



## 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.

The Company also has 2 branch offices

1. Ram40 branch at 142 Soi Ramkhamhang 40, Ramkhamhang Road, Huamak, Bangkok.
2. East branch at 59 Moo.7, Bang Phra, Sri Racha, Chonburi.

The company increased the capital from 1 million to baht 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

2015	April	Resolutions of the Annual General Meeting 2015 was resolved as follows;
		<ol style="list-style-type: none"><li>1. Decreased the share capital from 490 million baht THB 489,995,978.50 by canceling the shares are resold number of 8,043 shares with par value of Baht 0.50 per share as offered in all respects.</li><li>2. Increased of the registered capital from 489,995,978.50 Baht to 587,995,174.50 Baht to support the payment of stock dividends and adjustment of CSS-W1.</li></ol>



May The Company entered into the acquisition of 63,000 shares in Neonworx Communications (Thailand) Co.,Ltd. ("NWC"), or 70% of total registered capital of NWC with par value of Baht 100 per share. NWC do a business about telecommunications as an agent installation and maintenance the telecommunication system by turnkey.

The Board of Directors Meeting No. 3/2015 resolved to ratify the cancellation of a joint venture in Prime Renewable Energy Co.,Ltd.

August Resolutions of the Extraordinary Meeting of Shareholders No. 1/2015 was resolved the amendment to the Company's objectives by increasing the purpose from (51) to (53) to support the business of energy.

The Company moved the head office from 475,477 Moo.9 Bondstreet Rd. bangpood, Pakkred, Nonthaburi to 329 Moo.3 Banmai, Pakkred, Nonthaburi where it nowadays.

#### Award of the year 2015

- Awarded by the Ministry of Labour That is the establishment of a dedicated project security establishment of honor HRH Princess Maha Chakri Sirindhorn's.

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 from the lasted of the CSS-W1 and registered the amendment of the memorandum of association at Ministry of Commerce since 7 April 2016

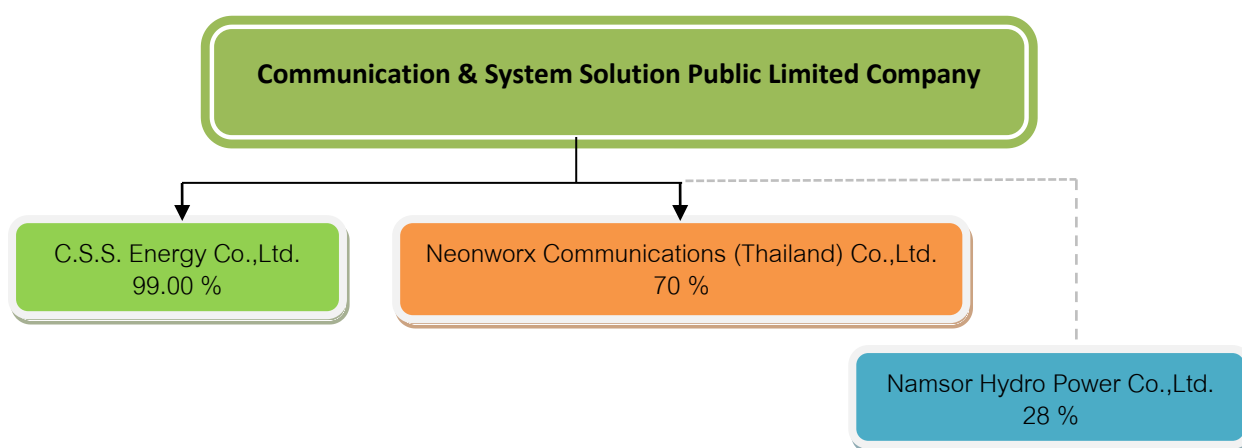
#### Award of the year 2016

➤ 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.

