investment and signal network development, which is in turn influenced by government policy. However, even though mobile service providers may assign companies from their own group to carry out installation and renovation of towers, the increasing volume of work and the need for speed and completion of the work on schedule means that mobile service providers have to subcontract outside companies to carry out this work. Opportunities of receiving work from the operators for design, purchasing or installation of telecommunication systems depends on the relationship with the owner of the network, experience and past results, the ability to provide a quality service and meet deadlines, and a strong financial status. In addition, since the Company is an independent operator, it is able to accept installation projects from every mobile service provider. It is normal practice for the employer to set a price for the work, leaving the contractor's profit up to their bargaining power when trying to purchase materials and telecommunications equipment at a favorable price and conditions. Therefore, taking into consideration the factors of experience, results, financial status and relatively weak bargaining position with the employer, it is unlikely that new operators will come into the business. Also at present, there are a large number of state and private sector telecommunications projects that require completion in a short period. Overall, therefore, there is relatively little competition in the business.



Moreover, because less supplier of fire protection system and equipment that make the services of fire protection must use products from major manufacturers of domestic distribution. So the competition in this business is not very serious.

Purchasing products and services

1. Distribution business

The Company's operating policy recognizes the importance of product quality and meeting deadlines. Therefore, quality of products and reliability of suppliers is an important factor in the Company's purchasing decisions. The Company is the chosen distributor of electrical wires and other electrical system products from leading international manufacturers. The Company distributes and orders products from both Thai and foreign manufacturers based in Thailand, as well as importing special products from foreign manufacturers. Details on the sources of the Company's products are as follows: -

Table showing sources of products sold through the Company's distribution business.

(Unit: %)

volume of finished goods	2015	2016	2017	2018
● Domestic	99.42	97.51	97.31	95.31
● Oversea	0.58	2.49	2.69	4.69
Total purchase volume of finished goods	100.00	100.00	100.00	100.00

At present, the Company is the appointed distributor of electrical wires and other electrical system products, as well as passive fire protection materials and equipment from leading manufacturers, with the details summarized as follows:

Brand	Product type	Partner company	Length of agreement	Important conditions
phelps dodge*	Cable	Phelps Dodge International (Thailand) Co., Ltd.	Not specified	- None
3M***	Electrical supplies and accessories	3M Thailand Co., Ltd.	2 years, expired 31 December 2019	- None
	Passive fire protection materials and equipment	3M Thailand Co., Ltd.	1 year, expired 31 December 2018	- None



Brand	Product type	Partner company	Length of agreement	Important conditions
Bticino	Electrical system control equipment	Bticino (Thailand) Co., Ltd.	1 year expired on 31 December 2018, able to automatically extend for 1 year period continuously unless 3 months' notice is given.	<ul style="list-style-type: none"> - The Company is only permitted to distribute products in Thailand. - The Company is not permitted to distribute products in competition with Bticino
TTM	Transformers	Thai Trafo Manufacturing Co., Ltd.	3 years, expiring 31 December 2018, with an option for 3 years extension	- None
TGG	Polyethylene pipes	Thai Gow Gai Group Co., Ltd.	Not specified	- None
Arrow	Steel conduits and fittings	J. S. V. Hardware Co., Ltd. (present: Arrow Syndicate Pcl.)	and may be extended according to later agreement	- None
KILLARK	Electrical products for hazardous locations	Killark Electric Manufacturing Company	No date of expiration unless 1month's notice given	- The Company is only permitted to distribute products in Thailand.
Chalmit	Electrical products for hazardous locations	Hubbell Ltd.	No expiry date unless advance notice is given.	- The Company is only permitted to distribute products in Thailand.
BELDEN	Optic Cable	Belden Asia (Thailand) Co.,Ltd	1 year expired on 31 March 2019	- None
COMMScope	Optic Cable	CommScope Connectivity (Thailand) Limited.	No expiry date unless advance notice is given.	- None

Remark: Summary of the manufacturers of core products

* *phelps dodge is manufactured and sold by Phelps Dodge International (Thailand) Co., Ltd., Phelps Dodge International Corporation primarily manufactures electric wire and cable that is widely used in the electricity business, telecommunications, industry and mining, with plants and offices in Thailand*

*** *3M is an American company that has offices and factories in over 65 countries worldwide and manufactures and sells more than 55,000 products. 3M Thailand Co., Ltd. has more than 5,000 products including materials and equipment for passive fire protection systems and other 3M electrical products*



distributor by partners in addition to those detailed above, since it is the nature of the business that distributors do not usually require binding contracts unless partners require special conditions such as specifying the commercial area or not permitting the distribution of competitors' products. The Company operates in accordance with the trading conditions agreed with each partner, with the result that the Company is trusted and has continually extended its distribution contracts.

