

SPACE AIR GROUND MARITIME SMART SOLUTIONS

THAICOM SUSTAINABILITY REPORT 2020



Message from CEO

Dear shareholders, investors, customers, business partners, and stakeholders,

Since early 2020, The COVID-19 pandemic has affected people around the globe in different ways. In Thailand, the crisis continues to affect all segments including people and businesses. However, at Thaicom, we are not only facing the challenge of handling the COVID-19 crisis, but also at the beginning of the year, we had to manage the migration of customers from Thaicom 5 Satellite to other satellites due to its end of service caused by a technical anomaly. The mission had successfully completed, thanks to our customers as well as the Ministry of Digital Economy and Society (DES) and the National Broadcasting and Telecommunications Commission (NBTC) for their great support.

Moreover, this success is a result of a good teamwork among the Board of Directors, the Managements and all employees who gave their best effort in dealing with the problems in order to overcome challenges and drive business forward under pressure from various factors.

This year (2021), we move towards the 30th anniversary of our operation. Despite the expiration of satellite operating concession in September 2021, we will continue our business operation seamlessly with a licensing regime under the amended NBTC Act that arranged earlier before the transition.

We are confident that our 30 years of experience and expertise in satellite industry together with our reputation that being recognized internationally will be the key factors in driving our sustainable business forward in the future. Furthermore, to be in line with the vision of the company, as the provider of space-air-ground smart solutions, Thaicom is focusing on developing new services based on the integration of various systems namely satellites, unmanned aerial vehicles (UAV), and ground systems such as Internet of Things (IoT). We will also utilize data generated from the integrated network or Big Data to offer various applications from Machine Learning and Data Analytics technologies to create benefits and meet the needs of national and regional customers.

Moreover, Thaicom also realizes the importance of utilizing information for developing the country. Therefore, the Company will support and promote the public sector in becoming a digital government by applying Big Data for analysis, set a direction and plan a strategy for

digital government by applying Big Data for analysis, set a direction and plan a strategy for development to benefit the country in terms of the economy, transportation, water management, weather forecasting and education. These are, such as, using satellite imagery to plan to solve problems for the Thai agricultural sector, analysis of public health data such as patient trends, medical treatment or epidemic control, solving educational disparities and create educational equality among the youth in the country. If you look at the overall picture that the government can use Big Data, in addition to fully enhancing the digital government's capacity, it will also help raise the quality of life for the people as well as the overall economy of the country in all dimensions.

In 2020, the Company has established a successful partnership with our strategic partners. In June, Thaicom announced a satellite business joint venture, 'Nation Space and Technology Company Limited' (NSAT) with CAT Telecom or new entity, National Telecommunications Public Company Limited (NT) to leverage advanced satellite services and solutions.

Later in July, we have inked an agreement with AI and Robotics Ventures Company Limited or ARV, a subsidiary of PTT Exploration and Production (PTTEP) to form drone technology joint venture, called ATi Technologies Company Limited. The new company will focus on agriculture drone development to enable advanced smart farming solutions and strengthen Thailand's agricultural sector.

Additionally, Thaicom is embarking on a technical preparation as well as finding funding source to be ready for future satellite project investment such as the orbital slot usage auction organized by NBTC. The auction is in the process of drafting the proposal and selection method for interested bidders. Moreover, the company will open up new business opportunities and investments by building strategic partnerships with domestic and international alliances as well as the government sector.

Besides business operation, the Board of Directors places importance on good corporate governance. In recognition of the company's outstanding performance in finance aspect together with development of sustainable business with regard

to environmental, social, and governance (ESG), Thaicom joined the Thailand Sustainability Investment (THSI) list 2020 for the 6th consecutive year. Moreover, we received Sustainability Disclosure Award 2020 in recognition of our emphasis placed upon our sustainability performance disclosure, which benefit to all stakeholders.

Finally, I would like to express our gratitude to all shareholders, investors, customers, partners, and stakeholders as well as all executives and employees who support and contribute to Thaicom on this path towards sustainability. I believe that all of us are essential in building a sustainable future for our society, economy, environment and the planet.

Thaicom will be with all stakeholders in order to grow together in a stable and sustainable path.

(Anant Kaewruamvongs) CEO

Anant W.



Summary of Key Performance in 2020

Corporate Governance

- Revision of Corporate Governance Policy
- Revision of Business Ethics
- Revision of Procurement Policy and Regulations
- Revision of Sustainable Development Policy
- No Gift Policy for the fifth consecutive year
- 100% Employees passed the Ethics E-Learning knowledge test
- New Fraud Risk Management Policy

Economic

Net profit Total income Income tax expense EBITDA 514 million baht 4,228 million baht 114 million baht 1,269 million baht

84.9% Customer Satisfaction

88.11%

Supplier ESG Average Scores

Social

0

Employees injured / died from work

20.11

Average training hours per person 71.69%

Employees
passed the Cyber
Security test

89%

Social Fund Sustainability Index Score

Environmental

Greenhouse Gas Emissions (Scope 1 & 2)

- 955 tons CO2e, Thaicom, Nonthaburi, a decrease of 29.05% from the base year.
- 2,266 tons CO2e, Thaicom, Pathumthani, a decrease of 21.70% from the base year.

Water consumption

- 4,515.00 cubic meters, Thaicom, Nonthaburi, a decreased of 38.85%
- 4,180.00 cubic meters, Thaicom, Pathumthani, a decrease of 28.16%

Electricity consumption

- 1,552,000 kWh (5,587,200MJ), Thaicom Nonthaburi, a decrease of 8.15%
- 4,371,660 kWh (15,738,000 MJ) Thaicom, Pathum Thani, a decrease of 5.01%
- 104,545 kWh The amount of electricity produced from solar cells

General waste management

- Plastic waste decreased by 23.7% compared to the base year and 5% target per year.
- Paper waste decreased by 1.84% compared to the base year and 5% target per year.
- "Thaicom We Share Project, Planting Trees" 550 planted by employees or 145% compared to the base year and target.





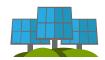




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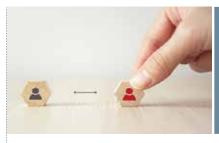
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A Path to Sustainability

VISION

An Asian leading provider of space-air-ground-maritime enabled platforms and smart solutions for a better future

MISSION

To create new revenue streams based on the Space-Air-Ground-Maritime Integrated network & solutions.

To leverage our partnerships and local market knowledge to grow our business.

To become an agile organization to support organization transformation and business diversification.

To operate the business that creates benefits for the shareholders under the principle of corporate governance.

To create social value for sustainable development.

Our Values: EPIC

Excellence in technology

We strive to develop products and services that will answer the needs of tomorrow, leveraging our skills and knowledge to achieve technological excellence.

Passion to challenge We are passionate about the work we do, and about overcoming obstacles; we challenge the limits to turn ideas into reality.

Initiative in innovation

We believe in taking the initiative to develop innovative solutions to meet our stakeholders' needs.

Commitment to contribute

We remain committed to employing our skills and resources in contributing to the sustainable development of our society and country and adhere to good corporate governance. As hard as we have worked to develop innovative new solutions for the business, THAICOM has also consistently made contributions to social development and education initiatives.



Thaicom Sustainability Policy and Objectives

In order to achieve the corporate sustainability goals in accordance with the vision and mission, Thaicom must take into account to operate a business with responsibility to stakeholders and reduce the impact to economic, social and environmental dimensions. The Company has therefore established a sustainable pathway that continues to create value for economic growth while sharing values to society and the environment. With the Sustainable Development Policy, we use as a framework to promote the sustainability of the organization to show our responsibility towards economic, social, environmental dimensions. However, in 2020, the Company has revised this policy to easy communicate with stakeholders and clearly classified material under economic, social, environmental dimensions, while still adhering to the principle of good corporate governance and business ethics. In addition,

the Comany also apply the Sustainable Development Guidelines based on GRI Indicators and the United Nations' Sustainable Development Goals that related to the Company's business operations and directions, including Goal 04 - Quality Education: The quality of education is of equally and comprehensive and promotes life-long learning opportunities for all; Goal 09 - Industry, Innovation and Infrastructure: Build Infrastructure that is resilient and resilient to change and foster industrial development and innovation; Goal 13 - Climate Action: Take urgent action to combat climate change and its impact.



Our Strategies towards Sustainability For the sustainability goals of the organization, the Company operates under the framework of sustainable development.

For the sustainability goals of the organization, the Company operates under the framework of sustainable development. There are strategies to support this action as follows.



1.Doing Business with Responsibility

Our commitment to conducting business with responsibility to society, environment, and all stakeholders by adhering to good corporate governance and business ethics. In order to create added value and investment in businesses that promote sustainability, including innovation development and mutual benefit throughout the business value chain.

Our strategies:

- Strategic partnerships to ensure long term business sustainability beyond the concession
- Develop innovative products and services, and new businesses



2. Caring for People & Society

Adhering to social responsibility regarding human rights and labor laws. Promote the management and care of employees with equality and fairness and good health. Promoting social care by providing equal opportunities to access information and connect with our innovative technology in every area and in every situation for a better quality of life.

Our strategies:

- 1. Employees Skills and Knowledge Development
- 2. Employees Well-being and Engagement
- 3. Thai Kid THAICOM Project
- 4. Promote community (career) development in remote areas



3. Thaicom Loves Earth

Focus on the responsibility to reduce and mitigate the environmental impact of the company's operations by conserving resources and preserving good environmental conditions sustainably.

Our strategies:

- 1. Energy Conservation and Alternative Energy
- Water Consumption and Wastewater Management
- 3. Green House Gas Emissions Management
- 4. Promote Green Offices (Effluents and Waste)
- 5. Planting Trees to reduce GHG

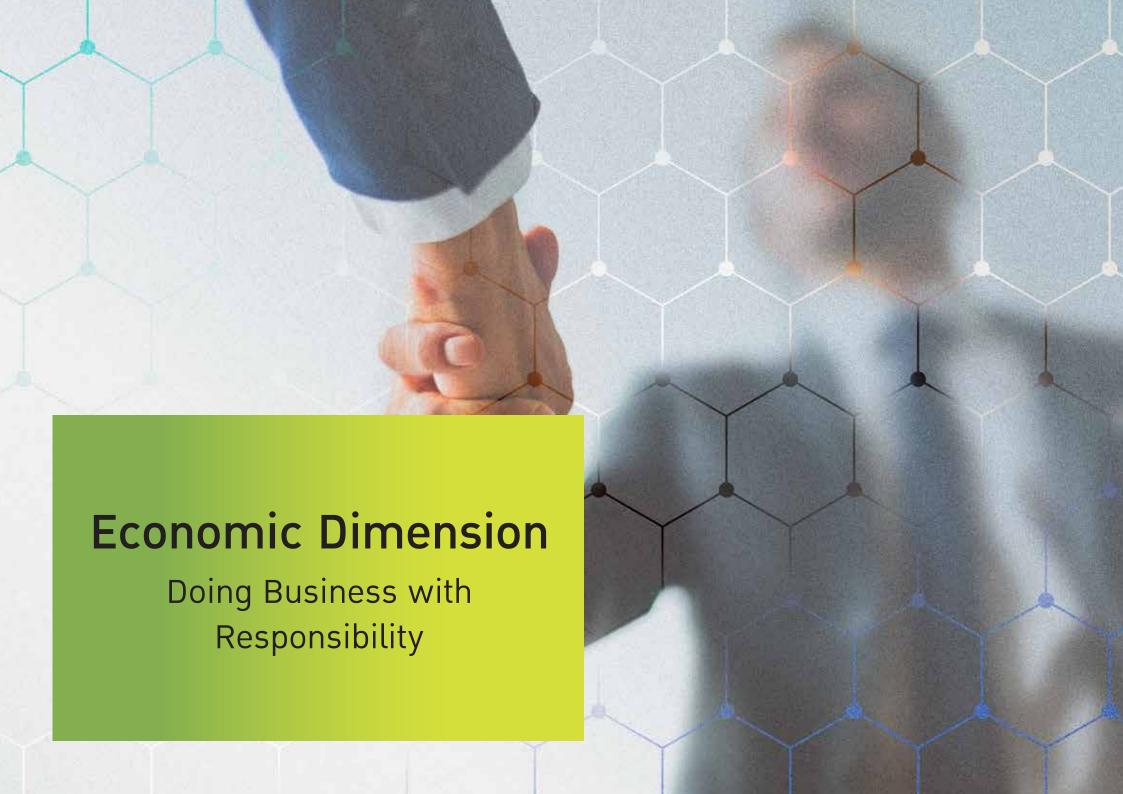
Please see the 2020 Thaicom Sustainable Development Policy in our website at https://www.thaicom.net/wp-content/uploads/2020/11/SD-Policy-2020_EN.pdf



Our Operations in line with the SDGs

SDGs	UN Goals	Thaicom's Operation Guidelines to SDGs	Performance 2020
4 QUALITY EDUCATION	Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Support education in remote areas to reduce the educational gap and provide opportunity to those children/youth. Provide learning management for improving the quality of life to Community for sustainability	 Thai Kid Thaicom Project to promote a distance learning education via satellite. During COVID-19 pandemic, Thaicom provided support the teaching and learning of Setsatian School for the deaf's students and teachers during lock-down period and the second epidemic that the students had to study at home. Knowledge sharing in Technology and satellites. Provides Social Fund for Sustainable Development, especially on career development in remote area with collaboration and applying of learning mechanisms of Non-formal and Informal Education. The scholarship recipients are monitored and evaluated through Thaicom's sustainability indicators.
9 MANUSCH, DOCUMENT AND DEPARTMENT OF	Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Provide communication network thoroughly and available in all circumstances such as disaster. Increase access for information and technology	 Provide Satellite communication network including broadcast service and broadband Internet service. Create innovative services with platform connecting towards communication and Digital technology via satellite in accordance with Thaicom's Space-Air-Ground-Maritime Solutions strategy and combined with internet network such as Nava® Service. Developing apps in space technology and unmanned aircraft together with partners to create a platform of New service that will connect the potential of Big Data from the space network to the ground and sea for thorough data access and in remote areas.
13 COMMIT	Goal 13. Take urgent action to combat climate change and its impacts*	Manage resources and mitigate Environmental impact especially the Climate Change	 Conservation and reduction of energy use and the use of alternative energy such as solar energy by setting goals and measures. Water resources management and wastewater treatment by setting goals and measures. The detection and evaluation of emissions of greenhouse gas of Thaicom and setting goals and measures to reduce carbon emissions from our operations. General waste management such as plastic waste and paper waste by setting goals and measures.







"ASIAN LEADING PROVIDER OF SPACE-AIR-GROUND-MARITIME ENABLED PLATFORMS AND SMART SOLUTIONS FOR A BETTER FUTURE".

Risk Management for Sustainability

Under turbulent situation around the world which affects the economy and creates complex and severe risk factors, Thaicom recognizes the importance of efficient risk management which will help the Company adjust and prepare for new challenges and achieve its business objectives. The Company has implemented Enterprise Risk Management (ERM) according to international COSO ERM and ISO 31000 standards under the Risk Management Committee (RMC), which reports directly to the Audit Committee. The RMC is responsible for considering the risk factors and establishing risk management policies and guidelines for monitoring and supporting various departments as risk owners to effectively manage risks in their responsibilities. In addition, there is a risk management and revenue assurance department at the operational level, which is responsible for coordinating with the risk owners to conduct risk assessment throughout the organization. The report on the organization's risk management is proposed to the Risk Management Committee, the Audit Committee, the Executive Committee, and the Board of Directors for consideration accordingly.

Risk Strategy

Thaicom simultaneously sets its strategic objectives, evaluates relevant risks, and sets up risk appetite, risk assessment criteria and risk tolerance at an appropriate level to uniformly create a standard for risk mitigation in various situation. However, the Company is fully aware that today's rapid pace of changes could also alter certain risk factors. As such, the Company has developed an efficient risk management system to tackle these emerging risks.

Risks Management Procedures consist of 4 steps as follows:

- Risk identification by evaluating possible scenarios based on the Company's goals and context.
- Risk analysis by dual analysis of quantitative data and qualitative data in terms of impact factors.
- Risk assessment by standard procedures throughout the organization to assess the impact of risks and to sort out risk priorities.
- Countermeasures and risk reduction with support and review in each process and risk reports to the Risk Management Committee, the Audit Committee, the Executive Committee, and the Board of Directors respectively.

Risks Factors:

STRATEGIC	OPERATIONAL	FINANCIAL	COMPLIANCE
RISKS	RISKS	RISKS	RISKS
ECONOMIC	SOCIAL	ENVIRONMENTAL	EMERGING
RISKS	RISKS	RISKS	RISKS



Risk Management 2020

Risks	Impact	Mitigation Plan	
Strategic Risks			
Business risk associated with process by the government and NBTC in managing the satellites both before and after the concession that has not been finalized.	May affect the Company's revenue because of an unclear picture on service continuity for both domestic and international customers.	for Partnership (PPP) model for business continuity.	
Operational Risks			
Risk from the shorter service life of satellite than expected.	May lose customers and revenue because the Company cannot launch the replacement satellite in time.	 Satellite Engineering team regularly calculates the remaining service life of the satellites. If the satellite is nearing the expiration, the Satellite Engineering will notify the involved departments to consider on preventive and corrective measures such as transferring customers to other satellites, leasing a satellite, or investing in a new satellite. 	
Risk from satellite in-orbit failure or damage while in space.	May affect the services to customers, temporarily or permanently degrading the satellite's ability to uplink and downlink signals. The Company may loss the current customers and /or may not acquire new customers while replacing the damaged satellite.	 Satellites are designed to withstand a certain amount to the space environment. The satellites can be used continuously and are very stable due to various backup system on board. Prepare a contingency plan to minimize the effects on customers if severe damage to the satellite occurred. We will transfer some customers to available transponders in Thaicom satellites or temporarily lease transponders from other satellites for continuity of service. Have an insurance to cover all risks for all Thaicom satellites. 	
Financial Risks			
Risk of the currency exchange rate fluctuation.	The fluctuation from exchange rate will affect the financial statements and the Company's cash flow because some portion of revenues is received in foreign currency from both domestic and international services as well as loan financing in foreign currency.	 Reduce some risk by netting off cash inflow and outflow as the natural currency hedge. Manage such risk by controlling the net exposure of foreign-currency-dominated transactions by using several hedging approaches such as foreign exchange forward, foreign exchange options and cross currency and Interest rate swap. 	
2. Credit risk	May affect the revenue of the Company.	 Manage such risk by adopting the credit collection and debt management policy. Conduct periodic credit assessments to mitigate the credit risk from default payment from the debtor. 	