#### 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.

**Connection with the businesses of major shareholders**

-None-



## Business Characteristics

### Revenue Structure

Types of Products	2015		2016		2017	
	Million Baht	%	Million Baht	%	Million Baht	%
Electrical Wire	2,186.94	47.83	2,639.88	56.01	2,288.04	51.27
Lamp and lighting Equipment	499.85	10.93	441.60	9.37	431.56	9.67
Electrical conduits and fittings	168.09	3.68	132.70	2.82	114.63	2.57
Electrical system control equipment	221.87	4.85	270.86	5.75	373.49	8.37
Passive fire protection materials and equipment	36.82	0.81	40.98	0.87	40.62	0.91
Electrical Transformers	23.48	0.51	25.76	0.55	13.90	0.31
Others	37.25	0.81	16.74	0.36	8.27	0.19
<b>Total Sale Revenues</b>	<b>3,174.30</b>	<b>69.42</b>	<b>3,568.52</b>	<b>75.72</b>	<b>3,270.51</b>	<b>73.29</b>
Telecommunication system installation revenue	1,278.49	27.96	1,050.18	22.28	1,114.71	24.98
Passive Fire protection system installation revenue	35.89	0.79	43.62	0.93	35.31	0.79
Electrical equipment installation revenue	15.86	0.35	-	-	-	-
Other services revenue	10.71	0.23	31.60	0.67	18.45	0.41
<b>Total installation service revenues</b>	<b>1,340.95</b>	<b>29.33</b>	<b>1,125.40</b>	<b>23.88</b>	<b>1,168.47</b>	<b>26.18</b>
Brokerage income	34.70	0.76	-	-	-	-
Other income	22.55	0.49	19.14	0.41	23.51	0.53
<b>Total Revenues</b>	<b>4,572.50</b>	<b>100.00</b>	<b>4,713.06</b>	<b>100.00</b>	<b>4,462.49</b>	<b>100.00</b>

### 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, Philips 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 2016 and 2017, revenues from the distribution operations made up 76% and 73% of total revenue respectively. Products which the Company distributes can be divided into 6 main types: electrical wires, lamps and lighting equipment, 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 56% and 51% of total revenues in 2016 and 2017 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 Lamps and lighting equipment



Lamps and lighting equipment are quality products which the Company distributes on behalf of several companies, making up about 9% and 10% of total revenues in 2016 and 2017 respectively. The lamp and lighting have 3 types such as lamp and lightings, Electrical Equipment hazardous areas and Emergency lighting systems.

#### 1.3 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 Arrowpipe brand and white UPVC 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 CCG, ARR, TST and CS Wire way brands. Electrical conduits and fittings accounted for approximately 3% of revenues in 2016 and 2017.

#### 1.4 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 6% and 8% of revenue in 2016 and 2017.

#### 1.5 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 2016 and 2017.

#### 1.6 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 0.6% and 0.3% of revenues respectively in 2016 and 2017.



## **2. Design and installation business**

In 2016 and 2017, installation services made up approximately 24% and 26% 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 18 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 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 2016 and 2017, design, purchasing and installation services for telecommunication systems accounted for 22% and 25% 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	122.70	Oct 2015 – Jun 2018
True Move Year 2016_900 MHz&1800 MHz(South)	Ericsson (Thailand) Co.,Ltd	Company	New Site	35.35	Jan 2016 – Dec 2017
True Move TE Installation Year 2016_900 MHz&1800 MHz	Ericsson (Thailand) Co.,Ltd	Company	New Site	30.45	Jan 2016 – Dec 2017
True Move Year2016_900 MHz&1800MHz (Bangkok)	Huawei Technologies (Thailand) Co.,Ltd	Company	New Site	30.82	Feb 2016 – Dec 2017
True Move Year 2016_900 MHz&1800 MHz (East)	Huawei Technologies (Thailand) Co.,Ltd	Company	New Site	19.50	Feb 2016 – Dec 2017
True Move Phase 4.6 & 11 for 900 MHz (BKN&East)	True Corporations PCL.	Company	New Site	16.22	Feb 2016 – Dec 2017
True Move 900 MHz for Village Site (East Region)	True Corporations PCL.	Company	New Site	106.99	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	34.70	Feb 2016 – Dec 2017
DTN Year 2016 Project	DTAC	Company	New Site	290.56	Jul 2016 – Jun 2018
LTE 2100 Phase 5 Densification	Huawei Technologies (Thailand) Co.,Ltd	Company	New Site	13.45	Jul 2016 – Jun 2018
DTAC 2016 Expansion (TE Installation)	Ericsson (Thailand) Co.,Ltd	Company	New Site	3.48	Jul 2016 – Dec 2017
True Move LTE2100 Phase 5 Densification (New Site)	True Corporations PCL.	Company	New Site	31.88	Aug 2016 – Dec 2018
True Move Pracharath School Project (East&South)	True Corporations PCL.	Company	New Site	10.40	Sep 2016 – Jun 2018
True Move Special Project	True Corporations PCL.	Company	New Site	116.01	Jan 2016 – Dec 2018
DTAC 2017 Network Evolution New Build Project	DTAC	Company	New Site	564.55	Mar 2017 – Jun 2018
True Move 4G Enhancement Project (Upgrade) (South)	Ericsson (Thailand) Co.,Ltd	Company	New Site	13.19	Jan 2017 – Jun 2018
New Site True Move 4G Enhancement Project	True Corporations PCL.	Company	New Site	73.27	Mar 2017 – Dec 2018
True Move 4G Enhancement Project (Upgrade) (East)	Huawei Technologies (Thailand) Co.,Ltd	Company	New Site	5.04	Jun 2017 – Jun 2018
Turnkey Project of rollout for DTAC cell Site year 2018 - 2020	DTAC	Company	New Site	114.40	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 2016 and 2017, fire protection system design, purchasing and installation and other services accounted for approximately 2% and 1% of the Company's total revenue.



