

**BRING
FUTURE
TODAY**

ESG



Sustainability Performance

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Message from the Chairman

Today, sustainable business is no longer a choice,
but a necessary action for a major organization
such as ourselves, that impacts the economy,
society and environment.

Amidst rapid changes in technology and the consumer market, we have had to face many challenges as well as opportunities, such as competition from new businesses that threaten revenue from traditional telecommunications services, increased concern over cybersecurity and data privacy, digital literacy and even accelerating climate change, which has made us more acutely aware of our energy usage and waste disposal. These matters have only grown in importance due to concerns and mandates of government, business partners, consumers and our investors. Today, sustainable business is no longer a choice, but a necessary action for a major organization

such as ourselves, that impacts the economy, society and environment.

AIS has outlined a clear path towards sustainable business to ensure effective action. Considering both risks and opportunities, we synthesized the "7 Strategies for Sustainable Development", accounting for the economy, society and environment. Our 7 strategies to business sustainability includes Digital Innovation, Data Privacy and Cyber Security, Human Resources Development, Social Inclusion, Cyber Wellness and Online Safety, Emissions and Waste. Major developments on these fronts in 2019 include:

- Prepared knowledge and network technology in support of 5G, testing 5G technology with partners to study its feasibility. We believe that development of telecommunications business ecosystem coupled with a strong network infrastructure will support economic growth, enhance the capabilities of all businesses and enhance the lives of Thai people.
- Initiated "Aunjai CYBER" to generate awareness on cyberthreat immunity with a focus on developing the Digital Intelligence Quotient of youths through online courses and digital content filtering tools. Teachers from over 378 schools took part in the initiative and it is being continually expanded. A project of pride for AIS as a digital life service provider, the initiative has contributed to the push to make the online world safer for Thai youths.

- For the environment, we devoted great importance to managing and disposing electronic equipment to allow for recycling and reuse as well as expanded our cooperation with partner networks taking on electronic waste and appropriately carrying out disposal. AIS also joined "Thailand Responsible Business Network" (TRBN), a private sector initiative to drive Thailand toward its Sustainable Development Goals by conducting business with care towards the economy, society and the environment.

AIS is devoted and determined to conducting its business with sustainability in all dimensions, which has led to it being chosen for listing on both domestic and international sustainability indexes such as in both the Dow Jones' World Index and Emerging Market Index for 2019 in the telecommunications industry category, the FTSE 4 Good Emerging Index, the SET Thailand Investment Index and on ESG100 as a registered company showing excellence in environmental, social and governance work for a fifth year as decided by Thaipat Institute.

AIS promises to continue to work toward business, social and environmental value in equal measure and in accordance with Good Governance and to support the United Nations Sustainable Development Goals to provide a foundation from which the nation can grow and all of Thai society can benefit, towards shared sustainable growth.

Mr. Kan Trakulhoon
Chairman of the Board of Directors



Business Overview

AIS has operated as a telecommunications service provider for 29 years, starting in 1990 as a concessionaire endowed with the ability to utilize state frequencies under the 25-year Built-Transfer-Operate (BTO) agreement. In 2010, the National Broadcast and Telecommunications Commission (NBTC) was established and began permitting frequency licenses in 2012, marking a major turning point for the telecommunications industry in Thailand. The licensing scheme conforms to the global telecommunication regulation and supports fair competition as well as the development of new technologies such as 3G and 4G that better served the needs of consumers.

AIS remains committed to its vision of being “To become the most-admired Digital Life Service Provider in Thailand” and is looking to enhance daily living via digital technologies through the following missions:

- 1. Deliver superior products and services to enrich people’s daily lives and to improve enterprise capabilities and efficiency.**
- 2. Enhance customer intimacy through the best customer experience.**
- 3. Drive intrapreneurship and employees’ professionalism, and promote a positive, lively and agile work culture.**
- 4. Build win-win growth to all stakeholders.**

AIS, the Digital Life Service Provider

Today, we are a "Digital Life Service Provider" operating three core businesses, namely

1. Mobile Phones Business



4G/3G/2G mobile network service



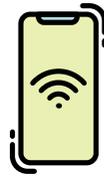
Prepaid and postpaid service



Mobile phone sales



Roaming and international calls



Mobile Phones Business



Fixed Broadband Business



2. Fixed Broadband Business

Started in April 2018, the service provides high-speed home internet utilizing FTTx fiber optics as well as VDO platform.