Risks	Impact	Mitigation Plan
Compliance Risks		
Domestic Communications Satellite Operating Agreement: (A) Shareholding ratio (B) Back-up satellite	May affect the financial status of the Company but not significantly.	Thaicom has coordinated with the Ministry of Digital Economy and Society and the recently established committee regarding further procedure.
(C) Status of the Thaicom 7 and Thaicom 8 satellites.	May affect the financial status of the Company.	According to Clause 45.6 of the Concession Agreement, the event that the dispute is pending arbitration, the parties still have to comply with the terms of the Concession Agreement. Therefore, while the dispute is pending arbitration, the Company has no duty to comply with the option of the Ministry until the arbitral award.
(D) The Ministry of Digital Economy and Society's demand regarding Thaicom 5.	May affect the financial status of the Company.	1. The Company is confident that the Company has been complying with the Concession Agreement. In this regard, the Company will proceed the defense statement according to the arbitration process. Further, the arbitrator has not yet appointed. Therefore, the Company does not have any duties to comply with any of the request made by the Ministry until an award is rendered.
Economic Risks		
Risk from having few suppliers to deliver goods and services for the Company.	May not receive good quality of goods and services from these suppliers because the Company cannot compare quality and price with other suppliers, causing high costs. If a crisis occurs and affects to these suppliers, they may not deliver goods and services to us.	 According to the Supplier Charter, which is made know to all suppliers, it requires to compare quality and price of goods and services to avoid monopoly. Evaluate performance of suppliers after delivery of goods and services for screening quality suppliers that will be in our supplier list. There is a procurement policy and regulations as an operational framework.
Social Risks		
Risk of occupational health & safety at work.	Unforeseeable accidents from work.	 Act in accordance with occupation health and safety protocol and also regularly conduct a safety risk assessment. Conduct an emergency situation rehearsal, training and lectures related to occupational health and safety, such as training on fire evacuation drills every year, training on Electrical Safety and Basic First Aid. Policies and guidelines for taking care of employees during the COVID-19 pandemic.



Risks	Impact	Mitigation Plan
2. Risk of Human Rights Violation	There may be complaints or prosecution that will affect the Company's image and reputation, business operation, and income.	 With reference to HRDD, periodically conduct human rights risk assessments, which covers risks to human rights of permanent employees, temporary employees, and suppliers If human rights issues arise, the Company has Management measures and remedies as follows: In case of permanent employees, temporary employees), the Company shall follow the labour law, employee well-fare benefits, Personnel Policy and other related measures. In case of suppliers, the Company shall refer to the Supplier Charter and related Laws. Note in 2020, the Company has not found any human rights violations in both clause 2.1 and 2.2.
Environmental Risks		
Risk from an exposure to radiation of radio frequency.	Potential leakage of radio frequency radiation at hazardous level may affect work safety and the safety of community nearby.	Routine maintenance on related equipment and satellite antennas. Conduct radio frequency radiation measurement on a yearly basis.
Risk from the climate change, such as flooding.	Affect business operations if employees are unable to enter the office, and If Thaicom Satellite Station is damaged from such case, the Company will not be able to continuously provide services to customers.	 Regularly conduct exercises in a crisis management plan for Business continuity, especially in the operation area that requires employees to work 24/7 to provide services to customers. Prepare IT systems so that employees can work with maximum data security either from home or at back-up offices. Manage safety equipment at Thaicom satellite stations, for example, built water barriers around both stations, install fire protection, and reserve gasoline for generators.
Emerging Risks		
1. Risk on Information Security	May be at risk if the satellite control system receives cybersecurity threats from outside which could be detrimental to the business.	 Set up IT Governance Committee to prescribe guidelines and policies, and assessing and manage IT risks including IT system's environment status and risk management in order to be flexible enough to keep up with changes in information technology and communication. Design the satellite control system with minimum connection to the outside world. Certify with ISO 22301: 2012 Business Continuity Management. Have insurance to reduce the damage from cyber threats or from the third party's lawsuit in case of corporate or personal data breach.



Risks	Impact	Mitigation Plan
2. Risk from COVID-19 Pandemic	May affect employees' occupational health and life. If some employees, especially in the Satellite Operations, become infected from the outbreaks, it will be an obstacle to serve the customers.	 Appointed Crisis Management Committee referring to the Risk Management Plan and Business Continuity Management, to issue necessary guidelines based on the pandemic situation, BCMP, and any advice from the government. and to consider the potential impact on the Company, employees, stakeholders in the business value chain both short and long-term. Underscore the importance of the satellite operation and issued additional guidelines including: Setting up an emergency back-up satellite operation station. Limiting the number of staff working in the station. Social distancing and wearing masks Sanitary conditions of equipment Maintaining record of staff's travels and joining outside activities. This guideline specifically apply to staff working in the satellite operation and TV Broadcast functions.



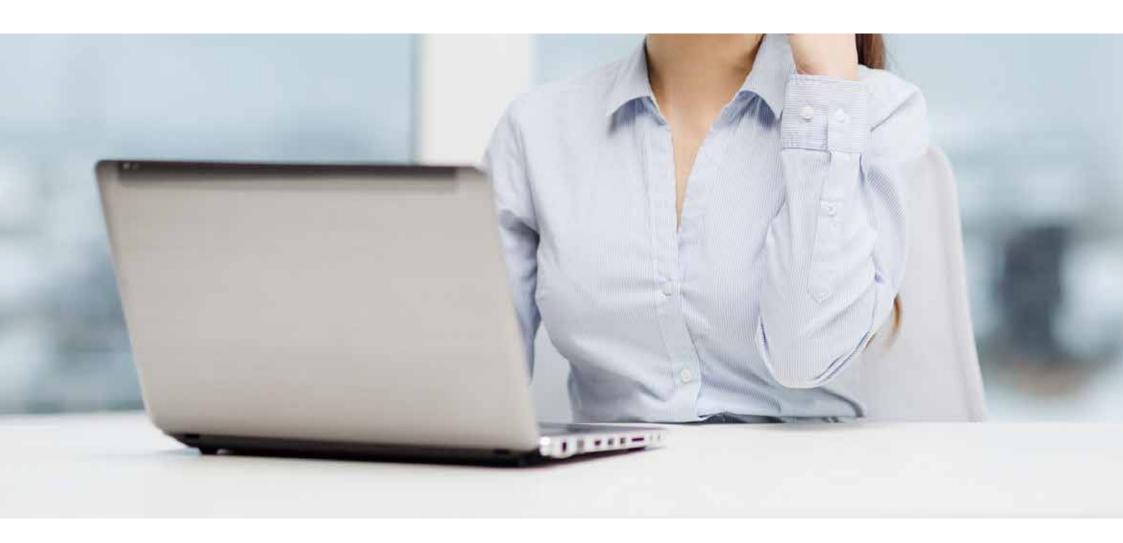


Risks Culture

Thaicom has created a risk culture in the organization on a continual basis and implemented the culture in many forms. The Company apply the principles of risk management in work processes. The risk management is defined as a measure of the organization's performance and the risk owners are required to conduct risk assessments. In addition, the Internal Audit annually assesses the implementation of risk management. This helps the Company be prepared for any potential risks or changes in the world, such as changes in technology.

The Company has also obtained certification of compliance with ISO 22301: 2012 for business continuity management and ISO 9001: 2015 for service quality management.

The Company also provides training courses on risk management for executives and employees, such as a risk management e-learning course for employees to understand risk management within the organization.





Materiality

Thaicom has identified key sustainability issues based on data analysis, trends, business direction and goals for sustainable development both in national and international domains, while also taking into account the business plan of the Company. This ensures that the Company generates economic value in its business operations, benefiting both society and the environment while also appropriately meeting the expectations of the stakeholders under the Company's Materiality principles, as per the GRI guidelines as follows:

Step 1: Identification of key issues relevant to the organization and its stakeholders

Thaicom compiles important information and data from a variety of sources and factors: internal (business goals and plans), which are gathered from management brainstorming, operational meetings, strategic meetings and analysis of risks associated with the sustainability of the organization; and external (trends in sustainability and expectations of shareholders), which are gathered by reviewing global Sustainable Development Goals, polls, meetings and seminars as deemed appropriate.

Step 2: Prioritization

Issues and topics compiled in step 1 are compared for consistency with issues and indicators as per the GRI guidelines and are considered, tested, and prioritized accordingly.

Step 3: Validation

Thaicom has reviewed the materiality issues in order to be in line with the business direction strategy and in line with the expectations of the stakeholder groups. It was found that the key issues that have been analyzed, considered and approved by the Sustainable Development Committee (SDCOM), there are some issues accelerating urgent to be processed, some issues are not important to the company's current situation and some issues require continuous response for a period of time. Thaicom therefore selects key sustainability issues as follows.

Thaicom's Materiality

Economic

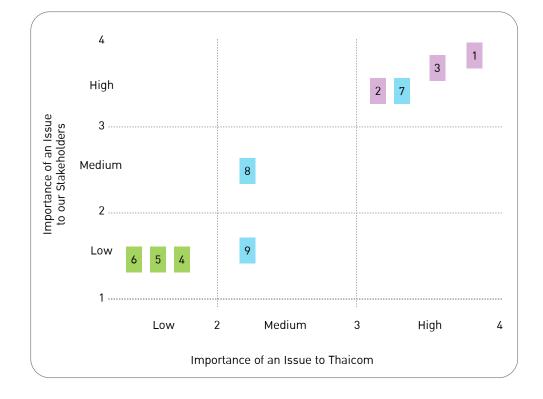
- Sustainable profitable growth/ Economic performance
- 2. Ethical business practices & Good Corporate Governance
- Build good relationships with Business Partners
 Regulators

Environmental

- 4. Emissions
- 5. Energy Management
- 6. Effluents & Waste

Social

- 7. Employee's Engagement, Well-Being, Quality of Life and Development
- Data Security & Customer Privacy
- 9. Community Contribution





Create continuous business growth with innovation and technology

Create opportunities and equality to access and capitalize on digital technology, especially those who live in remote areas.

In this era of digital economy and society, rapid changes in telecommunications and technology not only influence our everyday lifestyles and access to information, but also cause shifts in consumer behavior and demands. In addition to emphasizing the foundation and improving communications and telecommunications network quality, Thaicom also focuses on creating new business innovations, while offering high quality products and services that can meet the needs and lifestyle of consumers and stakeholders. The Company aims to create opportunities and equality to access and capitalize on digital technology, especially those who live in remote areas throughout the country.

Our Business Value Chain

Thaicom's vision is to be an "Asian leading provider of space-air-ground-maritime enabled platforms and smart solutions for a better future". The Company focuses on developing new services as well as expanding existing products and services in collaboration with strategic partners (public/ private sectors, universities) to meet the needs of existing and new customers. Thaicom or partner whoever has an expertise in technology and digital solutions will combine with communication technology. The products and services will be jointly developed and facilitate the stakeholders throughout the business value chain for maximum benefit. This also promotes the government policies that use technology to drive Thailand's digital economy.

As the main business is broadcast service (Satellite TV Broadcasting Service), Thaicom focusses on the development to enhance the broadcasting industry in Thailand by offering quality and value-added services to our customers as well as to viewers in Thailand and the Mekong and South Asia regions. The Company also aims to strengthen the business throughout the value chain by applying knowledge, experience and expertise in collaboration with our business partners such as wholesalers, equipment manufacturers (satellite dish and STB), broadcasters, in Thailand and overseas to improve the quality of satellite broadcasting, contents transmission, and TV broadcasting solutions (LOOXTV platform and TV Head-end) as well as viewing in different devices. In addition, to reflect our intention in creating shared value to society and stakeholders, Thaicom continues to support the Distance Learning TV Channel (DLTV) via satellite to transmit programs to children across the country. Regarding broadband services (Satellite Internet Service), it is a combination of providing large bandwidth of satellite to network operators and government in the regions, and broadband internet services to user such as NAVA® or maritime mobile satellite broadband services. This is to expand our satellite services to downstream in the value chain and integrate with other service systems and new business covering space, air, ground and maritime solutions.

In 2020, Thaicom has made a progress on the development of new products and services in collaboration with the business partners and educational institutes. This is in line with the Company's vision and strategy to provide a Space Air Ground Maritime Smart Solutions to create sustainability. Therefore, The Company has established a joint venture company with business partners through a subsidiary as well as the official launched products and services after experimentation and improvement for a period of time. These are as follows.

THAICOM SATELLITE SERVICE VALUE CHAIN

Satellite
Manufacturer

Oprerates
Satellite
Operates
Satellite

Operates
Teleport

Broadcasting&
Telecom Services,
Operates
Teleport

Operates
Service,
Ground Equipment
(Broadcasting &
Telecom), Value added
Services

Operates
Services

Operates
Teleport

Operates
Teleport

Operates
Teleport

Operates
Telecom), Value added
Services



1. Established a joint venture company called "Nation Space and Technology Co., Ltd.", with CAT Telecom Plc. (Now is called National Telecom Public Company Limited) to develop and penetrate satellite business, such as the Low Earth Orbit Satellite business that will respond to the rapid growth of online transactions due to the COVID-19 pandemic.

Objectives/ goals

To enhance a strategic partnership between Thaicom and CAT. The establishment of this joint venture company will help to increase the opportunity to develop telecom services via Low Earth Orbit satellite systems in order to meet the needs of consumers and all kinds of future communication all over Thailand. In addition, it will strengthen Thailand's telecommunications infrastructure and to support the growth of the digital economy industry and satellite industry.

Operating guidelines

Thaicom and CAT realize that the COVID-19 pandemic is resulting in drastic changes in people's lifestyles. Both public and private organizations are increasingly adapting to digital technology, which is leading to more and more online transactions. In this environment, the development of technology services via Low Earth Orbit (LEO) satellites will benefit everyone with access to high-speed internet services via 5G technology, IoT (Internet of Things) devices, M2M (Machine to Machine) technology, as well as drone technology and applications in areas that require high levels of accuracy, such as remote surgery. LEO satellite systems are ideal to power these applications due to their low latency. Thaicom and CAT will jointly provide satellite-related businesses such as the Low Earth Orbit Satellite by bringing expertise and long experience in the satellite industry of Thaicom combined with CAT's extensive know-how in providing digital solutions. The two companies will leverage advanced solutions and advanced satellite services for various applications and digital industries.





บริษัท เมชั่น สเปซ แอนด์ เทคโนโลยี จำกัด





2. Nation Space and Technology Company Limited (NSAT), a joint venture company with CAT Telecom Plc. (Now is called National Telecom Public Company Limited) launched the service "NAVA by NSAT", which is a satellite digital service for maritime communications to maritime and offshore operators in Thailand and Asia Pacific.

Objectives / goals

To create cooperation in expanding telecommunication networks to cover both land and sea by participating in the development of Maritime Digital Solutions service model to upgrade the maritime industry into a "Smart Ship".

Operating guidelines

NAVA by NSAT is NSAT's first service, bringing together the strengths of both companies. CAT has the telecom infrastructure and expertise in developing digital solutions, while Thaicom has a long experience in the satellite industry. Therefore, it has been developed into a service NAVA by NSAT as the Maritime Digital Solutions that focuses on the needs of users. The company will offer a full range of marine communications services. Giving users more options includes voice value added services, connection to cloud - data center services and CCTV system services to create added value. In addition to increasing operational efficiency on ships, It also helps to reduce costs for the maritime industry operator by offering a wide variety of business models at reasonable prices with the maximum information security. There is a team to support services of 24/7.







3. Cooperated with Suranaree University of Technology (SUT) launching the project "MoreSai" Campus Motorcycle, an intelligent electric motorcycle to meet the needs of students and staff who need a vehicle for traveling on campus. This also supports a green university concept because "MoreSai" uses 100% electricity and environmentally friendly.

Objectives / goals

To work together to design, develop and test applications platform and electric motorcycles under the MoreSai project, an intelligent electric motorcycle, as well as to exchange knowledge and information with partner. The collaboration is part of the Company's ambition to bring sustainable technologies to 'smart' universities such as Suranaree University of Technology. The project development with SUT aimed to meet the needs of students and university personnel who need a vehicle for traveling within the university. In addition, this project also supports the SUT's goal to become more sustainable campus as 'green' university with clean and sustainable energy as well as offer the community a truly smart solution to get around the campus. With its specification, MoreSai uses 100% electric system which is environmentally friendly. It can help reduce the amount Emissions of carbon dioxide and pollutants in the air and urban noise. In addition, the MoreSai project also promotes the concept of "sharing economy", which emphasizes the benefits of all stakeholders by reducing the burden of expenses changing from purchase their own motorcycles to be rental whenever use it.

Operating guidelines

The "MoreSai" project is a complete motorcycle rideshare service. Students and staff can rent a smart electric motorcycle through a mobile app. to travel within the university. The project started from selecting location of battery charging station, installation, operation, maintenance, and to design, develop, testing of the application platform and set the area of use the service. The Company has provided 30 electric motorcycles with 7 charging stations and 22 stops within Suranaree University of Technology.

MoreSai is a pilot project that the Company is planned to expand its services to universities and communities in many provinces throughout Thailand. In addition, the Company continues to develop the project by cooperation with other universities to explore new ideas for the development and improvement of the platform. Or else it will change to another service model that can meet the trend of future technology to help reduce the environmental impact while meeting the needs of stakeholders at the same time.

The performance from electric motorcycle service at Suranaree University of Technology since the launching date of 15 July until present (more than 8 months), the cumulative distance of 11,597.26 kilometers, which can reduce carbon dioxide emissions by 835,002.72 grams.



4. Thai Advance Innovation Co., Ltd. (Thai AI), a subsidiary of Thaicom, and AI & Robotics Ventures Co., Ltd. (ARV), a subsidiary of PTT Exploration and Production Plc. (PTTEP) established a joint venture company, called "ATI Technologies Co., Ltd.", to develop, produce, and sell unmanned aerial vehicles (drones) as well as provide a full range of services.

Objectives/ goals

To jointly develop, produce and sell unmanned aerial vehicles (drones) as well as providing a full range of services to create the sustainability of the business operations of both organizations. In the initial stage will focus on helping Thai farmers to raise productivity on agriculture, as well as the development in the agricultural sector which is the country's foundation economy. In addition, it will enhance Thailand's competence in unmanned aircraft technology.

Operating guidelines

'ATI Technologies' will provide technology research and development services. It includes innovative unmanned aircraft, providing data analytics services for smart farming development, as well as cooperation for new business development in other forms resulting from the innovation of unmanned aircraft in the future. This will help strengthen the country's economic through innovation.





5. ATI Technologies Co., Ltd. (ATI), a joint venture between Thai AI and PTTEP offers "Chao Aiang", an intelligent agricultural drone, to enhance the Thai agricultural sector held a demonstration and performance test of "Aiang" drones at the end of 2020. It is planing to distribute in the first quarter of 2021.

Objectives / goals

ATI is a developer of unmanned aerial vehicle or drone products and services including data analysis platform and integrated agricultural services. ATI aims to make Drones as a good helper for farmers. It will reduce costs while increasing productivity to improve the quality of life of Thai farmers as well as developing the Thai agricultural sector in the future. The agricultural drone, brand name, "Aiang" is an intelligent 4-blade propeller and 4-nozzle type automatic flight control drone with high accuracy and a touch screen remote control. Thus it will help farmers reduce their expenses, save time and increase safety without direct contact with chemicals.

Operating guidelines

ATI is committed to the development of unmanned aerial vehicle or drone technology for use in smart agriculture. By bringing its knowledge and experience in artificial intelligence and robotics develop software for agriculture that can be used with drones. ATI emphasizes the agricultural drone of the Thai people especially for Thai people. It starts from the design process of engineering principles, with a Thai menu, and for the processing system software such as user data (User Data), flight data (Flight Path), usage data and spraying data (Data Usage). In additon, other information will be stored online on the Cloud Service located in Thailand replacing the use of drone software designed by foreign companies. Therefore information is not leaked outside the country. In the future, ATI also aims to be an intermediary in forwarding this stored information to the government sector for further analysis and planning to solve problems for Thai farmers and for the complete development of the 'smart agriculture system' of Thailand.

'Aiang drone' was developed with attention in every detail, from production to deliver quality agricultural drones to Thai farmers. For example, all equipment parts of 'Aiang' were received international safety standards. Using the 'orange' color on Aiang can help user to see the longest distance (Line of Sight). The outstanding feature of Aiang is the function of controlling multiple drones using only one operator which will help reduce labor cost effectively.