## 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](http://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 2016 and 2017 accounted for approximately 88% and 99% 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 2016 and 2017 accounted for approximately 11% and 0.20% 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 2016 and 2017, these customers accounted for approximately 1% and 0.80% 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.

From the Krungsri research Center, overall about construction business during the period from 2017 to 2019. The company is likely to benefit from the massive investment in state-owned infrastructure with more than 50 projects within the year 2024 which is the important driving factors causing the expansion of the construction business. While the private sector project is expected to gradually recover from years 2018. In the first half of the year 2017 there are large projects of Government opened bidding more than the several past years. That make an investment in Mega Project of the government is continuous and The new project into the construction stage simultaneous. In the second half year, there are major projects, for example; double-track railroad construction linking Lopburi – Pak Nam Po and double-track railroad construction linking Map Ka Bao – Jira road. Motorway projects with Bang Pa In – Nakhon Ratchasima line and BangYai – Kanchanaburi line. Moreover, the government also plans to invest in infrastructure under the Annual Budget 2017.

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, mainly 3 networks service are AIS, DTAC and TRUE MOVE (include True Move H) they have accelerated the improvement of cellular signaling system such as adding new site of telecommunication and add more tuners to accommodate the quantity of mobile phone users increased.

For an overview of communications business in the year 2017 is a "continuous growth" by NSTDA. The communications market is expected to have a value of 632,120 million baht. 9.5% increase from last year at 7.7% growth, based on the growth of the market and the market of communication devices. There are important factors that support comes from the change because of consumers switching to smartphone to accommodate the demand, access to information and the Internet anywhere at any time. Including receiving impulses from business development on various platforms in the online world, and the use of digital media content for advertising and PR is expanding continuously such as financial transactions (E-Payment), E-Commerce and the use of data communication services (Cloud Service). Also the license auction holding frequency 900, 1800 and 2100 MHz in the past. The Government's projects to expand Internet advocates for every village. Cause contribute to The telecom service provider's investment in equipment the main network to cater to the use and expand the customer base. However, the major operators Slow down investment in network development principle but increase efficiency by expanding the network Capacity can offer more in the area as the original.

For Telecommunication business in the years 2018 is still continuous growth in the market. There are also plans to invest in a high speed internet connection. To provide a comprehensive service area. This is an opportunity in providing design and installation of telecommunication business.

(Reference : GSB 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 first factory manufacturing electrical wires was opened in 1962. The first factories were small and the industry subsequently experienced growth that led to further expansion and factories producing high-voltage cable and cable of all types and sizes, as well as telephone cables in joint ventures with foreign companies from Japan, Taiwan and the USA, for example. At present, there are 5 major manufacturers of electrical wires in the country:

- Phelps Dodge International (Thailand) Co., Ltd.
- Bangkok Cable Co., Ltd.
- Thai Yazaki Electric Wire 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	2014	2015	2016	2017
● Domestic	99.25	99.42	97.51	97.31
● Oversea	0.75	0.58	2.49	2.69
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
Philips**	Lamps and lighting equipment	Philips Electronics (Thailand) Co., Ltd. ("Philips")	1 year, expired 31 December 2018	- The Company is restricted to distribution in areas specified by Philip, specifically the outer Bangkok area. The Company's distribution area was expanded to include 8 provinces in the upper central region from 1 July 2013. - The Company is not permitted to distribute products in competition with Philips.