2. Installation business

Since the design and installation of passive fire protection and communication systems is a business that relies on engineering knowledge and specific expertise, the Company has recruited engineering teams with over 10 years' expertise and experience in the design and installation of telecommunication systems, and almost 21 years' experience in the design and installation of passive fire protection systems. The installation process is as follows:

- **Installation of telecommunication towers**

The process of installing a telecommunication tower begins when the Company is hired by a mobile service operator or a contractor commissioned by the network owner. The characteristics and specifications of the telecommunications towers of each operator will be different. The Company's engineering team will study the needs of the customer and carry out an on-site survey and network feasibility study. The Company will then design the system and offer advice on the process, as well as purchase materials and equipment that is suitable for the project including foundation piles, concrete, steel frames and communication equipment that will enable efficient connection with the mobile network. Following this, the Company will hire a contractor to prepare the construction area, lay the foundations, construct the steel frame and install the communication equipment, with the Company's engineering team overseeing construction, connecting the signal and conducting tests to ensure that the quality of the work meets the customer's specifications and is handed over as scheduled, with an average time for project construction of approximately 45 - 60 days. The Company also provides an after-sales service with a 1 year warranty period to ensure customer satisfaction and confidence in the quality of the work and over time the Company has built up confidence with customers who repeatedly use the Company's services. Since telecommunication technology is constantly changing and the deterioration of steel frames due to length of use, the Company has business opportunities from an increase in the installation of telecommunication towers and/or the replacement of existing towers with larger installations.

It is not Company policy to purchase steel frames and equipment in advance since each project has will have characteristics and specifications and/or product properties that are different. The Company will order products once the project is underway, referencing the prices agreed with trading partners before entering the auction on each occasion.

- **Installation of passive fire protection systems**

For the installation of passive fire protection systems, the Company will inspect the site where the customer wishes to install the system and assess the types of materials and equipment needed to present for the



customer's approval. Once approval is given, the Company hires a contractor to carry out the installation, under the supervision of the Company's engineering team to ensure the quality of the work and that the work is completed as scheduled. The design and installation will include safety and aesthetic considerations in order to ensure the highest level of customer satisfaction. The time taken for the installation of passive fire protection system depends on the area where the system is to be installed and the time period of the building's construction.

3. Raw materials and inventory policy

Company policy is to store inventory for 30-45 days, which makes allowances for fluctuations in price, especially the price of electrical wires which is susceptible to fluctuations in copper prices, storage costs, inventory becoming obsolete, changes in technology, the quantity and frequency of delivery to vendors, the time taken to make deliveries to customers, as well as increased and reduced demand in line with the country's economic conditions. The Company has warehouse facilities at 2 locations, the first is located in Pakkred, Nonthaburi, and the second is at Sri Racha, Chonburi. Being able to hold goods at the Company's own warehouses allows the Company to deliver products immediately and provide ongoing services to customers. It is not Company policy to purchase steel frames and equipment in advance since each project has will have characteristics and specifications that are different. The Company will order products once the project is underway.

Projects have not yet delivered.

- None –

Environmental impacts

The Company's distribution operations have no environmental impact, while installation operations are always carried out in strict accordance with agreements relating to the environment. The Company has never received a warning or been fined over environmental issues.



Risk Factors

The Company realizes the importance of risk management as a systematic and effective risk control.

The risk is classified into 3 parts as follows:

1. Risk from Business Operation
2. Financial Risks
3. Other Risks

1. Risk Factors from Business Operation

The Company leading business activity is divided into 2 categories which are: trading business or sale agent and provision of service and design and installation of infrastructure passive fire protection systems etc.