Digital Service Business

3. Digital Service Business

Building on mobile phone and high-speed internet services, digital services are targeted to be a new and value added revenue source in the medium and long term in anticipation of a change in consumer behaviors and technology.



Video Platform



Enterprise Cloud



Mobile Money



Internet of Things



Other platforms

In 2019, AIS's total assets were valued at Baht 289,669 million with a market capitalization of Baht 633,287 million, ranked th on the Stock Exchange of Thailand.

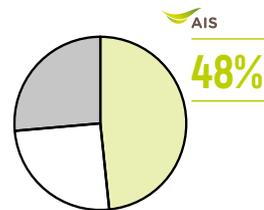
AIS remained the largest mobile operator in Thailand

Fixed broadband revenue in 2019, therefore, grew by 29% Year on Year

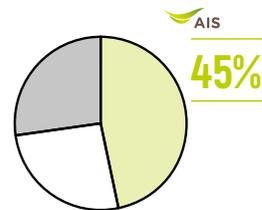
Leading the Mobile Market



Revenue Market Share in 2019



Subscriber Market Share in 2019



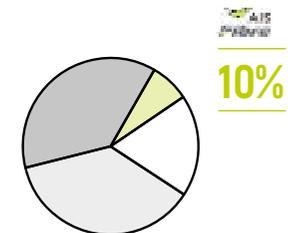
*Other operators are DTAC and True Move**

At the end of 2019, AIS remained the largest mobile operator in Thailand, with a revenue market share of 48%, and a total of 42 million subscribers nationwide. The mobile phone services revenue still accounting for more than 71% of core service revenue. In the past year, revenue in this area continued to grow by 4.2% YoY. With the mobile spectrum currently available to AIS, we are able to provide quality network services, including 4G, 3G and 2G technology, to over 98% of the population. Over the past year, AIS began preparing to enter the 5G era by carrying out research, and development of 5G technologies with its allies and partners, testing its technology network, technical capability, processes and service and utilization across different industries.

Growing in the Fixed Broadband Market



Subscriber Market Share in 2019



*Other operators are DTAC and True Move**

AIS started its fixed broadband business under the "AIS Fibre" brand, with the goal of creating a new source of revenue by leveraging the already established fibre network and the subscriber base from the Company's mobile business. Currently, AIS Fibre is available in 57 cities, covering 7 million households. AIS Fibre has penetrated the market using its strength in providing FTTH technology to connect households to the internet and is ready to support existing ADSL users wishing to upgrade to higher quality technology and the superior speed of up to 1 Gbps. Fixed broadband revenue in 2019, therefore, grew by 29% YoY, accounting for 3.7% of core service revenue. Currently, the total number of subscribers is 1,037,600, accounting for more than 10% of the fixed broadband subscriber market share.



Building on Core Businesses with Digital Services



The third core business of AIS is Digital Services, which involves the development of services using digital technology in a variety of formats, including networks, service platforms and solutions, in order to create digital services for both our corporate and general customers. This is achieved via cooperation with our partners and the development of an integrated business ecosystem in which we grow and succeed together. AIS is currently focused on 5 main areas of business. These are VDO Platform, Business Cloud, Mobile Money, Internet of Things (IoT), and other platform services.

Our digital services are an important propeller enabling AIS to access new sources of revenue in the future in addition to current mobile internet charges. It also allows AIS to be an integrated player via the convergence of products and services from our three core businesses

Operating Under Licenses Regulated by the NBTC.