6. Supported Thailand Post Office's project, a "Digital Thailand Post" or smart service, on a system development and installation of a "Digital Service Kiosk'. Connecting to wireless network, this kiosk will provide an easy access to the government services using ID card or camera (eKYC) for identity verification for important transactions and shopping via the thailandpostmart.com (an online shopping service) at many Post Offices. In addition, Thailand Post plans to expand online shopping market for Thai merchandises with Thaicom's experience and business network in Myanmar, Laos and Cambodia.

Objectives/ goals

To support on a "Digital Thailand Post" or smart service to develop a Digital Service Kiosk service system that will connect to the wireless internet network. Thaicom expects that the Digital Service Kiosk will evolve into a smart solution and a full service platform to accommodate a wide variety of applications for stakeholders, and public sector. This is the beginning of a cooperation for Sustainable business partnership between the two organizations in the future and will help propel Thailand to the digital economy.

Operating guidelines:

Besides being a joint service development of both organizations, the Digital Service Kiosk will be installed in the Post Office branches which are more than 1,400 in remote areas nationwide. Thaicom will bring innovation in wireless network technology to support internet connection to provide service to users and residents near the post office. Then users can do various transactions in a new format more convenient and faster. The Digital Service Kiosk also brings the website's online shopping service,



thailandpostmart.com a Market Place Leader of the Thai Post Office, allowing people to order products more conveniently. Moreover, they can choose to buy products at post offices nationwide and immediately delivered to family at home. In addition, the two organizations will develop the Marketplace to be able to order products through TV Home Shopping and various websites, establishing a warehouse, and preparing export-import documents (Custom Clearance) for foreign workers working in Thailand. In the future, it will also expand to international money transfer services.



7. Signed MOU with University of Technology King Mongkut's University North Bangkok (KMUTNB) for jointly developing and innovating to drive satellite and space technology.

Thaicom signed a memorandum of understanding with KMUTNB for the research and development cooperation. This will drive an ability to create new innovations that can be used in both education and commercially. The results from cooperation will be used for the benefit of KMUTNB and Thaicom. In addition, both will also exchange of academic knowledge and satellite and space technology to promote and develop the defense industry Including disseminating the knowledge for the benefit of society and the country for sustainable.



8. Thai AI, a provider of LOOXTV, a Thai TV Application platform, in partnered with Samsung Electronics launched a home entertainment via Samsung Smart TV to meet the needs of viewers for a wide variety of programs during the New Normal, with extra international quality programs such as sports, movies, news, and e-sports. By downloading LOOXTV application on Samsung Smart TV via internet, it will seamlessly connect traditional TV to online viewing without antenna or set-top-box for a better experience to viewer.

Objectives / goals

Partnered with a smart TV company to meet the needs of viewers who enjoy home entertainment for another choice to watch a variety of programs through the platform of LOOX TV in the New Normal period.

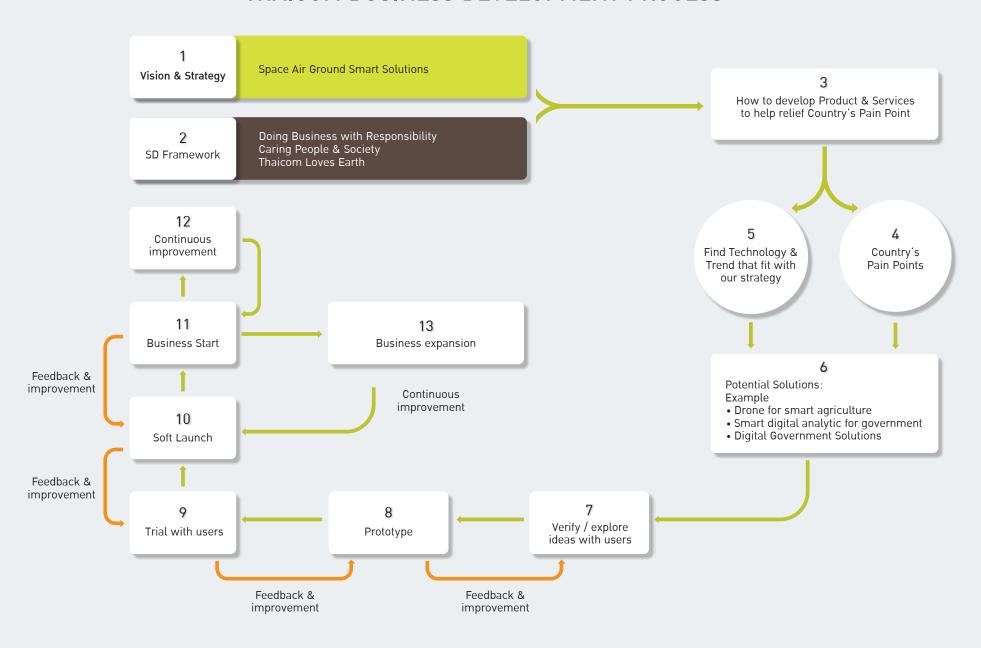
LOOX TV is an online TV viewing application that aims to create a viewing experience for consumers to easy access content and can be viewed in a variety of channels on mobile devices and connecting mobile devices to the TV. LOOX TV platform has a collection of programs including special channels from foreign countries, Digital tv channels, and satellite TV channels into a single application.

Operating guidelines

Thai AI cooperates with Samsung by expanding the viewing channels of LOOX TV through downloading applications in Samsung Smart TV. It is connected traditional TV viewing with modern online viewing. Only having the Internet at home, viewer can watch the LOOX TV content on TV. This simplifies the connection with the antenna or set-top box allowing consumers to access LOOX TV applications and easily watch quality programs from abroad, such as sports programs, movies, news, e-sports, variety and family programs.



THAICOM BUSINESS DEVELOPMENT PROCESS







Thailand Online Learning Platform for the Deaf Project (LooxLearn Application)

In 2020, Thaicom has developed an online learning platform for people of all ages, especially hearing-impaired students, such as students of the "Setsatian School Under Royal Patronage", who faced problems during the COVID-19 epidemic. These students were unable to attend regular classes due to the suspension of lessons during the lock-down period and unable to study via the DLTV (Distance Learning Education TV) channels as well. Therefore, the Company has provided an online teaching system concept for the deaf in order to have equal educational opportunities both in the system and informal system anywhere, anytime. In addition, this will develop an evaluation system to promote the level reference to the grades compared to the reference results in the curriculum and can be applied to improve the quality of life.

Objectives

- 1. Students with hearing impairment and other people are able to learn academics both in the educational system and informal education anytime, anywhere through the Online Platform developed by Thaicom and its affiliates.
- Establish an educational institution for the hearing impair students to have channels and learning resources that are easy to access and promote the level reference to the grades compared to the reference results in the curriculum and can be applied to improve the quality of life.
- 3. Develop this digital technology platform to be a tool for creating mutual value between business organization and society. The key goal is for sustainable development.

Phase 1 operating guidelines

Thaicom supported teaching and learning for students with hearing impairment of "Setsatian School Under Royal Patronage" during the period of classes suspension due to the outbreak of COVID-19. The Company supported the equipment and sent the Company experts to train and educate teachers to be able to perform an online instruction for students on a regular class period. Then it will be recorded as an online teaching clip for students to have the opportunity to study during COVID-19 and for repeat lessons when they wanted. In addition, Setsatian School is willing to cooperate with Thaicom in uploading the lessons to Thaicom online E-learning platform as well as to do an online learning assessment for continuous development for sustainability.

Results from the satisfaction survey:

Kindergarten –
Primary School Level:
An average level of
satisfaction of 98.35% and
gained knowledges 90% of
online learning.

Secondary School Level:

An average level of satisfaction of 88.5% and gained knowledges 84.7% of online learning.

Summary of Performance for Phase 1

- Total number of Setsatian students are 158 (Kindergarten = 14, Elementary Education Grade 1 - Grade 6 = 64, M. 1- M. 6 = 50 students).
- Students can learn from teaching materials that the teacher has prepared well both primary and secondary levels.
- Grade results are reflected from each teacher assessment and found that there is an improvement at every level.
- Teachers produced a total of 79 online lessons broadcasted on Setsatian Channel (Youtube)
 Including Thai language, Foreign languages, Mathematics, Science and Technology,
 Society, religion and culture, Health and physical education, Art, Occupation, For Primary
 education, and Other.
- Regarding the above subjects, there are a total of 13 online lesson examinations produced.
- 97% of Setsatian students attend the online classes (other students are redundant disabili ties who requires special care).

Continuing project: operation guidelines

- Use the LooxLearn app to manage Youtube Link and add post-view assessments.
- Develop a standard knowledge for a new course which can study anywhere and no need to attend class.
- Standardized knowledge content will then lead to informal learning. The students can
 collect courses to meet the criteria for promotion to level of educational classes. In
 addition, there is a system for processing the courses that are passed and the level up test.
- Developed into content that anyone can learn. It is not only for the students of Setsatian School for the Deaf, but in order to be the learning center for the Institute of the Deaf.
- Thaicom will request funding from the Safe and Creative Media Development Fund.



Caring for Customers

Apart from our commitment to deliver and maintain excellent quality of products and services, Thaicom also has a number of methods for building relationships and engaging customers in various business and leisure activities. Since the customers are key stakeholders in the company's value chain, therefore, the Company must be aware of customers' expectations and needs. The Company can use it for develop and improve products and services that will meet customer needs. This will include the existing customers, new customers and other stakeholders as well. It may create sustainable growth in the customer's business along with the Company's business.

In order to get expectations, needs, and the impact on the customer besides sales and service departments that often receive direct feedback from customers, the Company also conducts a customer satisfaction survey every year. With an analysis of the satisfaction scores, we will use it to determine a work plan for amending, improving or developing further services to customers.

In 2020, Thaicom conducted the Customer Satisfaction Survey and classified customers into 4 main group including; 1) Transponder Services, 2) Broadcast Services, 3) Broadband Services, and 4) Maritime (NAVA) Services. From the survey, the satisfaction scores of Thaicom customers were at 84.89 percent, slightly less than that of 2019, 1.01 percent.

A Comparison on customer satisfaction scores (%) with target

2018/Target	2019/Target	2020/Target	2021/Target
83.2/87	85.9/87	84.9/87	87

A slightly drop in satisfaction scores in 2020 is expected to come from the company's suspension of service on the Thaicom 5 satellite due to its retiring time and had a problem during the period before its retirement. This may result to the affected customers who dissatisfied because of frequency jammed or has to moved traffic to another Thaicom satellite earlier than the scheduled time. In addition, it may be due to the situation of the COVID-19 pandemic that may affect the customer's business.





Operating Results of 2020

Remark: The Company used the satisfaction survey results of 2019 to improve the activities in 2020.

Customer Group	Implementation	Performance of 2020
Broadband Services	Proactively send our technical support personnel to support customers on new satellite projects both domestically and internationally to ensure the success and completion of said projects. Promote customers on new business and project opportunities arising from satellite technology in order to utilize for a maximum benefit.	 Held customer training in small group due to COVID-19 pandemic. Actively joined in to solve the problems with customers whenever requested. Visit customers to get direct feedback, recommendation and complaint. During training and customer visit, we will share new information on technology trend and related to them.
Broadcast Services	Support customers' operations by sending technical support personnel experienced in broadcasting technology to give advice on business expansion and plan for adopting appropriate broadcasting technology, and technology in line with the developments and changes in the digital era. Provide technical data support and invite customers to visit Thaicom on knowledge sharing and understanding of technology changes that will benefit to their business.	 Held customer training in small group due to COVID-19 pandemic. Visit customers to get direct feedback, recommendation and complaint. During training and customer visit, we will share new information on technology trend and related to them such 4K Technology.
Transponder Services	Share information on Technology due to the changes in technology and satellite applications have changed from the past. Therefore, the customers and Thaicom need to adapt so that the business can continue to grow sustainability. The Company also share new technology both related to satellite and not related to benefit the customers' business through the customer training every year.	 Held customer training in small group due to COVID-19 pandemic Actively joined in to solve the problems with customers whenever requested. Visit customers to get direct feedback, recommendation and complaint. During training and customer visit, we will share new information on technology trend and related to them.
Maritime: NAVA	With our improvements to the development of new products and services on NAVA services, Thaicom provides technical support personnel to give advice and regularly check customers' usage. Systematically manage problem solving and fast (if any). Offer new technology to support a variety of applications. Overseeing the operations of our suppliers regularly to maintain the quality of products and services.	 Hold meetings with customers and partners on a regular basis for suggestions to develop and improve the quality of products and services. Expanded network of installation and after-sales teams to help customers resolve problems faster. Provide additional naval services to meet the needs and enhance the business potential of customers.

Communicates with Customers

Thaicom keeps in touch with customers through various channels, such as telephone, website, Line and e-mail, in order to facilitate customers for after-sales service, comments and complaints. In addition, the Company strictly empasizes to the "data security and customers privacy" by establishing related policies and measures. The Company also updates systems to ensure that information systems will be protected according to the Acts and Laws of Thailand and of the countries where we operate our business without the violation of privacy of customer data.

In addition, the customers can make a complaint or report clues of offences or fraud through Ethics Hotline on the website, www.thaicom.net.

Contact Numbers for Customers:

Phone: +66 2596 5060 (HQ) /

+66 2599 5009, +66 2599 5010 (Technical Support)

Email: cnd@thaicom.net

Website: www.thaicom.net/ www.ipstar.com

Customer Service Department: http://tcns.thaicom.net

Contact Numbers for Nava Customers:

Line: @ soc-nava

Email: nava@support.ipstar.com



Supply Chain Management

Fair Business Practice throughout the Value Chain

Suppliers are among the key stakeholders in the organization's value chain in creating share value and sustainable growth in all areas. The Company therefore communicates with and supports suppliers in conducting business between each other in accordance with the Company's operating guidelines. There is the "Supplier Charter" as a norm in doing business with the Company to show responsibility towards society, environment and stakeholders in the business value chain. The guidelines are included as follows.

- · Business Ethics
- · Human Rights
- · Environmental and Safety Standards
- Business Sustainability Standards
- · Risk Management
- Communication and adherence to laws and regulations

Development and management of relationships with suppliers (business partners)

Thaicom created a supplier database system for reviewed and updated on a regular basis in order to provide an up-to-date database for analysis and ranking suppliers. The suppliers list is important to have it on hand whenever a crisis occurred, according to business continuity management. The Company will assess satisfaction on products and services by internal users. Results are analysed through the corporate procurement process to screen and prioritize suppliers. It is also a feedback for suppliers to develop or improve products and services to meet the needs of users. Which inevitably results in good business cooperation as a long-term partner.

On the other hand, the Company gives its supplier the opportunity to file a complaint if it is unfair treat from doing business together. Otherwise, there is fraudulent procurement from outsourcing with other suppliers. The Company provides a channel to send complaints through "Ethics Hotline" on the website, and also issued "Whistle-blowing Policy for Misconduct and Corruption" to support and create fairness for suppliers. Suppliers can also directly contact either the procurement department or the internal audit department for opinions and coordinate with related departments to respond to suppliers on various issues. In addition, the Company also promotes the development of products and services with business partners with expertise of each company. Over the past year, there have been collaborated with many business alliances to explore new business opportunities. This will be a channel for mutual growth and sustainability.

In 2020, Thaicom conducted a survey on suppliers' ESG (Self-Assessment) in accordance with the quidelines on compliance with environmental, social, and corporate governance issues.

Overall scores = 88.11% from total of 15 important suppliers.



Please see more information on "Supplier Charter" on the website:

https://www.thaicom.net/wp-content/uploads/2019/07/20160822-thcom-supplier-charter-en.pdf

Ethics Hotline: https://www.thaicom.net/ethics-hotline/

Whistle-Blowing Policy

https://www.thaicom.net/wp-content/uploads/2019/07/20160913-thcom-cg-whistleblower-2016-en.pdf



TAX Management

Thaicom has announced a tax policy to be a framework for tax in accordance with the laws and regulations. The Company discloses information with relevant reporting requirements and standards to acknowledge stakeholders. The tax policy is applied to the group companies including overseas branch offices to strictly adhere to the principles of the tax policy. The accounting department is responsible for regularly reviewing and updating this policy.

Effective Tax Rate

In 2019 and 2020, the company reported profit (loss) before income tax expense at Baht (1,906) million and Baht 628 million while income tax expenses were Baht 344 million and Baht 114 million, respectively.

The Effective Tax Rates of the company* for 2019 and 2020 were (18%) and 18%, respectively. Compared with Thailand's Corporate Income Tax Rate at 20%.

The differences between the Effective Tax Rates and Corporate Income Tax Rate were described below:

- In 2019, the difference was from tax incentives under international headquarters (IHQ)
 and other adjusted items which were expense of the difference between account and tax
 purposes from impairment on intangible assets under operating agreement for satellite,
 the effect of different tax rates in foreign jurisdictions, share of profit(loss) of investment
 in a joint venture, the effect of non-deductible tax, current year losses for which no
 deferred tax assets was recognized and write-off of deferred tax asset.
- In 2020, the difference resulted from expense of the difference between account and tax purposes from impairment on intangible assets under operating agreement for satellite, the effect of different tax rates in foreign jurisdictions, share of profit (loss) of investment in a joint venture, the effect of income recognized in different period for accounting and tax purposes, the effect of non-deductible tax and current year losses for which no deferred tax assets was recognized.

Cyber Security and Personal Data Protection

Thaicom realizes the importance of measures to prevent cyber threats and to maintain the confidentiality of personal information, company information, customer information, and stakeholders in the business values chain. Nowadays, the Internet becomes more and more necessary for all businesses, and especially during the COVID-19 situation or during disasters. The Company needs employees to be able to work anywhere, connect any device and connect anytime, anywhere. So that the Company can continue its business. Thaicom has set "Information Security Policy" and "Information Security Regulations" which are applicable to all employees to follow since there are many hidden cyber threats through the Internet. If employees are not aware of such matters, it may cause damage to both the personal information of employees, the company information or information of our stakeholders such as customers, business partners unintentionally.

In addition, the data security of personal information, especially of customers or stakeholders in the business values chain of the Company is very important. Therefore, the Company has set the "Classification of Confidentiality and Information Handling Regulations" as several internal information security measures and requirements. There is a hierarchy of access to important information within the organization. Moreover, there is a control and management of information security for internal personnel and those in the business values chain such as customers, partners, or venture capital. So that all parties can be confident that personal information or transactions related to business operations will not be disclosed to third parties or other malicious people. It also covers the confidentiality of customer information or disclosure without the customer's permission. The Company has stated in the Business Code of Conduct that everyone in the organization must strictly adhere to and abide by including those who are in branch offices in foreign countries.

71.69% of employees passed the Cyber Security Awareness test in 2020.

*Note: please see the company's effective rate in notes to financial statements the Annual Report of 2020 for more details. Please also see Tax Policy on the website https://www.thaicom.net/wp-content/uploads/2019/07/thcom-tax-policy-2019-en.pdf



The Company organizes a compulsory training course "Cyber Security Awareness" and a comprehension test for employees annually to raise awareness and to be aware of new types of cyber threats that come through e-mail or using the Internet. In addition to giving the test, the Company also sends fake fishing mails to employees during the year to remind them that they need to be careful before opening or replying emails, especially during COVID-19 situations where employees must Work from Home.

In 2020, the Company held ISO 27001 training sessions 2 times, of which ISO 27001 is an international standard to guide the Company's performance in maintaining cybersecurity and personal information protection. In order to comply with international standards and in accordance with the "Cybersecurity Act and Personal Information Protection Act". ISO 27001 consists of a management system of information security and management guidelines that will help in keeping the information in maximum safety (Data Security). Therefore,

Thaicom adheres to the standard framework of "ISO 27001" as a guideline for system operation and management for the utmost security of storing and maintaining the information within the Company.