Therefore, the risk analysis concerning the 2 aforesaid disciplines as follows:

1.1 Trading business

1.1.1 Risks from fluctuation of the copper price

The revenue derived from sale of electrical wires accounted at 56%, 51% and 55% of total revenue in year 2016 - 2018 respectively. Since main cost of electrical wire is a copper, the fluctuation its price directly affects the purchasing and selling price of electrical wires. Failure to adjust the selling price to be in accordance with increasing cost, or without proper management of the inventory, can subsequently affect the operation and financial status of the Company. Copper is categorized as a commodity product where the price is varied by global demand and supply.

However, the Company recognizes the importance in the management of such risks. The Company's strategy in managing the sales prices of its goods, in line with the cost varies depending on the price of copper. If there is good management. Such volatility will not affect the results of operations and financial position of the company. The company has set guidelines to prevent and reduce the risk of fluctuations in copper prices in the future as follows.

1. The Company monitors copper prices on a regular basis to follow proper inventory management of electrical wires, and to be consistent in line with changes.

Normally, the fluctuation² of copper prices takes 6-7 months (lapse time) to have effect on the selling price and cost of electrical wires

2. the Company has always review and followed up the changes in the inventory to planning, Control inventory management. before having effect on the cost increase or decrease of goods.
3. Increasing efficiency in shipping by focusing on reducing the time of delivery.



4. The policy to deliver goods directly to the customer for the products is used in the project (Matching Order).
5. The Price Management effectively by The characteristics of the company's products are buy to sell. The pricing method plus the added (Cost Plus) if the price cost of goods has a change up or down. The company can adjust the gains that added in the price to be appropriate. To continue to make the company can sell or release products inventory according to the situation at the moment.

Even though the price of copper is uncontrollable, policy on managing inventory and strategy of setting up the selling price would be the key factors to mitigate effect from fluctuation on the price of copper at some level. The sale period is averaged between 30-45 days which is consistent to the Company's policy what states that the products should be stored for not more than 30-45 days.

1.1.2 Risks from Dependency on Major Suppliers

In 2016 - 2018, the electrical wires representing around 50%, 52% and 54% of total purchase of finished goods were purchased from Phelps Dodge International (Thailand) Company Limited ("Phelps Dodge"), an affiliate of General Cable Corporation and a subsidiary of Phelps Dodge International Corporation. As Phelps Dodge has no policy to make the long term contract with any sales agents, the Company is exposed for risk from dependency on such supplier. In the event that Phelps Dodge decides to sell its product directly to the customers and/or terminate the sale made with the Company; and/or fail to deliver the products as ordered by the Company; and/or increases the price of product without advance notice; and the Company cannot procure products from any alternative source in order to meet customer's time frame, the event could adversely affect sales volume as well as reliability, business operations and following financial status of the Company.

However, it is predicted that such factor will not cause significant impact to the Company as the said supplier has no policy to engage in direct distribution of their products. In addition, the Company has maintained good relationship between the supplier through constant order of electrical wires since 1999 as well as good purchase and payment history. In domestic market, the Company is the biggest distributor of Phelps Dodge products. Another supporting factor is that there are a number of domestic manufacturers of electrical wires and importers of overseas products which can be counted as alternative source. Those domestic suppliers also agree to have the Company as their distributors. All in all, the Company believes that the impact from dependency on major manufacturers will not be significant.

1.1.3 Risks from competition and new players

As the trading business does not require specialized techniques or complex skills, new entrepreneurs can manage to enter easily into this business. For this reason, it is estimated that in the future, the Company might experience the risks from numerous of new competitors. Such risk may affect the operation and financial status of the Company.

However, to run business smoothly, there are also crucial factors required such as a good relationship with suppliers; variety of product ranges and large stock enabling flexibility and ability to support customers'



requirements in a timely manner; punctual delivery; marketing strategy to extend the customer base; and working capital allowing reserving large quantities of products. Taking into account the importance of management strategies implemented, the Company has diversified categories of products covering whole segment of electrical systems, including certain installation. The Company's sales scope covers all products related to electrical systems, which enables convenience to customers in purchasing and collecting products. Goods are stored in large 2 warehouses with location convenient for customers' and transportation. This allows the Company to have sufficient storage and distribution within scheduled time frame. Comparing entrepreneurs in the same business field, the Company has advantages over them in term of funds and quantity of products, which build reliability on quality of service to customers.