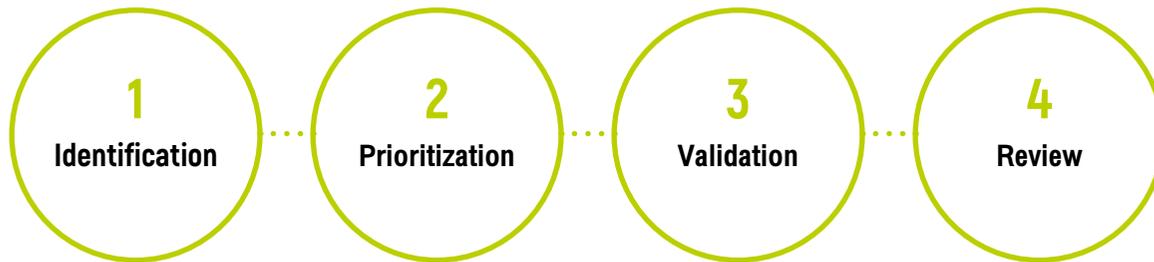


The majority of AIS's businesses, particularly the mobile phone and fixed broadband businesses, operate under the regulation of the National Broadcast and Telecom Commission (NBTC), which is the regulatory authority formed in accordance with the Frequency Allocation Act 2010. AIS, through a subsidiary, was granted a telecommunications business license, as well as 2100, 1800 and 900MHz spectrum licenses. Moreover, AIS is partnering with TOT to utilize TOT's 2100MHz spectrum. This resulted in AIS having a total of 2x60MHz bandwidth for operations at the end of 2018. AIS is mandated to pay the license fee, Universal Service Obligation (USO) fees, and numbering fees to the NBTC amounting to around 4% of service revenue per year.

(GRI 102-45, GRI 102-46, GRI 102-47)

Material Topics for Long-Term Sustainability

Process for Defining Material Topics



1. Identification



AIS reviewed and compared domestic and international material topics it identified in 2018, such as the Dow Jones Sustainability Indices (DJSI), and added topics pertinent to the telecommunications industry to a list presented to the Sustainability Development Committee and top managers for their consideration and adjustment of strategies for better coordination with operational plans.