It can be seen that the Company has provided new guidelines or measures to cope with cyber threats on a regular basis. As the technology in today's world is constantly changing. Therefore, the Company has to invest in managing the internal system according to the highest international standards of data security. This is Including the need to raise awareness of employees on a regular basis to ensure the highest security of company information, customers, employees and stakeholders in the company's value chain.

Please see Policy Statement on the Security of the Information System on the website, https://www.thaicom.net/wp-content/uploads/2019/07/20150825-thcom-cg-it-Sec-Policy-2013-en.pdf

Anti-Corruption

Thaicom opposes all forms of corruption and be aware that corruption is a serious threat that undermines free and fair competition and causing damage to economic and social development. You can see Thaicom's Anti-Corruption Policy on the website: https://www.thaicom.net/corporate-governance/anti-corruption/ This policy is a guideline for employees to follow and in addition to notifying our customers, suppliers, business partners and those who are doing business with Thaicom to acknowledge the said Anti-Corruption Policy. We are expecting those in Thaicom's business value chains to follow. The Company has joined as a member of "Thailand's Private Sector Collective Action Coalition Against Corruption" with a letter announcing the intent of the Thai Private Sector Collective Action Coalition against Corruption, signed by the Company's Chief Executive Officer disclosed on the website,

https://www.thaicom.net/wp-content/uploads/2019/07/CA-Declaration-TH.pdf

In 2020, despite the COVID-19 situation, Thaicom joined in the activity of "Thailand's Private Sector Collective Action Coalition Against Corruption" by sending a group photo of employees in the campaign to fight against corruption. In addition, the third renewal of CAC membership in 2021 is in progress.

Please see more information on "Anti-Corruption Policy" at https://www.thaicom.net/wp-content/uploads/2019/07/anti-corruption-policy-2017-en.pdf







Environmental policy and practice

Thaicom emphasizes on the management of the internal processes that will directly or indirectly affect the environment and impact to stakeholders respectively. Therefore, the Company has set goals and measures to reduce and mitigate Environmental impacts from our business operations by promote energy conservation towards reducing the amount of greenhouse gas emissions of the organization. Moreover, the Company's Environmental Policy also includes water resource management and wastewater treatment. In addition to the prior environmental management, the Company also promotes waste reduction in the offices. Although the Company does not have a production line, there is a lot of general waste disposal every year to take care of. After launched the 3R campaign in 2019 to separate each general waste before disposing into the garbage bins, we started collecting the data on plastic and paper disposal and setting goals to reduce from 2020 onwards with campaign. However, during last year up until now, we have to face with COVID-19 pandemic that affects throughout the world. The employees have to work from home (WFH) for several months. Even during the new normal periods, we have still had to take measure for social distancing which will affect our campaign to reduce plastic waste in the office. But the paper consumption in the office was reduced due to this incident as the employees work from home.

Please see "Environmental Policy" at

https://www.thaicom.net/wp-content/uploads/2019/07/20190116-thcom-cg-environmental-policy-2018-en.pdf

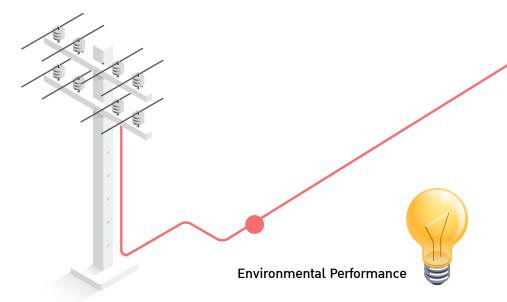
Environmental Performance

Energy Management

According to the fact that the products and services and the business processes of the Thaicom consumes a lot of electric power. Therefore, the company has set goals to continuously reduce energy consumption as well as increasing the efficiency of energy conservation in every year. The company issued an energy conservation policy since 2009. In addition to the policy, Thaicom has also launched the "iSAVE" project to promote measures and activities on energy saving continuously. Besides, the Company promotes the renewable energy by installed solar panels to use in the office at the Thaicom Teleport and DTH Center, Pathumthani, with the 5 years plan to install solar panels to produce energy of 100 kW maximum. This will enable the Company to produce renewable energy up to 180,000 kWh / year. However, in the year 2020, the Company has no progress according to the project due to the COVID-19 pandemic.

Please see "Energy Conservation Policy" at

https://www.thaicom.net/wp-content/uploads/2019/07/20170410-thcom-cg-policyenergy- 2017-en.pdf



Office	2018	2019	2020
Thaicom Satellite Station (Nonthaburi)	1,666,000 kWh	1,678,000 kWh	1,552,000 kWh
	(5,997,600 MJ)	(6,040,800 MJ)	(5,587,200MJ)
Thaicom Teleport & DTH Center (Pathumthani)	4,967,100 kWh	4,590,840 kWh	4,371,660 kWh
	(17,881,560 MJ)	(16,527,040 MJ)	(15,738,000 MJ)

Operating Results:

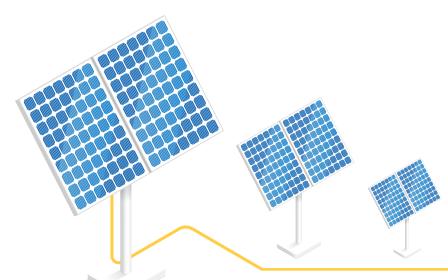
- Thaicom Satellite Station (Nonthaburi): A decrease of 8.15 percent or 126,000 kWh compared to 2019; or the average monthly electricity consumption decreased by 5,666.67 kWh or 4.20 percent when compared to the 2020 KPI.
- Thaicom Teleport & DTH Center (Pathumthani): A decrease of 5.01 percent or 219,180 kWh compared to 2019; or the average monthly electricity consumption decreased by 15,695 kWh or 4.13 percent when compared to the 2020 KPI.
- The decrease in the electric consumption in both stations was due to the COVID-19
 pandemic that employees worked from home for several months as well as the
 number of employees also decreased compared to the previous year. Although, the
 operations on both stations have still utilized almost the same amount of electricity
 for 24 hours/7 days services.



The amount of electricity produced from solar panels:

Thaicom Teleport & DTH Center (Pathum Thani)





iSAVE Project Performance of 2020 according to the energy conservation Measures compared to goals.

			Goals (Total reduction)		Operating Results (Total reduction)		
Project	Measure	Budget (Baht)	Kilowatt-hour/ year	Baht/year	Kilowatt-hour/ year	Baht/year	Saving (%)
1) Thaic	om Satellite Station, Nonthaburi						
1	Overhaul Compressor Precision Air						
	Total	57,700.00	3,001.18	11,464.49	2,978.4	11,377.49	0.18
2) Thaic	om Teleport & DTH Center, Pathumth	ani					
1	Installed Cooling Pad system for Air-conditioner in the Container	147,000.00	17,885.00	63,684.69	13,870.00	48,267.60	0.30
2	On grid Solar cell 20k Wp Phase III	0.00	36,500.00	129,210.00	0.00	0.00	0.00
3	Changed the Transformer low loss 2 x 2000k VA	3,850,000.00	3,983.79	14,102.60	12,244.96	45,948.16	0.27
	Total	3,997,000.00	58,368.79	206,987.29	26,114.96	94,215.76	0.57



Water and Wastewater Management

Although Thaicom does not directly use water resources in its main business operations, the Company is aware that the water resources are important and necessary for every life and that is our responsibility to social and environment. Therefore, the Company has set goals (KPI) and campaign to save water every year. It is also a measure of the performance of the related department. Besides, the Company has focused on "wastewater treatment from the office buildings before disposing to public sewer systems. Both stations of Thaicom are located in the areas where the public drainage system is still not perfected. Therefore, we need to be more concern on the efficiency of the system for wastewater treatment so as not to affect the environment of the surrounding communities. Since 2017, after launched the Thaicom Loves Earth Campaign, we have continued to analyze the quality of wastewater in order to ensure the quality of wastewater treatment system.

Water Consumption

Office	2018 (Cubic meter)	2019 (Cubic meter)	2020 (Cubic meter)
Thaicom Satellite Station (Nonthaburi)	4,592.00	7,383.00	4,515.00
Thaicom Teleport & DTH Center (PathumThani)	6,121.00	5,357.00	4,180.00

Wastewater examination results

In 2020, Thaicom used the wastewater examination service from the Water Quality Management Department, The Public Health Ministry for inspecting the effluent quality from Thaicom Satellite Station, Nonthaburi and Thaicom Teleport & DTH Center, Pathumthani.

From the results of the wastewater examination, it was found that Thaicom Satellite Station, Nonthaburi and Thaicom Teleport & DTH Center, Pathumthani resulted in a good level of effluent quality. Both Stations had lower COD (Chemical Oxygen Demand) and BOD (Biochemical Oxygen Demand) values than the standard. In addition, both had a relatively high pH in the water and also had SS (Suspended solids) value with substandard heavy metal value lower than the standard. The inspection in other parameters can see in below table.

Comparison of the 2020 examination results of effluent quality to the Water Quality Index

Operating Results:

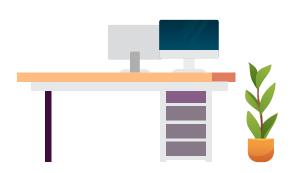
- Thaicom Satellite Station (Nonthaburi): The amount of 2,868.00 Cubic meter or 38.85 percent of water consumption decreasing from 2019; or the average monthly water consumption decreased by 88.75 cubic meters or 23.59 percent when compared to the 2020 KPI.
- Thaicom Teleport & DTH Center (Pathumthani): The amount of 1,177
 Cubic meter or 28.16 percent of water consumption decreasing from
 2019; or the average monthly water consumption decreased by 81.67
 cubic meters or 18.99 percent when compared to the 2020 KPI.
- The water consumption at both stations decreased because of the water saving campaign as well as the COVID-19 pandemic that employees have to work from home and switch working in the office for several months. In addition, the number of emplyees also decreased compared to 2019.

Parameters	Water Quality Index The highest criteria set by drainage control standard type	Thaicom Satellite Station Nonthaburi	Thaicom Teleport & DTH Center Pathumthani
		Test Results (mg./l)	Test Results (mg./l)
PH	5-9	7.7 (pH at 25C)	7.5 (pH at 25C)
Total Dissolved Solid	Not more than 500	557	608
Suspended Solids	Not more than 30	17	19
Settleable Solids	Not more than 0.5	<0.1	0.3
Oil and Grease	Not more than 20	1.8	0.8
Nitrogen (TKN)	Not more than 35	119.87	3.28
Sulfide	Not more than 1.0	0.12	0
COD	Not more than 120	85	33
BOD	Not more than 20	10	2



Waste Management: Promoting Green Office

Thaicom Loves Earth is an environmental framework for sustainability with social responsibility and to our stakeholders and also promote the development to move towards "Green Office" in the future. It started with the campaign to ban on producing plastic water bottles for consumption in the office and campaign for employees to separate wastes before throwing into the bin. These common types of waste contribute to the emission of greenhouse gases into the Earth's atmosphere because it is difficult to degrade. In 2020, the Company has set up two types of waste reduction targets, "plastic and paper", although they can be recycled after being processed. However, it would be more concrete action to achieve sustainability if everyone helped reduce and eliminate the two main causes of waste in our offices.





Reduce the use of disposable plastic containers

by Thaicom Green Bag & Box Project

This campaign was planned to promote in 2020 for employees to borrow cloth bags and plastic food containers when they buy food from the company's canteen, then return to us after cleaning it. Normally, employees use foam boxes and plastic bags for food packaging.

Target

In 2023, to reduce 20% (or 5% a year) of plastic waste from Thaicom offices compared to base year (2019) In the future, the Company will refrain employees from bringing foam boxes, plastic bags, and single-use beverage containers into the offices. We had set a short-term goal that within four years must be able to reduce the amount of plastic waste disposed in Thaicom's offices by 20 percent. However, the COVID-19 pandemic situation in 2020 and 2021 has delayed our campaign because we should not share a plastic food container even though washed it. Therefore, we still have to wait and see the situation of COVID-19 in 2021.

Let's planting one tree per person to help reduce global warming

According to Thaicom business operations, both Satellite and Teleport Service Stations released carbon dioxide to the environment in the amount of 4,216.00 tons of carbon dioxide equivalent in 2020. Although it is not a large amount compared to other industries, Thaicom is aware of potential impacts to the environment. As a result, the Company organized several activities including paying attention to its business operation processes to protect the good environment, reducing carbon dioxide gas emission, and increasing the number of trees to absorb carbon dioxide gas. The Company has promoted activities with employees to support tree plantation, such as Thaicom We Share for the Mangrove Plantation, Thaicom We Share for planting trees for the forest, and planting trees on employees' lands or their friends' lands. Although Thaicom has only hundreds of employees, if many companies/organizations cooperate, the national goal to increase the forest area to 40% or 128 million Rai will be achieved easily.

In 2020, Thaicom has set an important goal to increase the number of trees per year at least equivalent to the number of the Company's 379 employees (as of December 31, 2019) and will continue this campaign for a period of 5 years (2020-2024) in order to obtain at least 1,895 trees. If the trees that we plant fully grow, they will be able to absorb approximately 1,895 tons of carbon dioxide equivalent throughout their life cycles and trap 2,653 kilograms of particles of pollution from smoke per year. In addition, trees emit at least 379,000,000 liters of oxygen per year, which can support the human needs of 2,915 persons per year (1 person needs 130,000 liters of oxygen per year, www.sustainablelife.co).

The summary of 2020 waste reduction performance compared to the base year and target per year are as follows.

- Plastic waste in offices decreased by 23.7% compared to the base year and from the target set of 5% per year.
- Paper waste disposed in the office slightly dropped by 1.84% compared to the base year and from the target set of 5% per year.
- "Thaicom We Share, Let's planting one tree per person", in 2020, employees planted a total of 550 plants or 145% compared to the base year and from the target set of 379 trees per year.

Target
Within 5 years (2020-2024) to
plant total of 1,895 trees or

379 trees per year.





Table of waste reduction performance in accordance with general waste measures and tree planting campaign.

	Measures on THAICOM Loves Earth	Target (year & quantity)	2019 (Base year)	2020
Thaicom Green Bag	 Campaign to reduce the plastic waste in office: "Thaicom Green Bag & Box" 	2023 Amount decreased 20% from the base year	199.6 Kg.	152.3 Kg.
3	2. Campaign to reduce paper consumption in the office	2023 Amount decreased 20% from the base year	429,784.50 sheets	421,892.50 sheets
	 Campaign to plant trees to increase green area with employee participation:" Thaicom We Share – Let's planting one tree per person" 	2024 Total of 1895 trees planted/379 employees*		550 Trees

Remark: *The Number of 379 employees was based on 2019 as the base year.

Continue support the global warming reduction

Mitigate the greenhouse gas emission from our operations

In 2018, Thaicom joined the project as a pilot organization in the expansion of carbon offset activities to support the domestic voluntary carbon market, the fifth year which undertaken by the Faculty of Environment. Kasetsart University Under funding from the Thailand Greenhouse Gas Management Organization (Public Organization) (TGO). Since then, the Company aims to be part of a business organization to reduce global warming in order to create sustainable growth. The Company continuously reports on the Carbon Footprint of Organization (CFO) to assess the performance of two offices: 1) Thaicom Satellite Station, Nonthaburi, and 2) Thaicom Teleport and DTH Center, Pathumthani in order to disclose environmental information to the Company's stakeholders. It drives to environmental management proactively in order to build sustainability under the framework of Thaicom Loves Earth. In 2020, therefore, the Company set up the target to reduce greenhouse gas emissions after reporting CFO for two years to TGO in order to develop measures that will help reduce the company's greenhouse gas emissions more effectively.

For verification of CFO reports on the amount of greenhouse gases emissions, Thaicom has assigned "Water Institute for Environment and Sustainability, The Federation of Thai Industries" as the auditor for the year 2019 and 2020. The Company has registered to certify the CFO Reports by TGO in 2021.

Table of Thaicom Greenhouse Gas Emission in 2019 and 2020 (Scope 1+Scope 2) compared to the base year (2017)

Station	2017 (Base year)	2018 (tonCO2e)	2019 (tonCO2e)	2020 (tonCO2e)	2021 (Target)
Thaicom Satellite Station, Nonthaburi	1,346.00	1,261.00	1,131.00	955.00	20%
Thaicom Teleport & DTH Center, Pathumthani	2,894.00	2,920.00	2,313.00	2,266.00	30%

Operating results:

1. Thaicom Satellite Station, Nonthaburi

- 2019 (Scope 1 & 2) = 1,131.00 tonCO2e, a decrease of 215.00 tonCO2e, or 15.97%.
 Compared to 2017 (Base Year: 1,346.00 tonCO2e).
- 2020 (Scope 1 & 2) = 955.00 tonCO2e, a decrease of 391.00 tonCO2e or 29.05%
 Compared to 2017 (Base Year: 1,346.00 tonCO2e).

2. Thaicom Teleport & DTH Center, Pathumthani

- 2019 (Scope 1 & 2) = 2,313.00 tonCO2e, a decrease of 581.00 tonCO2e or 20.08% Compared to 2017 (Base Year: 2,894.00 tonCO2e).
- 2020 (Scope 1 & 2) = 2,266.00 tonC02e, a decrease of 628.00 tonC02e or 21.70% Compared to 2560 (Base Year = 2,894.00 tonC02e).

Table of the amount of emissions by Thaicom when comparing Scope 1, 2, and 3 of the year 2019 and 2020.

Thaicom Satellite Station, Nonthaburi, 2019.

Scopes	Emissions	Proportion compared to Scope 1, 2 and 3	Proportion compared to Scope 1, 2 and 3
Scope 1	292.00	25.82	25.52
Scope 2	839.00	74.18	73.34
Scope 3	13.00		1.14
other	64.00		
Total of Scope 1 & 2	1,131.00	100.00	
Total of Scope 1 & 2 & 3	1,144.00		100.00

Thaicom Satellite Station, Nonthaburi, 2020.

Scopes	Emissions	Proportion compared	Proportion compared
		to Scope 1, 2 and 3	to Scope 1, 2 and 3
Scope 1	179.00	18.74	18.55
Scope 2	776.00	81.26	80.41
Scope 3	10.00		1.04
Others	63.00		
Total of Scope 1 & 2	955.00	100.00	
Total of Scope 1 & 2 & 3	965.00		100.00

Thaicom Teleport and DTH Center, Pathumthani, 2019.

Scopes	Emissions	Proportion compared to Scope 1, 2 and 3	Proportion compared to Scope 1, 2 and 3
Scope 1	18.00	0.78	0.78
Scope 2	2,295.00	99.22	99.14
Scope 3	2.00		0.09
Others	134.00		
Total of Scope 1 & 2	2,313.00	100.00	
Total of Scope 1 & 2 & 3	2,315.00		100.00

Thaicom Teleport and DTH Center, Pathumthani, 2020.

Scopes	Emissions	Proportion compared to Scope 1, 2 and 3	Proportion compared to Scope 1, 2 and 3
Scope 1	80.00	3.53	3.53
Scope 2	2,186.00	96.47	96.38
Scope 3	2.00		0.09
Others	210.00		
Total of Scope 1 & 2	2,266.00	100.00	
Total of Scope 1 & 2 & 3	2,268.00		100.00

Our campaigns to reduce the Greenhouse Gas Emissions

Regarding our activities to mitigate the impact to the environment and help reduce a greenhouse gas emission, there are a total of 5 activities as follows.