1.2 Service of design, procurement and installation of communication systems

1.2.1 Risks from inconsistent revenue derived from Projects

The Company's services of designing and installing of communication systems is to render activity in the form of short term projects, without covenanted of long term contract. Therefore, the income derived from such projects is inconsistent and considered as unstable income toward the future. Nonetheless, the Company is independent from the owners of telecommunication or mobile networks operators but has good relationship and working experience with the mobile phone services operators and their major contractors. Being accounted as trustworthy and reliable firm from all mobile phone networks operators, the Company has orders from them regularly and consistently.

Furthermore, with aim to generate additional income and to lower the risk of inconsistent revenue derived from design, procurement and installation of communication system, the Company plans to extend scope of products by allowing electrical materials and equipment such as electrical wires, lightings, materials and fire protection equipment, etc.

1.2.2 Risks from delay in project completion

The design, procurement and installation of fire protection systems and telecommunication systems is rendered under projects with duration between 3 months to one year. In some projects, the delay in project completion is subjected to indemnification. Late project completion may cause higher cost of production to the Company as well as exposure to the risk of being charged for such delays.

To prevent the risk of delay in project completion, the Company has imposed advanced plan by coordinating with related parties such as suppliers, sub-contractors, engineers from the customers; closely follow-up and monitor the product delivery and installation tasks, allocate proper labor force to handle quantity of work. Constant following up work procedures allows the Company to address the problems and execute quick solutions, deliver project and/or products within specified time frame. So far, the Company has no records of delays in project delivery or being subject to claims for damages of such delays.



1.2.3 Risks from dependency on engineers

To undertake, proceed and complete the project within scheduled time frame, the Company requires personnel with experience and competent skills, especially an engineer's whose duties covers design, work control and management until the completion. Engineer duties and work performance have direct impact to the cost of production, duration and customers' requirement. Therefore, losing the team of these engineers may affect the availability to undertake work as well as capability of managing projects.

The Company is aware of the importance of personnel, which is a key factor in business. The company has a policy on risk prevention as follows:

1. Setting proper salary rates and compensation rate.
2. Provision of welfare and incentive to maintain employees' dedication to the organization in a long term.
3. Provides training courses and seminars to its employees on regular basis and develop technical knowledge and skills to be professional.
4. Decentralize the management authority to reduce dependency on individual personnel.

That's why the Company has major engineers with competent expertise and experience who have been working with the Company for more than 13 years, in design and installation of telecommunication systems. During the past 13 years, there is only one engineer resigned from the Company, from total of 36 engineers on board.

2. Financial Risks

2.1 Risks from debt collection

As of 31 December 2016 - 2019, the Company had trade and other receivables of 1,869 million baht, 1,838 million baht, and 1,620 million baht, respectively, representing approximately 49%, 51% and 47% of total assets. The account receivables before deduction of allowance of doubtful accounts totaled of 1,335, 1,280 and 1,221 million baht in year 2016-2018 respectively, while other receivables totaled of 598, 618 and 465 million baht respectively. Most of the account receivables are customers from trading business. Normally, customers from trading business are granted credit when purchasing, which means that the growth of sales volume or revenue derived is followed by growth of debt value from account receivables. Furthermore, majority of our customers are from private sectors which presently reached 3,200 nationwide. The Company is exposed to the risk of delays in payment and incompliance with credit terms or even the possibility to get doubtful accounts. Such risks might affect the liquidity, operations and financial status of the Company.

Taking into consideration the quality of account receivables, payment follow-up and debt recovery are crucial factors in business operation. To lower the risk, the Company has formulated policies concerning debts by consider the grant of credit to each customer based on credit rating from history of financial statements, financial analysis, stability and their business growth, as well as regular review on credit loan. Normally, the Company allows 30-120 days for payment; therefore, the debt collecting period is 102, 120 and 98 days between years 2016-2018



respectively. The meeting of the board of directors is held on regular basis to monitor and follow the procedure and result of debt collection. The Company sets allowance for doubtful accounts at 50% and 100% for the payment delay longer than 6 and 12 months respectively. Allowance of doubtful account is reserved at total amount of 65, 61 and 67 million baht at year end of 2016-2018. Therefore, the net account receivables stood at 1,271 million THB, 1,220 million THB and 1,155 million THB in the same period of years. The amount of account receivables at 1,155 million baht at year end of 2018 to 31 January 2018 has significantly decreased to 733 million baht.