2. Prioritization



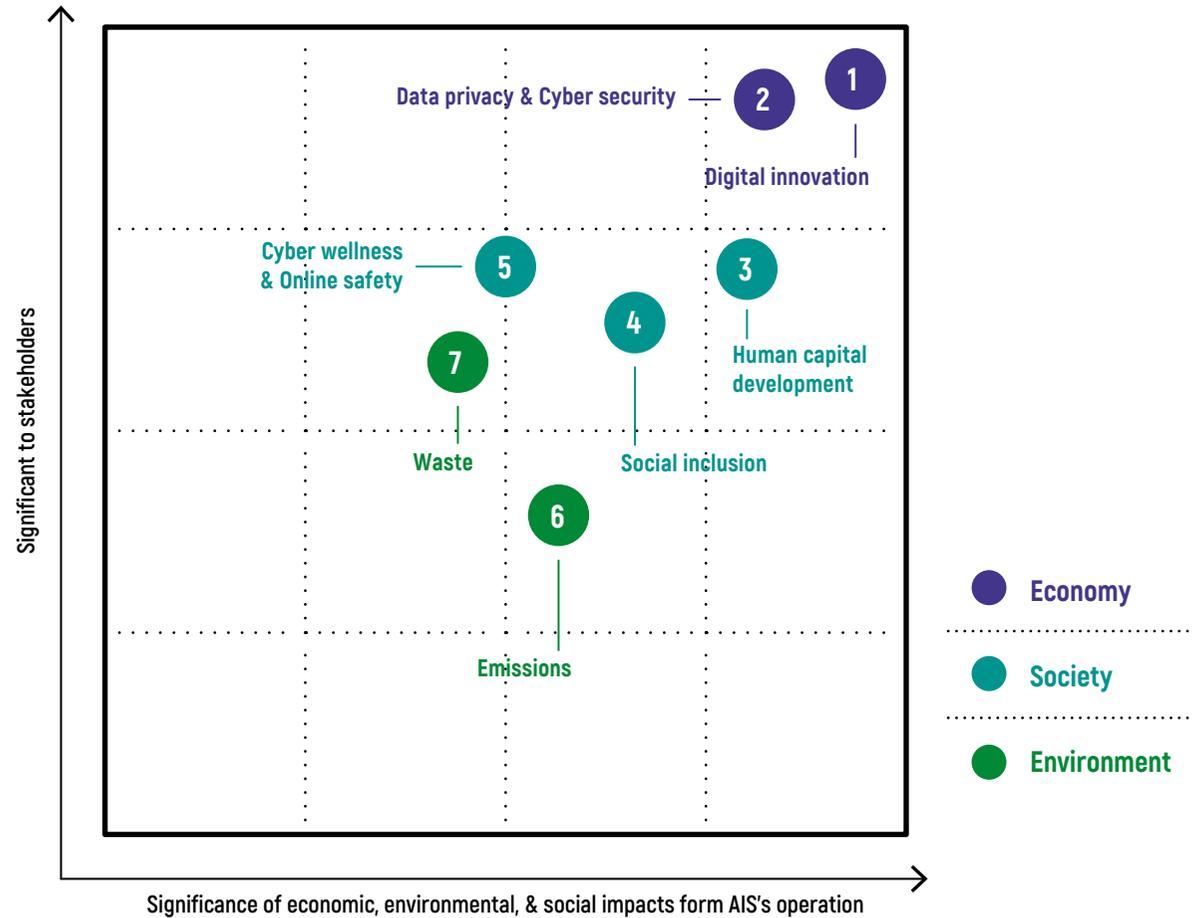
AIS maintains processes for defining material topics of sustainability internally and externally:

Internal perspective

Organize meetings with executives and top management to collect opinions and receive guidance on short and long term material topics at AIS while also setting strategies, objectives and operational plans in linen with material topics to sustainability.

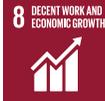
External perspective

Collect views from stakeholders; customers, community agencies, partners and investors, via discussions and by phone to uncover prioritized topics and expectations for AIS as well as to set operational guidelines for effectively responding to stakeholders.





	ASPIRATION	CHALLENGE	OPPORTUNITY	SCOPE AND BOUNDARY		CONTRIBUTION to UN SDGs
				Internal	External	
Economic Dimension						
Digital Innovation	Creating products and services through digital innovation that elevate life in Thailand and support the business sector	<ul style="list-style-type: none"> • Responding to the Thailand 4.0 policy • Survival in the Digital Era • Competitiveness 	<ul style="list-style-type: none"> • New revenue sources • New ways to add value 	Policies and Strategies for Promoting Innovation	<ul style="list-style-type: none"> • Collaboration with state agencies and educational institutions • AIS theStartUp 	
Data Privacy and Cyber Security	Develop data privacy and cyber security systems	<ul style="list-style-type: none"> • Compliance with GDPR, the Personal Data Privacy Act and Cyber Security Act. • Customers confidence • Detriment to company reputation • Loss of business contracts 	<ul style="list-style-type: none"> • Revenue growth from consumer confidence • New revenue sources e.g. cyber security systems 	<ul style="list-style-type: none"> • Policies and strategies for cyber security • Customer data privacy policies • Customer data management systems 	<ul style="list-style-type: none"> • Retailers • Customers 	