Brand	Product type	Partner company	Length of agreement	Important conditions
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
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.	- 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
UPVC	White pvc pipes and fittings	U-Production Co., Ltd.	1 year, expired 31 December 2017	- 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.

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*

\*\* *Philips is one of the biggest electronics companies in the world, with factories and offices in over 60 countries worldwide and its head office in the Netherlands. At present, Philip Electronics (Thailand) Co., Ltd. manufactures its main product groups to meet demand from domestic consumers in the areas of healthcare, lighting and consumer lifestyle. The Company is one of the lamps and lighting equipment of Philips brand.*

\*\*\* *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*



At present, the Company sells electrical materials and equipment without being officially appointed as the 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 20 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 4 locations, the first and second of which are located in Pakkred, Nonthaburi, the third is in Bangkok, Bangkok and the fourth 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 48%, 56% and 51% of total revenue in year 2015 - 2017 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 fluctuation 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 2015 - 2017, the electrical wires representing around 58%, 50% and 52% 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. The head office is located in USA, with more than 25 sales offices worldwide. Phelps Dodge International (Thailand) Company Limited is one of world's biggest manufacturers of electrical wires and cables. 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 oversea 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 4 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 12 years, in design and installation of telecommunication systems. During the past 12 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 2015 - 2017, the Company had trade and other receivables of 1,325 million baht, 1,869 million baht, and 1,838 million baht, respectively, representing approximately 39%, 49% and 51% of total assets. The account receivables before deduction of allowance of doubtful accounts totaled of 1,029, 1,335 and 1,280 million baht in year 2015-2017 respectively, while other receivables totaled of 362, 598 and 620 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 noncompliance 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 101, 102 and 120 days between years 2015-2017 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 67, 65 and 61 million baht at year end of 2015-2017. Therefore, the net account receivables stood at 963 million THB, 1,271 million THB and 1,220 million THB in the same period of years. The amount of account receivables at 1,220 million baht at year end of 2017 to 31 January 2018 has significantly decreased to 845million baht.

Other account receivables after deduction on allowance of doubtful accounts in installation of fire prevention system accounted at 362 million THB, 598 million THB and 618 million THB at year end of 2015-2017 respectively. Other receivables from completed projects but the invoices have not been cleared yet are mostly from installation of telecommunication projects accounted at 300 million THB, 522 million THB and 587 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 2017 with value of approximately 522 million Baht the new site projects represented 71%. As of 31 January 2017, the total value of completed projects where payment haven't been collected yet, accounted at 628 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. 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 61 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 150 million baht and 345 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 1.51 and 1.56 in 2016 and 2017 respectively. The quick ratio was approximately 1.18 respectively in the same period.

### 3. Other Risks

-None-

## Business Assets

## Property, plant and equipment

As of 31 December 2016 and 2017, 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 2016	31 Dec 2017		
1. Land consists of <ul style="list-style-type: none"> <li>- Land title no. 93838, area 12-0-49 rai, location: Sriracha district, Chonburi</li> <li>- Land title no. 14343, area 25 square wah, location: Pakkred district, Nonthaburi</li> <li>- Land title no. 14481, area 25 square wah, location: Pakkred district, Nonthaburi</li> <li>- Land title no. 2404, area 13-2-74 rai, location: Pakkred district (Talad Kwhuan), Nonthaburi (acquired on 4 February 2013)</li> <li>- Land title no. 16288, area 104 square wah, location: Ladprao district, Bangkok</li> <li>- Land title no. 16289, area 104 square wah, location: Ladprao district, Bangkok</li> <li>- Land title no. 16290, area 60 square wah, location: Ladprao district, Bangkok</li> </ul>	171.72	Sold	Under ownership of the Company	mortgaged
2. Building consists of <ul style="list-style-type: none"> <li>- Two-storey office building and one storey warehouse, total areas approximately 4,500 sq.m.</li> <li>- Three-storey townhouses, 1 units,No.53/343 located at Pakkred district, Nonthaburi</li> <li>- Three-storey townhouses, 1 unit, No.53/430 located at Pakkred district, Nonthaburi</li> <li>- The New Office Building No.329 Moo.3, Banmai, Pakkred, Nonthaburi</li> </ul>	192.36	Sold	Under ownership of the Company and its subsidiaries	mortgaged