Other account receivables after deduction on allowance of doubtful accounts in installation of fire prevention system accounted at 598 million THB, 618 million THB and 465 million THB at year end of 2016-2018 respectively. Other receivables from completed projects but the invoices have not been cleared yet are mostly from installation of telecommunication projects accounted at 522 million THB, 587 million THB and 428 million baht during the same period in each year respectively. The account receivables from installation of telecommunication projects are main contractors of the mobile phone network operators, which has reputation and stable financial status, good payment records and in some cases, the service charge were paid in advance. Therefore, the Company is able to collect the debt smoothly without reserving allowance for doubtful accounts and/or bad debt incurred. The executives have estimated that there is minimal chance that the Company will not be able to collect debt from such project. The total value of completed projects, but the invoices have not been cleared as of 31 December 2018 with value of approximately 428 million Baht the new site projects represented 81%. As of 31 January 2018, the total value of completed projects where payment haven't been collected yet, accounted at 235 million baht.

Moreover, the Company has the measures to protect a risk by purchasing the insurance policy to cover defaults on payment of account receivables at maximum amount of 3,000 million bath. In case of default on payment of the receivables, the insurance company is liable to indemnify to the Company at actual amount in total not exceeding 200 million baht. Such amount is sufficient to reduce the risk. Comparing to previous records where the bad debt and/or debt which need to reserve allowance of doubtful account were low, total amount accounted approximately 67 million baht. The Company reviewed that the insurance will benefit and reduce risk from unviability to collect debts from customers, and will consider to buy such insurance in the future.

2.2 Risks from changes of interest rate

As of 31 December 2016 and 31 December 2017, most of the interest bearing debt of the Company consisted of overdraft loan and loan from the financial institutions in the total amount of 345 million baht and 297 million baht, respectively. The above interest bearing debt had been referred to the floating interest rate - THB FIX. Therefore, such interest rate tends to increase; the Company would have more interest expense according to the higher interest rate.



The Company managed such risk by maintaining proportion of the floating interest bearing debt at the level consistent with nature of operating business. As the Company received several loan facilities from several financial institutions, the Company could choose to use the loan facilities with the term of payment suitable to the situation at particular time. Moreover, after listing the security of the Company in the Stock Exchange of Thailand, the Company has set its objective to use some funding from IPO as working capital, which would mitigate burden from interest expense of the Company in the future at some level.

2.3 Risks from working capital

In the normal business operation regarding distribution of electrical wires and equipment and services of installation of telecommunication system, the Company requires working capital for purchasing products and maintaining inventory for sales. This should represent variety and adequate quantity to meet the customers' demand. In regard to service of installation of telecommunication systems, the Company also requires working capital for purchasing, hiring and preparing tasks prior to receiving the payment from the customers according to the agreement. To manage cash flow, the Company utilized the short term loan from the financial institutions which are bank overdraft, promissory note, and factoring service as a working capital. The liquidity ratio was approximately 1.56 and 1.45 in 2016 and 2017 respectively. The quick ratio was approximately 1.09 respectively in the same period.

3. Other Risks

-None-

Business Assets

Property, plant and equipment

As of 31 December 2017 and 2018, the Company and its subsidiaries had properties, plants and equipment listed as follows:

Items	Net book value (THB Million)		Type of ownership	Obligation
	31 Dec 2017	31 Dec 2018		
<p>1. Land consists of</p> <ul style="list-style-type: none"> - Land title no. 93838, area 12-0-49 rai, location: Sriracha district, Chonburi - Land title no. 14343, area 25 square wah, location: Pakkred district, Nonthaburi - Land title no. 14481, area 25 square wah, location: Pakkred district, Nonthaburi - Land title no. 2404, area 13-2-74 rai, location: Pakkred district (Talad Kwhuan), Nonthaburi (acquired on 4 February 2013) has land divided into 2 plots on 27 August 2018 <ul style="list-style-type: none"> - Land title no. 88429, area 5-0-39 rai - Land title no. 88430, area 8-2-16 rai - Land title no. 16288, area 104 square wah, location: Ladprao district, Bangkok - Land title no. 16289, area 104 square wah, location: Ladprao district, Bangkok - Land title no. 16290, area 60 square wah, location: Ladprao district, Bangkok 	171.12	171.12	Under ownership of the Company	mortgaged
	Sold			
<p>2. Building consists of</p> <ul style="list-style-type: none"> - Two-storey office building and one storey warehouse, total areas approximately 4,500 sq.m. - Three-storey townhouses, 1 units, No.53/343 located at Pakkred district, Nonthaburi - Three-storey townhouses, 1 unit, No.53/430 located at Pakkred district, Nonthaburi - The New Office Building No.329 Moo.3, Banmai, Pakkred, Nonthaburi 	182.83	171.79	Under ownership of the Company and its subsidiaries	mortgaged
	Sold			