- 1. Energy conservation under iSAVE Project to reduce energy consumption and increase energy efficiency
- 2. Promote renewable energy as alternative energy by generating electricity from solar panels.
- 3. Water resources conservation and management, such as wastewater treatment
- 4. Promoting green office under Thaicom Loves Earth for waste management, such as campaigns to reduce paper and plastic waste in the office.
- 5. Planting trees to reduce global warming under Thaicom Loves Earth.



Measurement of Radio Frequency Transmissions

Since the satellite service involves with the frequency from receiving and sending satellite signals to ground stations, the Company emphasizes on the frequency concentration measurement and the assessment on radiation and high frequency waves that may be harmful to organisms on a regular basis every year. It is the measure that responds to "Environmental and electromagnetic wave risk management" from the signal transmitter within Thaicom Satellite Station every year. This will help the Company to assess, control, and prevent potential impacts within the satellite stations and surrounding communities. It is one of the missions regarding responsibilities to environment, society, and employees working at two satellite service stations of Thaicom.

In 2020, the Company assigned the Electrical and Electronic Product Testing Center (PTEC), National Science and Technology Development Agency (NSTDA), Ministry of Science and Technology to measure the level of electromagnetic radiation in Thaicom Satellite Station, Nonthaburi and the Thaicom Teleport & DTH Center, Pathum thani. The data was used for consideration in comparison with the electromagnetic field strength limit for people receiving generalized electromagnetic waves about the effects of electromagnetic waves on human health as standard of International Commission on Non-Ionizing Radiation Protection (ICNIRP).

Objectives:

- 1. To measure the strength of the electromagnetic field around the Thaicom Satellite Station and Thaicom Teleport & DTh Center areas.
- 2. To compare the measurement results of the electromagnetic field strength In the area of both Thaicom ground service stations with the ICNIRP standard for the safety of electromagnetic fields for humans in the vicinity of the transmission antennas.
- 3. To use the results of the measurement of the strength of the electromagnetic field for considering the design of protection systems or correcting the effects of electromagnetic fields on humans in the event that there is a level of fire magnetic field strength Blue exceeds the limit according to ICNIRP standards.

Summary of electromagnetic wave measurement performance

From measuring the level of "Magnetic field" (H-field) around the two power distribution rooms. It consists of an MDB room and a UPS room, measuring results during normal operation.

- Thaicom Satellite Station: The maximum value for the UPS room is 23.1 A/m at a frequency
 of 50 Hz with a limit value of 80 A/m, the measured value is 3.46 times away from the limit
 value.
- Thaicom Teleport & DTH Center: The maximum value at the UPS room is 62.8 A / m at
 a frequency of 50 Hz with a limit value of 80 A / m, the measured value is 1.27 times
 away from the limit value.

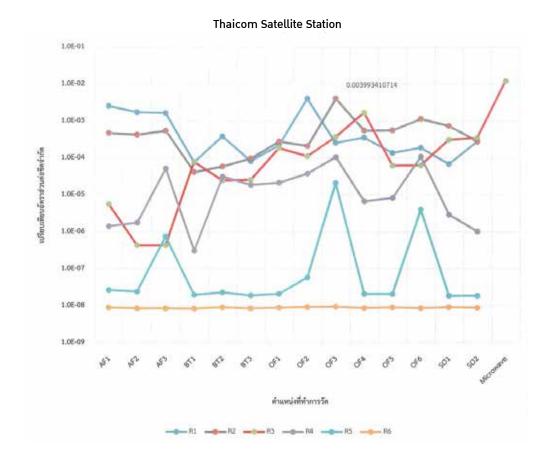
In addition, the probe was taken for testing as close as 20 cm and when the probe was retracted a little, the measured value was greatly reduced. Therefore, people who work to inspect cabinets and equipment in the room will not be effected by the magnetic wave signal, it can be concluded that the magnetic wave signal strength measured at 50 Hz power frequency in the electrical distribution room in the building of both stations will not affect those working in that area.

By measuring the level of "Electric field" (E-field) in different areas of both stations, the resulting value can be calculated to compare it with the limit value, then it must be less than 1, plotted all results on the graph of the sum of the electromagnetic wave measurements. (Please refer to the table below). It was found that the sum of all values compared with the limit values of the two stations was "less than 1 at all". Other frequencies, C-Band, Ku-Band and Ka-Band were less proportional to the threshold than the cellular band and microwave oven.

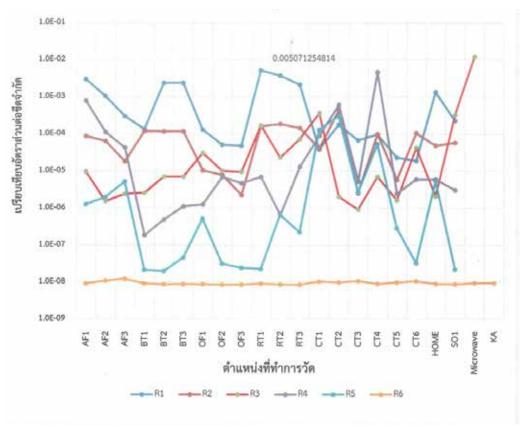
Therefore, it can be considered that within and around the two service stations of Thaicom has a level of electromagnetic signal that is safe for workers in accordance with ICNIRP standards.



Table of the measurement results of frequency and electromagnetic wave levels of Thaicom Satellite Station and Thaicom Teleport & DTH Center.



Thaicom Teleport & DTH Center



Note:

R1: 800 Mhz -1000 Mhz is the mobile phone operating frequency (UHF Band).

R2: 1 Ghz - 2.15 Ghz, is the mobile phone operating frequency band (L Band).

R3: 2.4 Ghz -2.5 Ghz is a frequency band used for Wifi Router and Microwave.

R4: 5 Ghz -7 Ghz is the satellite operating frequency band (C Band).

R5: 13 Ghz - 15 Ghz band, is the satellite frequency band (Ku Band).

R6: 27 Ghz - 30.1 Ghz satellite frequency band (Ka Band).

Mhz: Mhz (Megahertz)
Ghz: Gigahertz (Gigahertz)

Our responsibility on Space Environment

Thaicom was one of the first satellite operators who decided to use the Falcon 9 rocket of SpaceX to launch Thaicom 6 satellite on 6 January, 2014, and Thaicom 8 on 27 May, 2016.



Rocket Reusable Technology

The booster that launched the Thaicom 8 became the first booster to be reflown after being recovered from a GTO launch. SpaceX has been developing the technologies for years to facilitate the full and rapid reusability of space launch vehicles. The reusable launch system technology was developed and initially used for the first stage of Falcon 9. After stage separation, the booster flips around to reverse its course, a reentry burn, controlling direction to arrive at the landing site, and a landing burn to affect the final low-altitude deceleration and touchdown. This technology approach is to reduce the cost of access to space and change the increasingly competitive market in space services. No rocket stage waste is left sunk into the deep ocean like traditional launch services.

De-orbiting to the Graveyard orbit

Thaicom follows The International Telecommunications Union (ITU) and United Nations (UN) recommendation that satellites in geosynchronous orbit must be designed to move themselves to a disposal orbit about 300 kilometers above the GEO belt, or the "Graveyard orbit" during the end of life stage, and shutting down system configuration to become passivation. This de-orbiting process minimizes the probability of subsequent accidental collision and reduces the impact of a subsequent unintentional explosion. All de-commissioning end-of-life for Thaicom satellites had a 100% success rate of de-orbiting. In early 2020, the Company de-orbited the Thaicom 5 satellite due to end of its life span and drifted the Thaicom 5 to the Graveyard Orbit.

Electronic waste disposal

Normally, Thaicom has ordered electronic equipment related to the satellite communication services or any new project in order to provide a full range of services and solutions to customers. Some of them are subject to expiration or inventory backlog which is out of date. Therefore, every year, this equipment will be written off and disposed or recycling as appropriated. In addition, it will not be hazardous e-waste that will adversely affect the environment and stakeholders in the future.

In 2020, Total Environmental Solutions (TES), a branch company from overseas specializing in the handling of such E-waste, was hired as a contractor to dispose of the electronic equipment. TES has sorted out the parts according to the material. Some parts will then be recycled or to be destroyed as appropriated which is also referred to the relevant regulations and laws in E-waste disposal management.







Social policy and practice

Thaicom adheres to a policy that strictly respecting human rights and believes that all human beings have equal rights by birth. Our human resource management must be obtained Equality in practice and entitled benefits under labor law. The Company also promotes the development of employees in accordance with company business strategy as well as supporting employees for good quality of life and well being in health and safety. Especially in unusual circumstances such as the COVID-19 pandemic, it can affect the entire organization. For society, the Company has still kept its intention to create opportunities for people to access information, communication and technology thoroughly in all circumstances. Furthermore, the company also strive to promote equal opportunities and quality in education, especially those in remote areas. At the same time the Company promotes creating shared value between business and society by continuing to support learning for the careers of students and the community. It will create opportunities for a good quality of life and a stable economy in their own community sustainably.

Respect for Human Rights Principles

Thaicom supports and respects the protection of human rights by ensuring that its business is not involved in human rights violation. In addition, the Company also respects and treats all stakeholders fairly based on human dignity without discrimination, such as discrimination of birthplace, race, skin color, age, gender, etc. The Company has established the Human Rights Policy. Thus, the employees of the Company must understand the laws relating to their duties and responsibilities thoroughly and strictly comply with. Since the Company operates business in many countries that have different culture, it is important for employees working in those countries to carefully study the laws, customs, traditions and cultures of that country in order to avoid the violation of such human rights laws.

The Company has adopted the Human Rights Principles in other relevant business policies, such as Business Ethics (such as working hours, not using forced labor, no child labor, freedom of association and the right to negotiate) Personnel Administration (such as compensation, welfare, benefits), Respect for the Rights of Shareholders, Environmental Policy, Cyber Security Policy and Data Privacy). In this regard, the Company plans to conduct a Human Rights Due Diligence Risk Assessment in 2021. Thaicom Supplier Charter is as a principle for the selection and evaluation of the Company's business partners. In which the said practice specifies the expectations and guidelines for doing business with the Company. Especially on the issue of "Human rights and labor principles" cover important matters such as fair treatment of workers and labor, non-discrimination, appropriate hours of work, compensation and benefits are provided, having the right to freedom of association according to the law, and no child labor Including the absence of forced labor. The Supplier Charter is also used to communicate with partners to understand the business practices for achieving the Company's Sustainable Development Goals.

Please see "The Human Rights Policy" on the Company's website at https://www.thaicom.net/corporate-governance/other-policy/, and more information on "The Supplier Charter" at https://www.thaicom.net/wp-content/uploads/2019/07/20160822-thcom-supplier-charter-en.pdf



Social Performance

I.Caring for People (Employees)

Thaicom has formulated a corporate personnel management strategy for 2020 - 2022 with a focus on proactive organizational change (4R). There is an organizational structure designed to meet the challenges and create a competitive advantage (Right Structure). The company also gives importance to the development of the capabilities of the internal personnel of the organization (Right People) and the creation of an agile work culture (Right Culture) by focusing on the development of working processes (Right Process) in accordance with the same direction throughout the organization. In addition, it must also correspond to the world current and future trends. That is to build Thaicom as a source of good and talented people and a livable organization along with strengthening operations and development for sustainability. The Company believes that the essence of the organization's human resource management strategy plan for the year 2020 - 2022 will help drive human resource management to achieve the organization's goals effectively and efficiently.

1. Fair and Equal Practices for Employees

Thaicom has a total of 354 employees (as of December 31, 2020). The Company has the policy to look after employees thoroughly, equally and fairly without any discrimination of gender, religion or race. In addition, the Company also hires employees derived from diverse nationalities and countries based on Thaicom satellite service areas and business strategies. Therefore, the "Principles on Human Resources Management" are the important framework of operations for all employees to ensure no violation of such rights of employees. However, if unfair practices are found or employees do not receive the appropriate benefits as specified by the rules, the Company offers opportunities to comment and complaint through various channels in case of anonymity, such as Ethics Hotline on the Website and Intranet, Web Board, comments during the annual employees' meeting, and on special occasions. Moreover, employees are able to discuss directly with their supervisors.

Total number of employees of 2020 (As of December 31st, 2020) Total proportion number of employees

• Total number of employees included Thaicom, TCB, and Thai AI, and separated employees in Thailand and overseas.

Office	Male	Female	Tatal
Thailand	216	126	342
Oversea	9	3	12
Total (personnel)	225	129	354

- Total of 7 new employees in Thailand, or 1.75% of total employees.
- Total of 48 employees resigned (Thailand only) or 13.56% of total employees.
- Total of 5 employees on maternity leave, and total of 5 employees back to work after maternity leave.

Proportion number of employees by job levels

Job levels	Thailand	Overseas	Total
Operational	278	9	287
Manager	34	3	37
Executive	27	-	27
Senior Management	3	-	3
Total (personnel)	342	12	354

Proportion number of employees by ages

Ages	Thailand	Overseas	Total
< 30 years	14	-	14
30-50 years	280	10	290
>50 years	48	2	50
Total (personnel)	342	12	354

Average working years of employees

	Thailand	Overseas	Total
Average (years)	13.94	11.58	13.86

Proportion of employees by office locations

Office Location	Thailand	Overseas	Total
Overseas	-	12	12
Hua Hin	3	-	3
Nonthaburi	220	-	220
Pathum Thani	114	-	114
SJ Infinite I Bldg., Bangkok	5	-	5
Total (personnel)	342	12	354

0 Number of employees with disabilities. However, in 2020, the Company has contributed 342,335.00 baht, according to Section 34, to the Fund for Empowerment of Persons with Disabilities.



2. People development to be in line with business strategies

Every year, Thaicom plans to develop its employees at all levels in order to have a career path and prepare the organization to be in tune with the Technology Disruption as well as market competition. Moreover, the employee development needs to be in line with the direction of strategy and goals to create sustainability for the Company. For this reason, it is imperative to develop new work skills for employees (Reskill) or to better leverage existing skills (Upskill) through training or voluntary job rotation. The Company's training courses consisting of the following.

- Mandatory Course to comply with legal regulations and in line with organizational strategies.
- Functional Courses for developing and enhancing skills in a particular field of work, using both traditional learning (Classroom training) and online training through reputable trainers and has been recognized by inside and outside the organization.
- Leadership Development Course to build skilled supervisors on personnel as well as work, and to push this group of personnel to be the successor to important positions in the organization in the future.

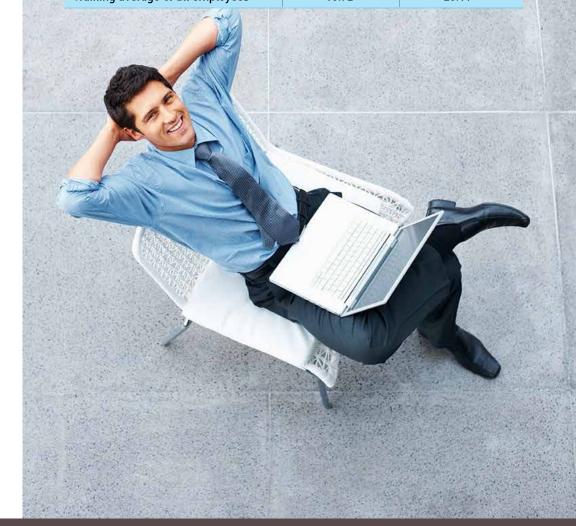
In 2020, due to the COVID-19 crisis, Thaicom has changed the typical employee training into online learning. The Company offers employees the opportunity to take the courses they are interested in through online self-learning, the "UDEMY Learning Online Platform". The Anytime Anywhere self-learning allows employees to continuously improve themselves even when faced with a crisis.

Besides provide training to employees in terms of competency and critical skills (Soft Skill) by recruiting external speakers according to the annual employee development plan, the Company also realizes how importance to develop employees who have potential skills with expertise at work and in various fields. Therefore, these potential employees will come to practice communications and transferring skills to be an internal speaker of the organization itself. All internal speakers will receive a company speaker certificate and benefits as points in TC Me Point.

The Company also continues preparing the human resource development plans to support the succession plan. This is to prepare personnel with capability for leadership and be ready to be responsible for tasks in higher positions through various human resource development courses. These training courses are designed to be a one-year course for continuously learning, practicing and integrating it into daily operations.

For the performance of the year 2020, the Company has organized 29 training sessions to its employees.

	Classified by Job Level	Hours/Personnel	Hours/Personnel
þ		2019	2020
	Operational Level PG 3-9	16.32	19.66
	Manager PG 10-12	16.56	22.37
	Executive PG 13-15	24.19	4.96
	Senior Management - C Level	3.75	87.5
	Training average of all employees	16.72	20.11





3. Occupational health, safety and working environment: Employee Well-Being

Thaicom realizes how importance of the health and safety of all employees. The policy has been formulated to guide on the practice and development in the management of occupational health, safety and work environment. Furthermore, there is an election of the Occupational health, safety and work environment committee with a 2-year term. The committee consists of 9 representatives from management and employees in proportion of total employees. This is to ensure that plans and prevention measures will be monitored and controlled to protect the safety of all employees at all levels and in accordance with the legal regulations.

In addition, Thaicom promotes programs and activities for good physical and mental health, and create happiness in work and better quality of life for all employees. The Company continues to use "TC Me Point" to induce employees' participation in activities to redeem items. For measuring a success in each activity, the Company has asked employees for their feedback and satisfaction which will be used for future activities.

In 2020, the Company has set a goal of 5% more employees to participate in activities compared to 2019. However, due to the COVID-19 epidemic situation, our employees had to work from home for several months. Therefore, the plans on many activities at the beginning of the year had to be canceled. During the second half of the year, the Company still had to carry out activities in a new normal way by keeping a distance according to the Social Distancing principle.

Number of employees participating in activities. (Counting 1 personnel/ 1 activity) 2019 (no. of participant) 403 2020 (no. of participant) 2026





The examples of human resource development courses for 2020 are as follows.

Course	Target Group	Objectives	Learning Style
Group Talent Development Program–Foresight with Digital Lens to Navigate the New Normal	Employees in the group of Next Generation Leader PG 11-12 Levels	 Develop Leadership skills and building competitiveness and business adaptation. Develop team management skills to be ready for change and build a team with great performance. 	 Learn from lectures by Experts. Learn from the Experts sharing experience Learn from analyzing case studies. Online learning
Thaicom Talent Development Program	Employees in the group of Next Generation Leader PG 6-10 Levels	 Develop business knowledge and apply this knowledge to the organizational management. Develop team management skills. 	 Learn from lectures by experts Learn from the experts sharing experience Learn by doing business simulation activities. Online Learning Program
Agile Implementation	Employees who work on current business projects, totaling 5 projects by training how to use Agile working processes in team management.	 To build knowledge and understand about the Agile operation. To study working methods that will be used as a Blueprint for creating an Agile corporate culture in the future. 	 Learn from lectures by Experts. Use group activities to exchange perspectives and management methods. Coaching Project-Based learning
Feasibility Study	Employees who analyze feasibility and investment decisions of business projects.	 To build knowledge and understanding on the feasibility study for investing in business projects. For effective business project planning. 	Learn from lectures by Experts.Learning by project example.
Perfect Pitching	Employees who need additional management, situational and communication skills, as well as presenting information.	 To understand the processes and strategies of sales pitching To learn and understand the presentation techniques, answering questions and persuasion. 	 Learn from lectures by Experts. Coaching with individual presentations.
One Page Summary	Employees who need additional skills in systematic thinking processes and capture important points for presentation.	To understand how to summarize information clearly, be relevant and categorized to understand in a short time.	Learn from lectures by Experts. Learn by practicing from doing exercises.
Microsoft Excel Beginner to Intermediate level	Employees who want more skills to use the program, Microsoft Excel.	To learn to use various functions in the program.	Learn from lectures by Experts. Learn by practicing from doing exercises.