	ASPIRATION	CHALLENGE	OPPORTUNITY	SCOPE AND BOUNDARY		CONTRIBUTION to UN SDGs
				Internal	External	
Social Dimension						
Human Capital Development	Drive AIS' human capital to pursue new strategic growth area focusing on digital business	<ul style="list-style-type: none"> Lack of employees with new abilities needed to foster growth 	<ul style="list-style-type: none"> Enhancement of employee abilities and capabilities New ability talent attraction 	<ul style="list-style-type: none"> Human resource management policies AIS Academy AIS wellness program Personnel development strategies and programs 	<ul style="list-style-type: none"> Partners 	   
Social Inclusion	Elevate life in communities and reduce social inequality through basic infrastructure and digital solutions	<ul style="list-style-type: none"> Responding to Thailand 4.0 policy Disputes with communities Rental contract extensions 	<ul style="list-style-type: none"> Safeguard against customer losses to competitors and indirect strengthening of bonds with customers Closer ties and insights into customers provide opportunities to present more responsive products and services 	<ul style="list-style-type: none"> Innovations for enhanced life quality, present and future products and services Network coverage 	<ul style="list-style-type: none"> Communities and society Business partners 	  
Cyberwellness & online safety	Be a brand that promotes appropriate and safe use of the internet and social media	<ul style="list-style-type: none"> Detriment to company reputation 	<ul style="list-style-type: none"> Leadership in cyberwellness and online safety Customer relations enhancement 	<ul style="list-style-type: none"> Develop new cyberwellness and online safety products and services Online safety campaign Promotion and advertising 	<ul style="list-style-type: none"> Customers Communities and society 	



	ASPIRATION	CHALLENGE	OPPORTUNITY	SCOPE AND BOUNDARY		CONTRIBUTION to UN SDGs
				Internal	External	
Environmental Dimension						
Emissions	Reduce carbon emissions through efficient business operations and promotion of renewable energy	<ul style="list-style-type: none"> • Compliance with the COP21 Paris Agreement and Thailand's Nationally Determined Contribution • Future GHG taxation 	<ul style="list-style-type: none"> • New revenue sources from Cloud products and services that reduce GHG emissions • New revenue sources from IOT e.g. climate change tracking systems 	<ul style="list-style-type: none"> • Environmental policies and environmental management measures • Development of products and services that reduce paper usage 	-	
Waste	Reduce and recycle waste from operations, promote proper disposal of electronic waste by the Thai people	<ul style="list-style-type: none"> • Compliance with Electronic Product and Equipment Disposal Act • Detriment to company reputation 	-	<ul style="list-style-type: none"> • Environmental policies and environmental management measures 	<ul style="list-style-type: none"> • Customers • Business partners • Communities and society 	



3. Validation



A report of material topics is submitted to executives of the Sustainability Development Committee chaired by the Chief Executive Officer for approval and to the Sustainability Development Committee and Board of Director as well as included in the Sustainable Business Report and online ^(GRI 102-32)