Items	Net book value (THB Million)		Type of ownership	Obligation
	31 Dec 2016	31 Dec 2017		
3. Office decorating items	5.68	4.85	Under ownership of the Company and its subsidiaries	None
4. Tools and equipment	4.07	2.07	Under ownership of the Company and its subsidiaries	None
5. Office equipment	11.38	7.75	Under ownership of the Company and its subsidiaries	None
6. Vehicles	20.13	17.91	Under ownership of the Company/purchaser/ financial lessee	Under hire-purchase contract and financial lease
7. Equipment installed as per contract	14.14	10.81	Under ownership of the Company	None
8. Asset under transfer	-	0.38	Under ownership of the Company	mortgaged
Total	409.35	386.68		

- Remarks : 1. In 2017 and 2018, the Company mortgaged land and buildings under ownership of the Company, at value approximately THB 198 million respectively to the financial institutions.
2. As of 31 December 2016 and 2017, the Company and its subsidiaries have a certain amount of property, plant and equipment which has been deducted the depreciation cost, but remained in used. The book value before deduction of accumulated depreciation of such assets accounted at 51 and 54 million THB respectively.
3. Some assets are under the financial lease contract and hire purchase contract where the Company acts as a lessor and purchaser. The net book value as of 31 December 2017 and 31 December 2018 accounted approximately THB 22 million and THB 21 million respectively.
4. The equipment installed as per contract are lights and energy-saving bulbs under Smart Way Project launched by the Energy Engineering Institute, Kasetsart University and the Electricity Development Division, Provincial Electricity Authority. The two institutes jointly determined the policy on saving public energy. The Company was assigned to invest in installation of energy-saving lights and 10 year maintenance. The yield upon investment is equal to value of the energy saved during such period.

**Real estate for investment**

As of 31 December 2017 and 31 December 2018, the Company and its subsidiaries have real estate for investment which can be shown as follows:

Items	Net book value (THB Million)		Type of ownership	Obligation
	31 Dec 2017	31 Dec 2018		
1. Land title no. 63680, area 100.1 square wah, location: Nongchok district, Bangkok	-		Under ownership of the subsidiary	-
2. Land title no. 16288-90, area 104 square wah and 60 square wah location: Ladprao district, Bangkok	2.68	2.68	Under ownership of the subsidiary	

Material part of the contract**1) Lease contract of warehouse****Lease contract of warehouse in Pakkred district, Nonthaburi**

Parties	:	Mrs. Pornpimol Dechkhamhaeng (as a "Lessor") a person not related to the Company
	:	Communication & System Solution Public Company Limited (as a "Lessee")
Date of contract	:	1 January 2019
Asset of lease	:	Land, land title no. 22687, 22695, 22696, located on Tiwanont Road, Ban Mai Sub-district, Pakkred District, Nonthaburi, the area approximately 600 sq. wah. The purpose is to use the land for storage.
Rental rate	:	35,000 THB /month.
Term of contract	:	3 years start from 1 January 2019 to 31 December 2021
Conditions of contract	:	The Lessor agrees to renew the contract for another period of 3 years from the date of expiration under the same conditions.



Investment policy in Subsidiaries.

1. At the present, the Company has invested in 2 subsidiaries

- 1) C.S.S. Energy Co., Ltd. ("Subsidiary") by holding 99% of registered capital and paid-up capital. The firm engages in a business mainly related to government authorities; act as an agent in purchase-sale of products.
- 2) Neonworx Communications (Thailand) Co., Ltd. (NWC) by holding 70% of paid-up capital. NWC is doing business about telecommunications as an agent installation, antenna and maintenance by Turnkey.

2. At present, the Company has invested in 2 associated companies.

- 1) Namsor Hydro Power Company Limited in proportion 38% of registered capital and paid-up which is located in Laos with the original purpose of operating for conducting hydropower business.
- 2) Phu Khanh Solar Power Joint Stock Company in proportion 25% of registered capital and paid-up which is a company incorporated and registered under the laws of Vietnam with the original purpose of operating for conducting Solar power Plant in Fujian province, Socialist Republic of Vietnam. There are 2 projects with total capacity of 99.216 MW.