Examples of project performance and activities in 2020

Project/Activity	Objective	Operation Methods	Number of Employees participated	Percentage/Number of Employees
STAFF Meeting	Inform employees on the Company's business performance and major information to employees every half year or whenever there is an important incident	Organized a Town Hall Meeting and broadcasted overseas' branches via ZOOM	300	84.74%
Thaicom Internal Heath Coach	Develop employee to gain knowledge and skills as a Coach for Thaicom Young Fit II activities.	Held a theory training online and focused on smal group activities	16	4.68%
Thaicom Young Fit II	Promote exercise and health care by employees for employees	Held a theory training online and focused on small group activities	31	9.06%
First Aid and Fire Evacuation Drills	Raise awareness and knowledge on fire prevention and suppression in the workplace	Held theory and workshop training in every office	38	11.11%
Everyday Look	Promote good mental health, create happiness and build a good personality for employees.	Workshop	24	7.02%
Electrical Safety in the Workplace	Promote safety in the workplace and promote employee engagement (as a speaker)	Held theory and workshop training	15	4.39%
Thaicom Market Place	Boost up happiness and employee participation as well as to promote Entrepreneur skills	Recruited stores operated by employees to sell their products and in conjunction with the project to reduce the use of plastic bags for environment	108	31.58%
Thaicom 29th Anniversary	Promote good mental health and employee participation, and catering food for employees	Organized Buddhist merit making ceremony and luncheon party	290	84.80%
Office Decorating Contest	Promote good mental health, boost up happiness and fun, and release stress for employees	Recruited small group to join activity	35	10.23%
Blood Donation	Promote good physical and mental health	Managed Blood Donation activity in the office	109	31.87%
Thanks A Million	Create employee motivation and engagement for their dedication to special events throughout the year	Organized certificates ceremony to participants with souvenirs and luncheon	50	14.62%
TC Me Point	Build awareness on company news and information, and employee engagement	Earn points from participating in activities or reading company's news and information via e-mail	330	96.49%
Thaicom Club Activity	Promote exercise activity for good health under Thaicom Club	Organized activities to promote the club and to recruit more employee to join	31	9.06%
Internal BU Activity	Create a positive workplace relationship between management and employees, and between supervisors and team members	Allocated budget for each BU to manage activities within its BU as appropriate.	349	99.71%
Work from Home The Series	Provide knowledge and self-management methods to employees on how to work from home and how to stay hygiene.	Prepared image media to communicate with employees via email and join various fun with activities online	300	87.72%



- 0 employees injured/died.
- 0 Number of employees on leave due to work-related accidents.
- Statistics of sick leave rates of employees: (Not because of an accident from work)
 - Total of sick leave were 558 times, and sick leave for more than 3 days, were 155 times. (repeating the number of leave)
- Employee sick days totaling in 2020 were 4,854.5 hours.
- Absenteeism Rate = 0.63%

Note: The average number of employees in 2020 = 406 people, and the number of working days were 238 days or 773,024 hours.

Promote Employee Health: Thaicom Young Fit II Project

Program objectives

Thaicom has organized a wellness program with regularly health promotion activities for employees. In 2018, the Thaicom Young Fit program was launched in collaboration with Phyathai 2 Hospital to solve the health problems of employees who participated. This program was successfully achievement according to the targets. Therefore, in 2019, we have organized TC We Coach program to encourage employees to become health coaches. So that those Coaches can share knowledge and become a mentor in health care to employees who participated in the project.

In 2020, Thaicom has still continued to promote health care for employees. The "Thaicom Young Fit Phase II" project was implemented. However, due to the COVID-19 epidemic situation, the Company has a policy for employees to 'Work From Home (WFH)'. The Young Fit Phase II has therefore been adjusted to cove with the situation by focusing on online learning and activities to make it convenient, safe, and maintain a social distancing. It also encouraged employees to take care of themselves more even when working at home. During the activity, The Company has recruited a team of specialists in both nutrition and exercise from outside the organization to assist the Coach team throughout the duration of their activities. It was to ensure the Coach team has the confidence to provide accurate information to their team. The program recruited 31 employees who were interested in participating in the project and separated into teams to compete for various tasks related to health care. The team with the highest scores in total was the winner of the project.

Score recording

Since this was a long-term project (4 months), the employees were divided into 5 teams with assigned internal Health Coaches and members into each team equally. (Internal Health Coaches consisted of 16 employees in total and total of 31 members). So that Coaches can take care of the team thoroughly and provide suitable advice for each team member in order to complete their missions' goals at last.

The activity was divided into 6 missions:

- (1) Mission SMART Goal: Setting weekly health goals as a guide to the achievement of each individual of a big health goal. Everyone must achieve their health goals set each week.
- (2) Mission Burn: Counting 10,000 steps per day using the application from Mi-Band 5 smart watch to collect data.
- (3) Mission Break: Eating in 2: 1: 1 proportion or reducing sweet and salty food and recording information and taking pictures of each meal as an evidence.
- (4) Mission Build: Weight Training or Cardio exercises at least 30 minutes a day using the application from Mi-Band 5 to record data.
- (5) Mission Book: Drink water by giving away of water bottles of the same size to each team members. Where males drink 3 liters a day and females drink 2.5 liters a day and save the information in the project online system.
- (6) Mission Bright: This activity was focused on observing and being aware of their own emotions by recording at least one story a day that makes a good mood, smile, laugh and makes one happy.

The scores were collected online right after the members recorded for the convenience. After the missions completed, the winner teams were announced and awarded due to their goal achievement.

In addition, during the activity running in half-way and after the activity completed, team members have done the satisfaction assessment in order to improve the activity for the next time. The satisfaction scores from the first and second surveys are as follows.

1st Satisfaction Survey scores: 86.11%. 2nd Satisfaction Survey scores: 93.89% an increase of 9.03% from the first survey.

Summary of the Project

- Total 31 team members.
- Total of 16 Coaches to support team members.
- Total of 6 Missions and every mission, member must pass at 70%.
- And those who pass this activity must have an overall score (Success Rate) of 70% or more from every mission.
 - Total of 25 team members who passed in the Project, or equivalent to 81 percent of total participants.
 - Total of 6 team members who did not pass in the Project, or equivalent to 19 percent of total participants.

Please see policy on "Occupational Safety, Health and Work Environment" at https://www.thaicom.net/wp-content/uploads/2019/07/20160531-thcom-cg-policysafety-2016-en.pdf



4. Employee engagement

Thaicom pays attention to the development of its operations by listening to employees' voices. Therefore, there is an Employee Engagement Survey to be analyzed and set up a plan to improve and enhance the company's personnel management. The Company use Gallup's "Q12" for employee engagement survey. In 2019, Gallup's score results was 3.57 / 5 with total of 92% of the employees (both Thailand and overseas) participated in that survey.

For the year 2020 after receiving the results of the employee engagement survey, the Company has formulated a plan to improve the organization development from the aforementioned results. There is a one-year development framework before conducting the next survey. In 2020, the Company has chosed "Performance Management" dimensions to define its operational plans as follows:

- Understand the performance appraisal with employees at the executive level and above in order to have a right understanding and the ability to assess work results accurately and fairly.
- Communicate about the performance appraisal framework and employees at the executive level and above must develop a KPI for performance assessment.
- Review the performance evaluation form.
- Establish a performance development process for employees with lower performance than expected (Poor Performa Nance Management).

In addition, the Company expects that employees will have greater bond with the organization in the next Employee Engagement Survey, especially on the topic of Performance management.

In 2020, the Company also conducted a total of 73 overseas employee satisfaction surveys (Australia, India, Japan, China, Indonesia, Philippines, Myanmar and Vietnam) to inquire and open up their opinions on various matters. The survey results showed 74% of employees were satisfied and the commitment to the organization was at an average of 82%. At the same time, it was also suggested to improve the work that is beneficial to the organization for the management of personnel in each country.

Create employees' awareness and engagement with TC Me Point

Thaicom has launched TC Me Point activity at the beginning of 2019 with the objective to change internal communication styles to be modern and better reach the audience. The TC Me Point activity emphasizes on awareness of information from the Company and attract the attention of employees. In addition, it encourages employee's participation in various activities of the company and to build their engagement. By using the method of collecting points on "TC Me Point", employees who have accumulated points will able to redeem points for various rewards. The results of this activity help create a lively working environment within the organization. Activities are well received by employees, while the atmosphere in the workplace emphasizes happiness and participation of employees as a priority (Happiness Organization). This affects the development of employees and will create sustainable bond between employees and the organization.

In 2020, employees have accumulated a total of 109,696 TC Me Point points and have been redeemed for a reward in total value of 65,506 baht.

2020

74% Overseas employee satisfaction

Average overseas employee engagement

II. Caring for Society

Thaicom has taken the social dimension into consideration to promote sustainable society through business processes. The Company is responsible for delivering quality of products and services that will build trust, reliability, and create value throughout the business value chain (CSR in Process). It also includes the implementation on social responsibility that is not in the business process (CSR after Process). The Company has continued to promote social sustainability under three (3) concepts as follows; focusing on education, improving the quality of life of people in the community, and sharing our knowledge and experience to meet the needs for company's contribution to society for sustainability. Our projects and activities under social dimension are in collaboration with government agencies and local authorities in order to strengthen community and response to many stakeholders in various sectors. Besides we continuously promote the volunteerism and social responsibility among the Company's employees.

Stakeholder Engagement

Thaicom realizes that all stakeholders are directly or indirectly important to the company. The classification of our stakeholders is based on the impact of the Company's business operations on each group. To ensure that the actions and responses to the expectations of all stakeholders are fair and appropriate, the Company has specified in the Business Ethics (Code of Conduct) and Good Corporate Governance Principle, and communicated to employees and stakeholders on the Website, Annual Report and Sustainability Report.



In 2020, we can summarize our performance to meet the expectations and needs of stakeholders as follows:

Expectation/Needs	Response	Performance 2020
Employees		
1. Suitable remuneration and welfare	Treat employees fairly and with respect. Strict on labor law. Provide fair compensation and benefits, which can be compared with other leading companies.	 Held Town Hall Meeting 2 times. Annual Employees Engagement Survey. Provide a communications channels for complaints, whistleblowing of offenses and fraud via Ethics Hotline.
2. Standardized and fair performance appraisal	Train supervisors on knowledge and skills necessary for performance appraisal. Encourage performance appraisal that create employee engagement and openness environment to listen to each other's opinions. Encourage feedback between supervisors and employees.	 Set methods and clear indicators for performance appraisal. Arrange at least two performance assessments a year. Promote a 360-degree performance assessment.
3. Job security, career path and personal skill develop ment in related to company's strategies	Develop employee skills by providing training both inside and outside the organization integrating training in the classroom as well as online courses to increase knowledge, ability and skills in the workplace and create personnel career advancement. And learn from other expertise.	1.Managed an annual Training Roadmap. 2.Total training hours in 2020 was 20.11/employee/year. 3.Total of 52 internal and external training sessions were held for employees.
4. Happy work environment and working atmosphere	Provide a safe and conducive working environment for effective work, which will encourage creativity, innovation and collaboration.	 Provided internal communications channels including voice announcement via speakers in the company, email, social media (Facebook, YouTube, Instagram), website, intranet, and internal information boards. Provided additional channels for comments and suggestions such as walk-in, web board, Ethics Hotline. Promoted the use of TC Mobile App. for internal communication which employee will collect points from the "TC Me Point" and exchange for rewards. Total of 401 emails were sent to employees for Company's news and announcement with total 330 readers. Organized activities to engage employees and created a happiness working environment such as a Christmas workplace decoration contest, Buddhist making merit ceremony and luncheon on the Company's 29th Anniversary.
5. Occupational Health & Safety, and good health insurance.	Strictly follow the human rights principles as well as managing safety, occupational health and working environment with maximum efficiency to create safety for life and property of all employees. Adhere to policy concerning safety, occupational health & work environment.	 Continued the Wellness program and activities that promoted employees' participation in physical, mental, emotional and intellectual health such as Thaicom Young Fit II. Provided a risk assessment for safety control, checking the condition of equipment for emergency response and regular rehearsal plan. Provided an annual rehearsal activity in case of fire to employees Communicated and issued measures for the preventive actions during COVID-19 pandemic that can affect to health and life of employees.



Expectation/Needs	Response	Performance 2020			
Shareholders					
Continue growth with good performance, higher return on investment, and appropriate dividends payment	Set business goals with a focus on revenue and profit growth in adhere to good corporate governance policy and code of conduct, and with the framework of sustainable development Including business continuity standards (BCMS) ISO 22301.	Held the Annual General Meeting one time in 2020 and organized with cautious prevention of COVID-19 pandemic during the meeting.			
2. Respect shareholders' rights.	Welcome all recommendations and feedbacks through various channels. Disclose of company information transparently and verifiable.	 Managed activities with shareholders such as Opportunity Day 3 times in 2020 via the SET's online system to prevent the outbreak of COVID- 19. Held an investor, analyst, fund manager meeting 1 time in 2020 through Zoom system to prevent the spread of COVID-19 Provided communications channels via Annual Report, Sustainability Report, Website, Social Media (Facebook, YouTube, Instagram), and Ethics Hotline. 			
3. The company operates according to the principle of Good governance.	Operate business in accordance with good governance and business ethics which is in accordance with the framework of sustainable development.	1. Has been ranked by the Stock Exchange of Thailand in maintaining the standard of the registered company with a good corporate governance in the level of "Excellent" with 5 stars for the 8th consecutive year (2013 - 2020).			
Regulators					
Conduct business in accordance with laws and regulations.	Comply with the laws and regulations, conduct business in accordance with good corporate governance policy, and adherence to business ethics and Code of Conduct. Adhere to the Company's Anti-corruption Policy (2017 revision)	Had meetings with government agencies to clarify on related issues 80 times. In 2020, participated on Thai CAC activity by submitting our employees group photo showing their strength against corruption during COVID-19 epidemic to reiterate the intention to against all forms of corruption.			
Cooperate in providing information and support government programs or activities as requested.	Cooperate in the projects or assignments of government sectors, which will benefit general public and country. Share knowledge and experience with the government agencies on the satellite technology and related. Cooperate in supporting Information and expertise as requested as well as provide assistance to the government such as during disaster.	 Provide communications channels to receive news information on the movement of the company such as Annual Reports, Sustainability Report, social media (Facebook, YouTube, Instagram), website and publicly company press release. Organized various activities for regulators such as training for government personnel 11 times, business visits for 5 times, provided speakers and lectured on various occasions 8 times. Participated as exhibitor at "Towards Space Technology for Sustainable National Development" Seminar. 			



Expectation/Needs	Response	Performance 2020
Customers		
There are products and services to meet the needs, create business value and worth for the investment.	Offer products and services that meet the needs of customers with quality, reliability, and reasonable price.	 Managed activities to build relationships, share knowledge, and update information with customers on a regular basis. Develop products and services if there are any new technology and will recommend to existing customers to enhance the ability to provide the service and acquire the most cost-effective services such as the development of the Digital Life set-top boxes to meet the needs of DLTV for education channel.
2.Competence and fast speed in problem-solving to ensure continuity of service with good after- sale service.	Develop work processes and training within the organization for employees to develop their skills in order to serve customers efficiently. Comply with a quality control policy and ISO 9001:2008 Quality Management System to create maximum satisfaction for customers and Business Continuity Management System (BCMS)/ ISO 22301 to guarantee our quality of services.	 There was a measure to transfer the customer's satellite network due to the expiration of the Thaicom 5 satellite. Provided basic guidelines for customers when there is interference signal in the system. So that customers can use the service continuously.
3. Serve customers with high quality that creating maximum satisfaction for customers.	Conduct the Customer Satisfaction Survey every year and take on the result for our improvement on product and service to meet customer needs.	In 2020, conducted Annual Customer Satisfaction Survey and the Score Results was 84.89% of satisfaction.
4. Business Ethics and measures to keep confidentiality of customer information and privacy.	Promote business ethics that show responsibility to customers in many areas such as confidentiality of customers information, anti-corruption policy that employees must strictly. Adhere to IT Security Policy and adopt ISO 27001 a guideline for cybersecurity.	1. Provide communications channels for receiving news information on the company's movement, such as Annual Reports, Sustainability Report Social Media (Facebook, YouTube, Instagram), Website, and Email. 2. Provide a complaint channel via Ethics Hotline to report on fraud (if there is any). 3. Held 2 trainings on Cybersecurity and Tests, and regularly internal campaign on Intranet.
Lenders/Creditors		
1. Compliance with terms and conditions	Strictly comply with the terms and conditions of the loan agreement and credit facility. Adhere to Policy on fairness and responsibilities towards business partners and/or creditors.	1. Open opportunities to answer questions in each quarter. In 2020, held the Analyst, Investor, Fund Manager Meeting 1 time via Zoom system according to epidemic preventive measures of COVID-19.
2. Risk and Crisis Management and Business Continuity	Business Continuity Management System (BCMS)/ ISO 22301.Ready to disclose information under the loan agreement or as requested for transparency and accountability. Operate in accordance with and adhere to the framework of the Enterprise Risk Management Policy and Business Continuity Policy.	 Provide communications channels via Annual Report, Sustainability Report, Website, Social Media (Facebook, YouTube, Instagram) and other media. Established anti-epidemic measures of COVID-19 for the occupational health and safety, applicable to all employees and outside individuals who come to our offices.



Expectation/Needs	Response	Performance 2020		
Suppliers/Partners				
1. Adhere to ethical and transparent in conducting business together. Keep equality and fairness across the supply chain. Conduct a transparent and verifiable procurement system.	Communicate business practices according to Good Governance to suppliers/partners thoroughly and consistently. Follow the sustainable development policy In dealing with business partners, which has established guidelines for fair treatment in terms of selection suppliers/partners, and shall In accordance with trade partners' practices and maintain lasting relationships taking into account on mutual benefits and business growth. Adhere to Human Rights Policy.	 Apply the Supplier Charter to old and new partners in order to follow the same guideline for equal treatment. The Purchasing Policy has been updated in 2020. Directly listening to opinions and suggestions from suppliers/partners Provide complaint and whistleblowing channel via Ethics Hotline to report on fraud or corruption (if there is any). Total of 14 sampling suppliers were assessed regarding ESG, and most of them had passed the Evaluation criteria. 		
Compliance with the terms of the contract or agreement for payment of product and service.	Adhere to the contract and abide in order to maintain the credibility of the company and follow company's Code of Conduct. Adhere to Policy on fairness and responsibilities towards business partners and/or creditors and Intellectual Property Policy.	Paid on time. Provide communications channels via Annual Report, Sustainability Report, Website, Social Media (Facebook, Youtube, Instagram), and other media.		
3. Open opportunities in doing new business together or collaboration on products and services development Provide support on knowledge sharing as well as communicating in order to see the trend and direction of the company's business operation. Collaboration on product and service development and improvement. New business cooperation by using the strengths and expertise of each company.		partners for future business and collaboration, such as business negotiations,		
Communities				
Support community to create a better living continuously	Focus on building a sustainability for community by using our strength in business. Continue the Thai Kids Thaicom Project for equal opportunity in education. Continue support for career development Fund to students under the Non-formal and Information Centers as our alliance in remote areas. Promote and raise awareness to employees on social and community development through various Company projects and activities.	 Thai Kid Thaicom Project donated 158 sets of satellite dishes to schools. Under Run for School 2020 activity, donated 34 sets to schools in different provinces as the winners requested. Organized 6 activities on Thaicom Volunteer Project 		
2.Environmentally business	Continue promote energy conservation, electricity and water use, Greenhouse gas management and raise awareness among employees and communities to create a better environment. Adhere to the Policy Concerning Energy Conservation and Environmental Policy.	1. The "iSAVE" project to promote measures for energy and water saving in the offices. (Please see the iSAVE's performance compared to 2019 in the environmental section). 2. Thaicom Loves Earth Project to help reduce a global warming by reporting on the Company's GHG emissions with target to reduce the amount of GHG emissions, as well as to reduce the amount on waste such as plastic and paper compared to our target. (Please also see the summary report on GHG in the environmental section.)		
3. Sharing information and knowledge on satellite technology and other areas to students and government agencies.	Build knowledge on satellite technology by sharing knowledge and experience by employees in the organization to inspire young people who interested in technology for future development.	Open opportunity to visit Thaicom, total of 10 agencies and universities visit in 2020. Provided lecture and keynote speech by Thaicom executives and employees in many events.		