4. Review

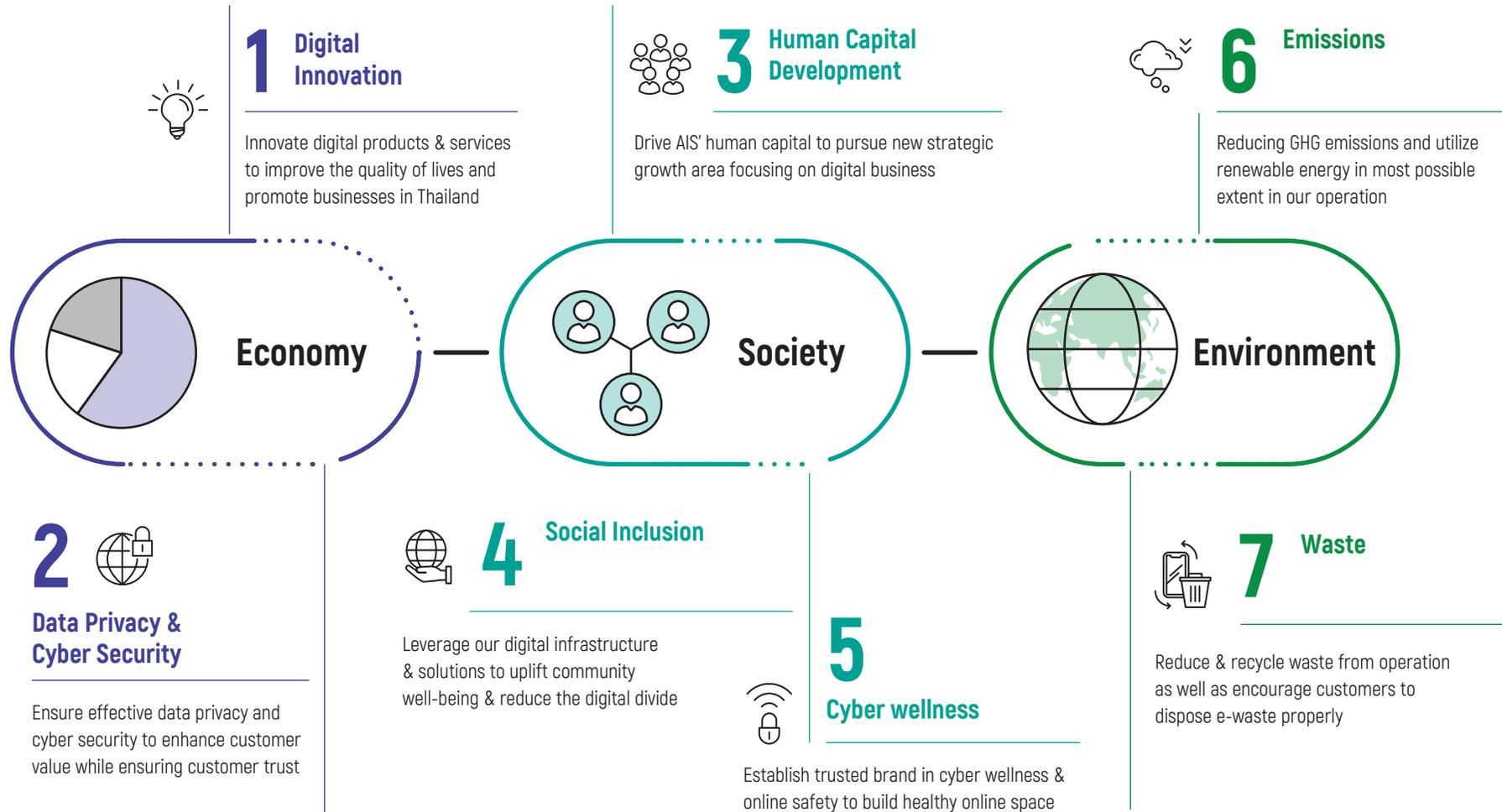


AIS has prepared a review process for once this report has been publicized to stakeholders so that feedback and recommendations for further sustainability development as well as future reports may be collected.

Stakeholder Engagement

STAKEHOLDER GROUP	ENGAGEMENT CHANNEL	FREQUENCY	STAKEHOLDER EXPECTATION
Communities and Societies	• Community relations agencies	• Daily	<ul style="list-style-type: none"> • For AIS to enhance community life quality with technology • For AIS to have a systematic approach to dealing with electronic waste
	• Suggestions Boxes	• Daily	
Customers	• Partner Satisfaction Surveys	• Once Annually	<ul style="list-style-type: none"> • AIS will expand service to people at all levels • For greater connection between AIS's business and social matters e.g. Education
	• Partner relations personnel	• Daily	
	• Sales applications and websites	• Daily	
	• Annual partners meeting	• 1-2 Times Annually	
	• Interviews	• Once Annually	
Partners	• Customer Satisfaction Surveys	• Daily	<ul style="list-style-type: none"> • Enhanced product and service quality e.g. Wider network coverage • Personal data security
	• Customer complaint and suggestion channels such as AIS Call Center	• Daily	
Shareholders and Investors	• Shareholder meetings	• Once Annually	<ul style="list-style-type: none"> • Sustainable business growth • Consistent dividend payment • Good governance • Equal access to information • Transparent and trustworthy operation
	• Operational returns announcement events e.g. analyst briefings, domestic and international roadshows, SET opportunity day	• 2-4 Times Annually	