Items	Net book value (THB Million)		Type of ownership	Obligation
	31 Dec 2016	31 Dec 2017		
3. Office decorating items	7.19	5.68	Under ownership of the Company and its subsidiaries	None
4. Tools and equipment	6.47	4.07	Under ownership of the Company and its subsidiaries	None
5. Office equipment	16.69	11.38	Under ownership of the Company and its subsidiaries	None
6. Vehicles	25.95	20.13	Under ownership of the Company/purcha ser/ financial lessee	Under hire- purchase contract and financial lease
7. Equipment installed as per contract	17.47	14.14	Under ownership of the Company	None
8. Asset under transfer	1.98	-	Under ownership of the Company	mortgaged
<b>Total</b>	<b>439.83</b>	<b>409.35</b>		

- Remarks :**
- In 2016 and 2017, the Company mortgaged land and buildings under ownership of the Company, at value approximately THB 198 million respectively to the financial institutions.
  - 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 24 and 49 million THB respectively.
  - 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 2016 and 31 December 2017 accounted approximately THB 26 million and THB 22 million respectively.
  - 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 2016 and 31 December 2017, 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 2016	31 Dec 2017		
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****a) Lease contract of warehouse in Ramkhamhaeng**

- Parties : Sri Kiri Enterprise Co., Ltd. (as a "Lessor") a person not related to the Company  
: Communication & System Solution Public Company Limited (as a "Lessee")
- Date of contract : 2 July 2015
- Asset of lease : 1) 2-storey building, no. 142 Soi Ramkaemhaeng 40, Huamark sub-district, Bang Kapi district, Bangkok and the warehouse/storage and employees' accomodation, the area is approximately 742 sq.wah.  
2) 2 containers, 1 telephone booth, and equipment used within the building
- Rental rate : The rent is divided into:  
1) 2-storey building and the warehouse/storage and employees' accomodation: THB 130,000 monthly  
2) Containers, telephone, equipment used within the building: 10,000 monthly
- Term of contract : 3 years start from 1 January 2016 to 31 December 2018
- Conditions of contract : The Lessee agrees to make advance payment as a security deposit against damages of the leased asset at the amount equivalent to THB 420,000 to the Lessor. The security deposit shall be returned to the Lessee upon termination of this contract.  
The Lessee agrees to have insurance against fire, flood, storm and natural disasters, including asset within the leased building at the amount no less than THB 9 million. The Lessor is an beneficiary.  
Before due term of this contract, if the Lessee wish to continue the lease, the Lessee shall give advance notice to the Lessor not less than 60 days prior to due date of the contract. The Lessor may adjust the price to be consistent with market condition.

**b) 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 2016
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 2016 to 31 December 2018
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.**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.

At present, the Company has invested in 1 associated company.

The Company has invested in Namsor Hydro Power Company Limited in proportion 28% of total share which is located in Laos with the original purpose of operating for conducting hydropower business.

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 2017, the Company and its subsidiaries has no legal conflict that may cause negative impact to the assett of the Company which value higher than 5% of the shareholders as of 31 December 2017.



## 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	: <a href="http://www.cssthailand.com">www.cssthailand.com</a>
Company Secretary	: Ms. Nongnuch Temeesrisuk Tel. : 02-018-1111 / E-mail : <a href="mailto:secretary@cssthailand.com">secretary@cssthailand.com</a>
Investor Relations	: Mrs. Prapussorn Lakwuthiwong Tel. : 02-018-1111 ext.5501 / E-mail : <a href="mailto:prapussorn@cssthailand.com">prapussorn@cssthailand.com</a>
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

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### 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

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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

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### 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 Miss Waraporn Prapasirikul  
EY Office Limited.  
33<sup>rd</sup> 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 : Dharmniti Internal Auditing Co., Ltd.  
178 Dharmniti Building floor.5th Soi Permsub (Prachachuen20) , Bangsue,  
Bangkok, 10800 Thailand.  
Tel.: 02-596- 0500

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### Other information

-None-