The future investment in subsidiaries, joint ventures and related companies will be concentrated on business that support and benefit the Company. The Company will consider factors related to yield and investment return that will support and promote business of the company group, proper investment proportion and yield upon investment, and benefit of the shareholders. Company will dispatch the directors and/or designated person to act as the Company's representative in accordance with proportion of shares, to participate in business management, including voting in the board of directors' meeting and shareholders' meeting for the highest benefit of the Company.

Legal conflicts

As of 31 December 2018, the Company and its subsidiaries has no legal conflict that may cause negative impact to the assets of the Company which value higher than 5% of the shareholders as of 31 December 2018.



General and other important information

General information

Name of Company	: Communication & System Solution Public Limited Company
Stock Symbol	: CSS
Nature of business	: Distribution of electric cables and other electric devices, provision of telecommunication systems, passive fire protection products etc.
Head office	: 329 Moo.3, Banmai Sub-district, Parkred District, Nonthaburi
Ramkamhaeng branch office:	: 142 Soi Ramkaemhaeng 40, Huamark sub-district, Bang Kapi district, Bangkok
Chonburi branch office:	: 59 Moo 7, Bang Phra sub-district, Sriracha district, Chonburi
Company Registration No	: 0107548000561
Tel.	: 02-018-1111
Fax	: 02-018-1142
Website	: www.cssthailand.com
Company Secretary	: Ms. Nongnuch Temeesrisuk Tel. : 02-018-1111 / E-mail : secretary@cssthailand.com
Investor Relations	: Mrs. Prapussorn Lakwuthiwong Tel. : 02-018-1111 ext.5501 / E-mail : prapussorn@cssthailand.com
Registered Capital	: THB 588,036,884.50, divided into 1,176,073,769 shares at the par value of THB 0.50 per share
Paid-up capital	: THB 587,869,544.50, divided into 1,175,739,089 shares at the par value of THB 0.50 per share

General information of the subsidiary

Name of subsidiary (1)	: C.S.S. Energy Co., Ltd.
Nature of business	: Engage in the business relevant to the government authorities and energy business
Head office	: No.329 Moo.3, Banmai Sub-district, Parkred District, Nonthaburi
Chonburi branch office:	: No.59 Moo.7, Bang Phra sub-district, Sriracha district, Chonburi
Company Registration No	: 0125540007891
Tel.	: 02-018-1111 Fax: 02-018-1142
Registered Capital	: THB 150 million, divided into 1,500,000 shares, at the par value of THB 100 per share
Paid-up capital	: THB 150 million, divided into 1,500,000 shares, at the par value of THB 100 per share
Portion of shares held	: 99.99% of the registered and paid-up capital



Name of subsidiary (2) : Neonworx Communications (Thailand) Co., Ltd.

Nature of business : Provision of telecommunication systems and turnkey maintainance

Head office : 10 soi Naknivas 47, Naknivas Road, Ladprao Sub-district, Ladprao District,
Bangkok.

Company Registration No : 0105549083701

Tel. : 02-539-6693 Fax: 02-539-6795

Registered Capital : THB 10 million, divided into 100,000 shares, at the par value of 100 per share

Paid-up capital : THB 10 million, divided into 100,000 shares, at the par value of 100 per share

Portion of shares hold : 70% of the registered and paid-up capital

Reference

Securities registrar : Thailand Securities Depository Co., Ltd
The Stock Exchange of Thailand Building,
93, Rachadapisek Road, Din Daeng sub-district,
Din Daeng district, Bangkok 10400
Tel.: 02-009-9386 Fax: 02-009-9476

Auditors : Ms.Krongkaew Limkittikul and/or Mr.Supachai Phanyawattano
and/or Mr. Natthawut Santipet
EY Office Limited.
33rd Floor, Lake Rajada Office Complex,
193/136-137, New Rajadapisek Road, Klongtoey, Bangkok 10110
Tel.: 02-264-0777 Fax : 02-264-0789-90

Internal Audit : Riskless Solution Co., Ltd.
43 Soi Udomsuk 30 yaek 1 , Bangna, Bangkok, 10260 Thailand.
Tel.: 086-379-8600

Other information

-None-