Thai Kid Thaicom Project

Thai Kid Thaicom is an educational project that the Company has continuously operated for a long time because of benefits for children. Therefore the Company push its efforts to build on and integrate with various partners to expand and increase the number of beneficiaries from the project as much as possible. The Company believes that all human beings should be entitled to equal, in particular, the right to "education" and "access to information". In addition, education is also the basis of human development to build a sustainable society. The Company has a goal to improve the quality of education. Including supporting guidelines of "Office of Non-Formal and Informal Education (NFE)" to reduce social inequality through learning programs to create careers such as the Thaicom Social Fund for Sustainable Development Project. Details of the implementation of the Thai kid Thaicom Project in 2020 are as follows:



Beneficiary

- 1. Total of 76 Schools and educational institutions across the country.
- 2. Total of 3 Schools under the Senate Education Fund Project.
- 3. Total of 40 "Mae Fah Luang" Hilltribe Community Learning Center in Tak province and other 5 Centers at Omkoi district, Chiang Mai province.
- 4. With Thai Kid Thaicom satellite dish set, the beneficiary is counted on the average of 100 students per 1 set. Therefore during 2011-2019, Thaicom delivered 7,861 sets of satellite dishes, with total of 786,100 beneficiaries (approximately), and only in 2020, 158 sets of satellite dishes, with total of 15,800 additional beneficiaries. In summary, total number of students who received benefits was 801,900 (approximately).
- 5. Supported online teaching and learning for students at the Setsatian School for the Deaf under the Royal Patronage to be a model to expand opportunities for deaf students to have educational opportunities throughout the country even during COVID-19 pandemic.



Community Development: Thaicom Social Fund for Sustainable Development Project

With the concept to strengthen community and social development for sustainably by the creation of a learning and communication infrastructure to the process of creating knowledge from distance learning via satellites, one can apply knowledge gained for careers to improve the economy and society for a better quality of life. Thaicom therefore cooperates with "Office of the Non-Formal and Informal Education" (NFE) in extending learning from the Thai Kid Thaicom project to remote areas in the highlands along the border of Chiang Mai, Nan, Tak, Mae Hong Son and the Morgan Community Learning Center, Phang Nga Province by initiating the project "Social Fund for Sustainable Development" in 2016. This project aims to promote the use of knowledge from distance learning education via satellite to improve the quality of life as well as enhancing the professional skills of the community. Funds are given to create careers for NFE students in the form of "Community Development Fund for Career Development "to support knowledge creation, fund management and the combined concept of "Constructionism" with the "Lifelong Educational Philosophy Mechanism" of the NFE as the driving force. With the aim of "learning to create a career" will help communities in the borders of Thailand have a sufficient income and better living, and becoming strong and able to create sustainability to their own community in the end.

Regarding the Social Fund for Sustainable Development Project, Thaicom, together with NFE, have just evaluated the achievement on each project, done by NFE students at the end of the year 2019. It took some time to follow up and evaluating results after receiving funds from Thaicom. However, the goals are set in two types as follows.

- 1) Social quantitative goals The output from the "Social Fund for Sustainable Development Project" is added to the value of the initial capital. It is calculated from the product value, project expansion value, and income from the project.
- 2) Number of students' projects meet the criteria on sustainability -The indicators developed from the collaboration between the Company and Office of the Non-Formal and Informal Education.

The objectives of both goals are to track progress and provide further support continuously. Thaicom sets the goal for a period of five (5) years that each project can be sustainable.

According to our monitoring and evaluation on the projects under Thaicom Social Fund for Sustainable Development (Thaicom granted 5,000 baht per scholarship to NFE students in 2019, totaling of 500,000 baht) using the sustainable indicators that Thaicom has created in collaboration with NFE, the projects that passed the criteria accounted for 89% and the growth of capital increased by 117,850 baht or 23.57%. In addition, the project value would be in the form of project processes such as assets, revolving money and waiting for production.

Performance compared to the sustainability goals

	Fund Granted Year	2023	2022	2021	2020	Base Year 2019	Total Fund
1) Quantitative goals on		10%	7%	5%	3%		
Social aspect Value	2560					4.82%	315,000
added from original	2561					2.60%	300,000
funds	2562					n/a	500,000
	2563				23.57%		
2) The number of		75%	70%	65%	60%		Total Projects
projects that met	2560					100%	16 Projects
Thaicom Sustainable	2561					100%	17 Projects
Criterias	2562				89%	n/a	48 Projects



2020 Performance of the Projects under Thaicom's Social Fund for Sustainable Development, in accordance with our 6 Sustainability Indicators

no.	Indicators		Project Performance (in percentage)						Procedures			
		2016-	-2019	20	17	20)18	2019		20)20	
		yes	no	yes	no	yes	no	yes	no	yes	no	
1	Project implementation using Learning methods and Learning management procedures of NFE.	36 100%	-	3 100%	- -	16 100%	-	17 100%		48 100%	-	Before proposing a project, the requirements, methods, steps and learning management procedures must be prepared.
2	Household accounting with controls and inspections by the NFE teachers who responsible for the project (of the scholarship recipient)	27 75%	9 25%	3 100%	-	11 68.75%	5 31.25%	13 76.47%	4 23.52%	48 100%	-	From 2016-19, some projects had changed the reponsible teachers; and communities did not continue the projects.
3	The Project progress reporting through the District Director of District Education who is the primary inspector.	36 100%	-	3 100%	-	16 100%	-	17 100%	-	48 100%	-	Track the progress of teacher in the Hill Tribe Community Learning Center area closely.
4	Fund management by allocating funds to starting capital and working capital.	31 86%	5 14%	3 100%	-	12 75%	2 12.5%	16 94.11%	1 5.88%	48 100%	-	From 2016-19, some Projects cancelled due to the migration of scholarship recipients whom teachers are following.
5	Preparation of a plan for funding or products valued from Projects and to continuously expand the Project.	33 92%	3 8%	3 100%	-	14 87.5%	2 12.5%	16 94.11%	1 5.88%	48 100%	-	The 2016 Project has not yet specified plans for expansion the projects, but NFE teachers are continuously monitoring the operations.
6	Generating income from project operations, which is in monetary or the value of the product.	35 97%	1 3%	3 100%		15 93.75%	1 6.25%	17 100%	-	21 44%	27 56%	Most of the product is circulated within the project.

Recommendation

- Send all 6 indicators to the Non-formal and Informal Education Centre for each project evaluation along with tracking Fund that has not been implemented to move to other NFE student who needs.
- The summary of the sustainability indicators of the projects of 2020 is at 89%

The results of the 6 sustainability indicators of the project during 2016-2020 are at 89%



However, in 2020, after the summary of performance on the Social Fund for Sustainable Development, according to our indicators and criteria for assessing the sustainability, the Company is aware of the problems and obstacles that the fund recipients are facing. It is like a lesson learning for them in a real situation in career development. However, the Company has discussed with the Office of Non-Formal and Informal Education for preliminary problems solving.

The examples of the problems and obstacles are as follows.

- 1. Weather conditions are not conducive to the project, such as too cold weather, causing the agricultural product not enough for sell.
- 2. High costs such as the cost of materials and equipment to be used in the project and ready-made animal feed, and young plant.
- 3. The fund recipient lives a remote area, so it's obstacle for the transportation of goods
- 4. The community has little or no regular income, but there is a need for the product. Therefore, the product sales must be in installment payment causing uneven working capital for the fund recipient.
- 5. No electricity in the community affects the productivity.
- 6. Unprocessed agricultural products are sold at low prices and there is no exact market to sell products.
- 7. Limited space for raising animals, therefore it overcrowded causing the animals not fully grown.

Our Solutions

Thaicom and NFE will cooperate to provide additional knowledge for career development undertaken in the project. These include educating by NFE teachers as a consultant, providing media for skills development, following news information on weather forecast, and learning how to do that job from various media, such as from satellite TV installed at the NFE Centers by Thaicom. In addition, NFE teachers as their mentors will be coaching the recipients from

the planning process before investing, purchasing process to reduce costs, occupational process management to reduce constraints, finding solutions to increase production, processing products, and increasing product value. Thaicom and NFE teachers will conduct a regular follow-up and assessments of their career development towards sustainability.

In addition, the Company has provided additional guidelines for NFE teachers and students to be prepare enough information on their project before receiving Thaicom Social Fund in the future. These are as follows:

- 1. Preparation of a project to propose for funding. Responsible teachers and Non-formal and Informal Education students who propose the project should be analyze the context of the area that is suitable for operation. It includes site preparation which is ready for organizing activities according to the project. In the past years, the Company gave scholarships to projects that NFE students interested in doing so for future career. Therefore, it may cause various problems as mentioned above.
- Acquiring knowledge from expertise partners in order to recommend methods of
 operations. For example, for animal husbandry need to consult livestock agency in the
 area, for agriculture need to consult an agricultural agency such as which crops are
 suitable for planting in the area of the scholarship recipient, etc.
- 3. Reporting on performance by local NFE teachers. There should be an ongoing report to the district NFE administrators to take part in solving problems or giving advice in a timely manner and to support and operate in line with the fund's objective as a sustainable development for remote communities.





Summary of the performance of the social contribution project in 2020

Project	Goals and Actions Plan	Performance in 2020
1. Thai Kid Thaicom	 Promote education and reduce educational gaps among schools in remote area. Donate satellite dish set with installation for schools in remote areas or where is lack of teachers. Provide training satellite dish installation and how to use and maintain it, for vocational students, teacher of Border Patrol Police School and the Non-Formal and Informal Education Center's teachers to increase efficiency and provide opportunities for additional career. Support teaching and learning in educational institutions during a crisis 	 Donated and installed Thai Kid Thaicom Satellite Dishes and STB sets: Total of 76 schools across Thailand. Total of 3 schools under Office of the Basic Education Commission. Total of 45 Mae Fah Luang Hilltribe Community Learning Centers for non-formal and informal education. Trained the installation of satellite dishes to Doi teachers at the NFE Center, Tak Province. Supported online teaching and learning for students at the "Setsatian School for the Deaf" under the Royal Patronage which will be a model to expand opportunities for deaf students to have educational opportunities throughout the country, even during COVID-19 pandemic.
2. Thaicom Social Fund for Sustainable Development in Community	 Promote the concept of setting production fund and revolving fund to create shared values between Thaicom and society as well as interests in sustainability. Support the Project of Forestation Under the Royal Initiative, the Scholarships project for children in the Highlands and the Carreer Development for Sustainability Project with the Office of the Non-Formal and Informal Education (NFE), which led to initiative "Career Development Fund based on Community Capability" by Thaicom. Install the satellite dish set for NFE Centers and Mae Fah Luang Hilltribe Community Learning Centers for non-formal and informal education and knowledge for their career that suits the geography. Support additional knowledge training for NFE students from experts and speakers and government agencies. Organize a meeting to discuss the achievement, lessons learn and experience on projects with Scholarship recipients. 	 Postponed new scholarship donation and activities for the "Community Development Fund" to NFE students due to the COVID-19 epidemic in 2020. Expected to be back on track in 2021. However, we continue to follow up on the progress of the project to assess the success of the project in two goals: quantitative goals on Social aspect and the number of projects of Students who met the company's sustainability metrics. We found that in 2020, 89% of the projects that met the sustainability criteria and showed a 23.57% growth from the original funds they received
3. Space & Satellite Pavilion	 Share knowledge and experience on space and satellites as the first Thai Satellite Service Provider to Inspire visitors on space technology Provide an opportunity for the visits in group only. 	In 2020, due to the COVID-19 pandemic, the company visits for outsiders were cancelled and allowed only certain groups with total of 10 government agencies and university.
4. THAICOM Run for School 2020	 It is a health promotion activity along with providing educational opportunities that firstly, build upon the company's THAICOM 10K run competition since 2016. By recruit runners from all over the country to run at least 1,000 km/ team/at maximum 8 runners within our scheduled. Winner teams will select the schools they want us to install the satellite dish and STB. With our slogan "Just join us for a run, we will install a satellite dish to school for free". Able to expand cooperation with various running events in order to have more groups of runners to have a chance for give satellite dishes to children for educational opportunities. 	Organized the 5th Thaicom Run for School 2020, with total of 400 runners/50 teams participated. Total of 34 satellite dish sets installed to 34 schools in remote areas across the country, as requested by each winner team.



Promote Volunteer

"Thaicom We Share" is the project that encourages Thaicom employees and its affiliates to participate in the development of society and community. The project allows employees to brainstorm for procedures and solutions, and then take action to solve social issues. Ongoing activities are followed up and participated in, allowing employees to develop themselves in other areas besides their duties. It also raises awareness and public mind to be a social developer in the future. We believe that if employees have public mind and are aware of the development, they will be able to become a developer in terms of the role and mission in their duties and careers as well as a developer in the role of a member of the society.

Thaicom We Share Project is subjected to promote volunteering for employees. In 2020, The activities have been carried out 6 times by supporting through various channels in accordance with the Social Distancing measures due to the COVID-19 pandemic.









Our Responds to COVID-19 Pandemic

I.Immediately action to response to the epidemic situation of COVID-19.

Early in the COVID-19 epidemic, Thaicom conducted an impact assessment and established important Measures to be effective on its employees in response to incidents that arise in a timely manner. The actions are summarized as follows.

1.1 Immediately appointed a "Crissis Management Team" for management and coping with the outbreak of COVID-19 in accordance with emergency action plans and for business continuity.

Thaicom was aware of the impact that would arise from the outbreak of COVID-19, therefore, immediately appointed a Crisis Management Team (CMT). CMT included the Chief Executive Officer as Chairperson with team members including high and intermediate levels in charge of the major departments. CMT has managed and defined various important and necessary measures according to the situation arises with reference to the Company Crisis Management Plan and Business Continuity Management Plan and so on. The Crisis Management Team is responsible for considering risks and impacts on the Company and employees as well as the stakeholders in our business value chain, who may be affected, such as customers, business partners for short and long term.

1.2 There were announcements of various Measures that effective within the Company and with the intensity adjusted according to the situation arises and refer to government Measures during that times.

Thaicom has announced various Measures that are effective within the Company from January 2020 onwards. The Measures covers employees, Sub-contractors such as maids, security guards, and gardeners, customers, business partners and other visitors. The Company has monitored the COOVID-19 epidemic situation domestically and internationally, where were vulnerable areas and the government Measures were unclear at that time. Our Measures were such as monitoring when travelling to work in vulnerable areas, campaign for everyone to wear face masks at work, cleaning the offices more frequently than usual, setting up entrance and exit screening within the office, organizing in-out routes at the main entrance in all offices, record entry-exit of all employees and visitors, Measures that will force employees returning from high-risk countries or abroad to quarantines themselves 19 days when Thailand has not yet lock-downed. Then the Company has enforced additional Measures for employees to refrain from traveling overseas for businesses and strictly prohibited. There is a measure on the body temperature of everyone who came into our offices until now. Moreover, there are hand sanitisers placing throughout the offices, and

Social Distancing Measures have been put in place. For example, the Company set up a distance of one meter between chairs in the canteens, limit the number of attendees in the meeting room with an acrylic partition between seats, refrain from organizing activities that involve many people and arrange meetings via VDO conferences, etc.

The Measures was to be adjusted or strongly enforced according to the situation of the epidemic and infection in Thailand at that time. The Company has monitored the situation day by day in the early stages of the epidemic. However, whenever the government announced any Measures, the Company has strictly followed through and issued as internal Measures after that. So that it was effective for all employees immediately.

In December 2020, following a new wave of COVID-19 infection in Thailand, Thaicom has issued Measures that employees or their families traveling or living in Samut Sakhon Province during the epidemic must report to the supervisor and Self-Quarantine (Work from Home) for a period of 14 days, starting from December 20, 2020 onwards. If there are abnormal symptoms, they must see a doctor and report a high-ranking supervisor immediately. Later on, the Company has issued special Measures when the epidemic was increasing and widespread throughout the country. Employees in each department must be divided into two groups in order to switch to work in the office and to work from home as appropriated to reduce the risk of infection as well as maintain Social Distancing Measures, etc.

1.3. Measures at the Operation functions to ensure the continuity of service and employees have the maximum safety and healthy

For operations and management at Thaicom Satellite Station during the Country lock-down period, the Company added emergency backup Measures with strict requirements such as limiting the number of employees in Satellite Control Operations and TV Broadcasting Service Operations. Most employees are instructed to work from home. Operations Team has divided teams to work in activities as needed. For those who come to work must wear a mask all the time, must thoroughly washed the hands, and must follow other Announcements. In addition, the Company does not allow outsiders to enter the workplace, unless necessary, such as equipment maintenance. Team must clearly work separately and can work as a replacement or switch work without touching or close contact with each other. They must fill out documents for outsiders to enter the office. In addition, online technology has been applied to communicate with each other even more than before, such as VDO conferences, operations, approvals, and commands. As a result of this modification of the method of operation allowing the Company to continue to operate as usual and employees are safe and remain in good health without being affected at all.



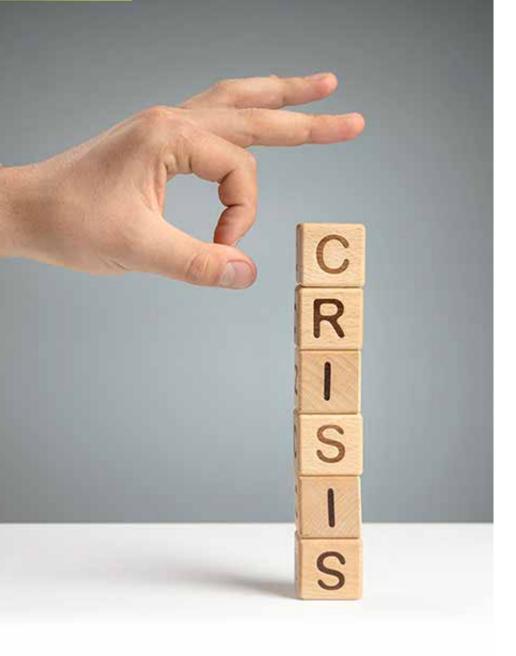
1.4. There were additional Measures and office building improvement to support for control and prevention of COVID-19 epidemic. The operations are as follows

- Installed Access Control system at the main entrance (Previously, it was an automatic door) in order to check back in and out of employees and outsiders in case of someone infected with COVID-19.
- Installed CCTV cameras at the main entrance to record images of people entering the building. Later in early July, the Thermo Scan Wi-Fi Camera system was installed to detect the temperature of everyone entering the building to ensure accuracy and facilitate employees.
- Organized the meeting rooms, visitor areas and canteens in accordance with Social Distancing Measures.
- Installed an acrylic panel at the information counter at the main entrance.
- Installed acrylic panels in every small meeting room for social distancing.
- Set Measures for the meeting room including setting space between seats, limiting the number of attendees, and the attendee's Sign-in Form that are placed in every meeting room.
- Cleaned the air conditioners with disinfectant in every office.
- In the main operation areas such as the Satellite Control room, the Master Control Room for TV broadcasting service, the Server room of broadband satellite system, only on duty employees are permitted to work within the said areas.
- Installed the Container with air-conditioner outside the Satellite Station building in case of an infection occurred in the Satellite Control Room. So that the team can use it as a temporary office. This is to ensure the maximum safety of employees while on duty and to control the spreading area of infection. Hence the business can continue until the cleaning in the infected area is finished.

Summary of crisis management guidelines according to our measures as follows.

Measures	1st Wave 25 March – 19 April 2020	2nd Wave December 2020 - Present 2021
Epidemic Prevention Measures	 Suspend travelling overseas both for work and personally. Employees returning from high-risk countries must Self-Quarantine for 19 days. If exposed to vulnerable people, must Self-Quarantine for 14 days. Screen visitors by checking travelling history, measure body temperature and not allow to enter inside offices. Measure employee's body temperature before entering the office building. Employees must record when using the meeting room to verify. Switch working days, work rotation (25 March - 19 April 2020) Social Distancing: keep meeting spaces far apart and support online meetings. Cancellation of Songkran holidays. 	 Suspend cross- provincial travelling and overseas travelling. Change from organizing activities, training and seminar in the meeting room to be Online and other formats as appropriate. Strictly increase degree in screening everyone in and out of the office. Switch working days according to the consideration of the supervisor. Social Distancing, keep meeting spaces far apart and support online meetings.
Measures for Cleanliness	 Clean the exposed areas every 15 minutes. Clean the floor and spraying disinfectant on a daily basis. If there are people at risk, will clean the potential infected area immediately. Clean the air conditioners with disinfectant liquid. 	
Measures for preparing Tools and Equipment	 Install air purifiers. Install additional surveillance cameras. Purchase a temperature detector Distribute a mask to employees. Prepare a protective clothing (PPE) for the crisis. 	Distributing more masks for Satellite Controllers.
Measures for Aid	 Provide COVID-19 insurance for employees, effective from 18 March 2020 – 17 March 2021. Offer COVID-19 insurance for employees family at a special price. Coordinate hospitals, health insurance and Social Security in health examination. 	
Other Measures	 Communicate with employees on a regular basis for understanding and reduce panic. Educate employees in taking care of themselves. Applied technology to reduce exposure, such as, paying through QR CODE. Prepare the BCP for emergency situations. 	 Communicate with employees on a regular basis for understanding and reduce panic. Educate employees in taking care of themselves.





II.Crisis Management during COVID-19 pandemic

The nature Thaicom's business is a service provider of communication satellites and telecommunication networks that need to provide customers with continuous transmission from satellite 24 hours / 7 days. It is a core management process for business continuity under normal conditions. The operating system within the company has an ISO system to ensure service quality. In addition, there is an internal audit committee to assess risks and related ISO performance. There are also regular inspections and care for necessary equipment to be ready to use at any time. These include the equipment maintenance and the gasoline reserved for electric generators and other equipments. Furthermore, the Company has a Crisis Action Plan and a Business Continuity Management Plan (BCMP), with responsibility assigned to related departments to immediately manage whenever crisis occurred. The procedures and processes are rehearsed and reviewed every year. In the past, when the Company faced crisis that affected customer service such as local power outages or major flood in greater Bangkok areas, the Company still can serve the customers 24 hours / 7 days without any problems.

For the year 2020, with the COVID-19 epidemic that may affect the health and life of employees, their families as well as stakeholders, Thaicom has issued various Measures and Actions to face the crisis. All were in line with the same direction from the ad hoc committee, "Crisis Management Team / BCP" to deal with the crisis. The details are as follows.

- 1. Appointed a committee, "Crisis Management Team / BCP".
- 2. Management of information technology systems in advance to support "Work From Home (WFH)".
- The Information Technology System (ITS) Department prepared various tools and systems as much as possible to enable employees to work from home as if they were working in the office such as a VDO conference. Normally, the Company uses a Conference Call (only audio) for a regularly meeting with branch offices or with business partners in foreign countries, and meeting via Web EX Application and Microsoft Team. When it comes to COVID-19 with the widely use of "Zoom Application" in foreign countries, the Company has trained employees how to use it before implementing WFH Measures which a small group meeting online is needed than ever before. The Company has subscribed a Zoom Cloud Meeting License and MS Team License for employees to use legally for efficiency and effectiveness in our business operations.
- The ITS Department has expanded the bandwidth of both International and domestic links to support the traffic load when employees use VPN. ITS have regularly tested and monitored on the utilization of bandwidth, service ability, and monitored Data Security; especially, the access to VPN and VOIP.
- The Company allows ITS team to divert calls from their office telephone number to their mobile phone number in order to inspect the "Internet of Things IOT Assessment" for the maximum security of company data. However, ITS team must work from home as well.



- Organized training for employees and set up necessary systems in their computer notebooks, prior to implement WFH Measures, for accessing various tools, especially Zoom and user manuals for other systems such as VPN and VDO conference.
- Provided access to the Company's "Connect to the Office from Anywhere" system, including:
- VPN connection from home to Office.
- Use a Share Drive from home.
- Use of other applications such as Web EX and Intranet Services with many internal online systems. The Company has developed internal document management system to be online as much as possible. These include such as approval system, purchasing system, expense system (for advance money, Customers' Contracts), Internal Memo, Employees Leave Online system, and Van/ Meeting room/ Smart Office Reservation system, etc. Since most of the Company's document systems are available online that connecting from user to authority for approval, it is easily for employees to work from home as soon as a crisis arises. The Company has gone through many emergencies that may affect business in the past therefore, it is aware of the importance and needs for employees to be able to work anywhere for business continuity. The working methods was improved and developed overtimes in order to be ready for unexpectedly incidents. However, the most important thing Is to take care of the back office that connect VPN from home to office to be stable and with maximum security system on the Company's data.
- In 2018, the Company created "TC We Link Application" to support mobile usage to be another channel for employees to easily and quickly access the intranet system, and to receive Company news including a "Call Tree" system during an emergency. The Company is constantly developing information that can be viewed on the TC We Link App. During WFH, several information was uploaded on TC We Link, so that employees could connect with the Company via a mobile phone.
- 3. Issued the WFH guideline and the E-Meeting guideline in accordance with the Ministry of Digital Economy and Society including a policy to monitor those who are necessary to come to office or employees who will attend a meeting or work outside. However, employee can request for a permission through the Visitor Online system or the Memo Online system.
- 4. The Human Resources Department (HRD) issued the "WHF" Measures (after WFH was trial on some departments in March) from April to July 2020, including Guideline and Policy and various communication channels with the Company and between departments. In addition the Company informed employees on the principles of the E-meeting according to the law.
- 5. Managed other facilities, such as office space management according to the Social Distancing Measures, cleaning office space, preparing equipment for sensing body temperature, providing enough supplies during the Lock-down period.

- 6. Prevention of hygiene such as wearing a mask, washing hand, providing useful advices, buying additional health insurance for COVID-19 for employees.
- 7. Management of business continuity according to the plan.
- 8. HRD is responsible for Internal communications related to employees. The contents were screened by the Crisis Management Team, such as Measures related to COVID-19, employee benefits, how to keep yourself and your family safe from infections, WFH way of working, saving electricity at home during WFH, etc. It will give employees a sense of care and connect between each other during WFH. Besides, the Company has communicated to employee such as how to behave at work during the easing of measures.
- 9. The Corporate Communications Department is responsible for external communications both local and international, to send the message to stakeholders that the Company continues its business operations even during COVID-19 pandemic.
- 10. The Crisis Management Team has monitored and assessed COVID-19 via VDO Conference every week during the first period of pandemic and issued necessary Measures announced to employees by HRD. In addition, Measures has been issued continuously until during the second epidemic in December 2020.

III.Mitigating impacts and taking care of stakeholders

1. Employees

- The Company communicated to employees about COVID-19 via email periodically to update and raise awareness of self-care such as how to protect yourself and your family from infection.
- Informed employee via email and TC We Link Application on mobile about COVID-19
 using information from the government agencies because of reliability, such as the right
 methods to wash your hands, wearing a mask, and the Notes on COVID-19 infection
 symptoms.
- Distributed masks to all employees as well as sub-contractors such as security guards and maids.
- Issued WFH Measures for employees in the overseas branches including Japan, India, Australia, the Philippines and Indonesia.
- Informed employees on the benefits of the insured regarding COVID-19.



2. Customers

- The COVID-19 does not have a direct impact on Thaicom. Because we are a service provider of Infrastructure and wholesale, both Broadcast and Broadband services, not a Retail. However, the Company must continuously monitor the impact of COVID-19 on each customer since they may be directly affected by COVID-19. In addition, the Company provides adequate cash reserves in the event of a prolonged event that will affect the Company's income.
- Sales personnel will contact customers via telephone (mobile phone), email and VDO Conference without direct contact with customers.

3. Suppliers

- Communicate suppliers via email or telephone.
- For product delivery, billing or to receive checks at the company, suppliers must have an appointment with the purchasing department staff in advance because the Company has Measures to limit the number of people in the offices at that time.

4. Shareholders/ Investors/ Analysts

- The Company postponed the Shareholder Annual General Meeting from March to 22 July 2020 and applied the Social Distancing according to government Measures.
- For institutional investors or analysts, the Company provides information as usual because mostly
 communicated by email and telephone. In case of coming to the office, the Company has reserved
 only necessary meeting.

5. Community

- The Company donated equipment and organized training for teachers on how to use the equipment for teaching students of "Setsatian School for the Deaf under the Royal Patronage" during the period of no classes at school due to COVID-19. These students are not able to study on the DLTV channels, which is the education channels broadcasting via Thaicom satellite. Referred to the way of teaching and learning of Setsatian students as mentioned above, teachers will conduct classes at a regular time and record it as a clip for students to watch it online at home. Therefore, the Setsatiian students will have the opportunity to study like everyone else during COVID-19 and can repeat and review the lessons whenever they want it.
- The Company donated money to support the prevention of COVID-19 in Lao PDR through Lao Telecom Company, a joint venture company with the government of Lao PDR.
- The Company joint NAVA partners to provide free additional data to help marine operators to connect and communicate between the crews and their family, and to support the efficiency and continuity of operations on board.
- Thaicom executives shared experience of the COVID-19 response with other regional satellite
 operators in the Seminar organized by Asia Pacific Satellite Communications Council (APSCC) via
 VDO conference. The topics included the impact on the satellite operators, creating new business
 opportunities during COVID-19, the preparation of the New Normal as a guideline and case study
 together.

IV. Business rehabilitation planning after the epidemic of COVID-19

- The Company continues to operate its business by reviewing both short-term and long-term plans. It is one of the topics of corporate risk assessment process for the future.
- Improve on how WFH to be more efficient. During that time The Company
 adjusted the number of employees who will come to the office and who will WFH
 to 50:50 from July 2020 onwards. Each department has to devide WFH / Office
 employees alternately.
- 3. Take lessons from the crisis to create opportunities for future response. For example, there is an idea to drive the development of systems for distance education via satellite to have more efficient functions. Due to the COVID-19 crisis, students had experienced with lack of class, the satellite education channels, "DLTV" can help them to continue studying under the curriculum of the Ministry of Education even in crises. During the Lock-down period, over two million students studied from DLTV channels.
- 4. The Company has an opportunity to help support equipment for teaching and learning of Setsatian School for the Deaf under the Royal Patronage. A recording was delivered as an online teaching clip which teachers use sign language to teach these students. It could be used as a model for providing opportunities to other disabled groups in times of crisis.
- 5. Provide opportunities for innovation or service for people to stay connect with various systems and technologies, either online or via satellite widespread. Because access to information during a crisis, such as COVID-19, is very import ant for everyone.
- 6. Adjust the way of working in New Normal and with Social Distancing. The Company still uses Measures on social distancing and wearing masks in the offices. For outsiders who come to the offices, the Company requires employee who invites them to request for a permission in advance. In addition, temperature measurement is needed for everyone entering the office by using the thermal camera technology "Thermal Scan WiFi Camera" to measure Body Temperature for accuracy and speed.
- 7. The Company has adopted various technologies to facilitate employees to work anytime and anywhere, and always improve efficiency in use such as VDO Conference (ZOOM, Microsoft Team) to accommodate changes and crises that may occur in the future.





GRI CONTENT INDEX

Note: Our GRI Content Index below includes references to THAICOM's 2020 Annual Report and 2020 Sustainability Report

GRI Disclosure	Annual Report/ Website (TH =Thai, EN = English)	Sustainability Report (TH =Thai, EN = English)	Omission/Note
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1. Organizational profile			
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102-2 Activities, brands, products, and services	Part 1: pp 12-24 (TH)/ 9-20 (EN)		
102-3 Location of headquarters	Back cover; Part 1: p 6 (TH)/ 5 (EN)		
102-4 Location of operations	Part 1: pp 6-10 (TH)/ 5-8 (EN)		
102-5 Ownership and legal form	Part 1: p 26-28 (TH)/ 22-23 (EN)		
102-6 Markets served	Part 1: pp 12-24 (TH)/ 9-20 (EN)		
102-7 Scale of the organization	Part 1: pp 6-11, 52-53 (TH)/ 5-9, 45-46 (EN)	p.45 (TH)	
102-8 Information on employees and other workers		p 45 (TH)	
2. Strategy			
102-14 Statement from senior decision-maker	pp.2 (TH/EN); Attachment 5: pp 1-9 (TH/EN)	pp 1-2 (TH)	
102-15 Key impacts, risks, and opportunities	Part 1: pp 32-37 (TH)/ 28-32 (EN)	pp 12-17 (TH)	
3. Ethics and integrity			
102-16 Values, principles, standards, and norms of behavior	Part 1: pp 1-4 (TH)/ 1-3 (EN)	p 5 (TH)	
102-17 Mechanisms for advice and concerns about ethics	Part 2: pp 81-84 (TH), 76-79 (EN); Attachment		
	5: pp 1-3 (TH)/ 1-3 (EN)		
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102-18 Governance structure	Part 2: pp 23-26, 24-47 (TH)/ 23-25, 24-45 (EN)		
102-19 Delegating authority	Part 2: pp 24-47 (TH)/ 24-45 (EN)		
102-20 Executive-level responsibility for economic, environmental, and social topics	Part 2: pp 43-45 (TH)/ 41-43 (EN)		
102-22 Composition of the highest governance body and its committees	Part 2: pp 24-47 (TH)/ 24-45 (EN)		
102-23 Chair of the highest governance body	Part 2: pp 24-30 (TH)/ 24-29 (EN)		
102-24 Nominating and selecting the highest governance body	Part 2: p 29 (TH)/ 28-29 (EN)		
102-25 Conflicts of interest	Part 2: pp 71-88 (TH)/ 67-83 (EN)		
102-26 Role of highest governance body in setting purpose, values, and strategy	Part 2: pp 30-31 (TH)/ 30-31 (EN)		
102-27 Collective knowledge of highest governance body	Part 2: pp 61-62 (TH)/ 57-58 (EN)		
102-28 Evaluating the highest governance body's performance	Part 2: pp 62-66 (TH)/ 58-62 (EN)		



GRI Disclosure	Annual Report/ Website	Sustainability Report	Omission/Note
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102-30 Effectiveness of risk management processes	Part 2: pp 42-43, 81-84 (TH)/ 41-42, 76-79 (EN)		
102-31 Review of economic, environmental, and social topics	Part 2: p 67-68 (TH)/ 63-64 (EN)		
102-32 Highest governance body's role in sustainability reporting	Part 2: pp 44-45 (TH)/ 42-43 (EN)		
102-33 Communicating critical concerns	Part 2: pp 10-12, 75-77 (TH)/ 11-12, 70-72 (EN)		
102-34 Nature and total number of critical concerns	Part 2: pp 75-77 (TH)/ 70-72 (EN);		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Attachment 5: pp 1-3 (TH)/ pp 1-3 (EN)		
102-35 Remuneration policies	Part 2: pp 2-3 (TH)/ 3 (EN)		
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102-37 Stakeholders' involvement in remuneration	Part 2: p 69 (TH)/ 65 (EN)		
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6. Reporting practice			
102-45 Entities included in the consolidated financial statements	Financial Statements: pp 21-25 (TH)/ 18-20 (EN)		
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102-51 Date of most recent report	https://www.thaicom.net/th/เอกสารเผยแพร่/	https://www.thaicom.net/th/เอกสารเผยแพร่/	
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GRI 201: Economic Performance 2016			
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GRI 202: Market Presence 2016			
202-2 Proportion of senior management hired from the local community		p 45 (TH)	



	GRI Disclosure	Annual Report/ Website (TH =Thai, EN = English)	Sustainability Report (TH =Thai, EN = English)	Omission/Note
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205-1	Operations assessed for risks related to corruption	Part 2: pp 81-88 (TH)/ 76-83 (EN)		
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103-2	The management approach and its components		p 31 (TH)	
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103-2	The management approach and its components		p 40 (TH)	
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305-2	Energy indirect (Scope 2) GHG emissions		p 39 (TH)	
305-3	Other indirect (Scope 3) GHG emissions		p 39 (TH)	
305-5	Reduction of GHG emissions		рр. 38-39 (ТН)	
GRI 30	6: Waste 2020			
103-2	The management approach and its components		p 37 (TH)	
306-1	Waste generation and significant waste-related impacts		pp 37-38 (TH)	



	GRI Disclosure	Annual Report/ Website (TH =Thai, EN = English)	Sustainability Report (TH =Thai, EN = English)	Omission/Note
GRI 401	1: Employment 2016			
103-2	The management approach and its components		p 45 (TH)	
401-3	Parental leave		p 45 (TH)	
GRI 403	3: Occupational Health and Safety 2018			
103-2	The management approach and its components		p 48 (TH)	
403-1	Occupational health and safety management system		pp 48-49 (TH)	
403-5	Worker training on occupational health and safety		p 49 (TH)	
403-6	Promotion of worker health		p 50 (TH)	
403-9	Work-related injuries		p 50 (TH)	
GRI 404	4: Training and Education 2016			
103-2	The management approach and its components		p 46 (TH)	
404-1	Average hours of training per year per employee		p 46 (TH)	
404-2	Programs for upgrading employee skills and transition assistance programs		p 47 (TH)	
404-3	Percentage of employees receiving regular performance and career development reviews		pp 46-47 (TH)	
GRI 405	5: Diversity and Equal Opportunity 2016			
405-1	Diversity of governance bodies and employees		p 45 (TH)	
GRI 413	3: Local Communities			
103-2	The management approach and its components		p 59 (TH)	
413-1	Operations with local community engagement, impact assessments, and development programs		pp 56, 59-61 (TH)	
GRI 414	4: Supplier Social Assessment			
103-2	The management approach and its components		p 30 (TH)	
GRI 418	3: Customer Privacy 2016			
103-2	The management approach and its components		pp 29, 31 (TH)	



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