The 7 Strategies for Sustainable Development





Target



Economy



1. Digital Innovation

Innovate digital products & services to improve the quality of lives and promote businesses in Thailand

Target 2022

- Collaborate with over 1,000 partners on the AIS Partner Platform to launch products and services to market



2. Data Privacy & Cyber Security

Ensure effective data privacy and cyber security to enhance customer value while ensuring customer trust

Target 2022

- Operate in adherence to applicable laws and regulations including the Cyber Security Act and Personal Data Protection Act
- Enhance cyber security process, technology and staff readiness for the protection of infrastructure, systems and new services
- Develop and improve technology, cyber security and personal data privacy policies and standards, including revamping CSL directions for synchronicity with AIS



3. Human Capital Development

Drive AIS' human capital to pursue new strategic growth area focusing on digital business

Target 2022

- Acquire enough staff with new abilities in digital technology to support business growth
- 80% of talent pool is retained
- 80% of Talent on Critical Role staff undergo New Ability training in digital technology
- Employee Engagement Survey participation rate above 75% and Employee Engagement Index above 4.00



Environment



4. Social Inclusion

Leverage our digital infrastructure & solutions to uplift community well-being & reduce the digital divide

Target 2022

- Improve the wellbeing of 400,000 people through our digital platform and collaboration



5. Cyber wellness

Establish trusted brand in cyber wellness & online safety to build healthy online space

Target 2022

- Become Thailand's number one telecommunications brand, trusted for cyber wellness and online safety
- Promote cyber wellness and online safety through Digital Intelligence Quotient courses at 2,000 schools and protect 6.4 million Thai users from cyber threats



6. Emissions

Reducing GHG emissions and utilize renewable energy in most possible extent in our operation

Target 2023

- Reduce GHG emissions intensity as calculated from the ratio of direct (GHG scope 1) and indirect (GHG scope 2) emissions to data by 90% compared to the baseline in 2015
- Increase renewable energy usage to 5% of total energy consumption compared to 0.06% in 2018



7. Waste

Reduce & recycle waste from operation as well as encourage customers to dispose e-waste properly

Target 2022

- Collect a total 3 million pieces of E-waste such as mobile phones and accessories for entry into the recycling process
- Reduce the amount of refuse from e-waste recycling from 5% in 2018 to 3%



Sustainability Performance Economy



Digital Innovation

Innovate digital products & services to improve the quality of lives and promote businesses in Thailand

Target 2022



Collaborate with over 1,000 partners on the AIS Partner Platform to launch products and services to market.

Significant Improvements in 2019



1. Expanded AIS Playground to the regional level by working with Chiang Mai University to introduce "AIS Playground @ CMU Learning Space" to its campus.
2. Worked with King Mongkut's University of Technology Thonburi and the National Astronomical Research Institute of Thailand on the AI Monitor Deforest study using satellite imagery to inspect forest encroachment.
3. Collaborated with Prince of Songkla University to move forward the Thai southern region's first 5G test by trialing the "Smart City, Smart Living" concept, testing Thailand's first Smart City model.
4. Collaborated with Chulalongkorn University's Faculty of Engineering under sponsorship by the National Broadcasting and Telecommunications Commission to launch 5G Garage Innovation LAB, allowing innovators to work on Thailand's first live 5G network.

Global mobile operators, including AIS, are now facing the structural change of the market and competitors threatening its traditional methods for gaining



(GRI 103-1)

Challenges & Opportunities



Digital technology has come to be a catalyst for the rapid change of the world in recent times. New businesses have sprung from using technology to develop services that better respond to the increasingly complex demands of consumers in their daily lives and from other business. Widespread enterprises now include Over-The-Top (OTT) businesses, which create platforms or applications used over the internet, other types of applications and digital platforms and the sharing economy. Challenges also result from global companies carrying out research and technological development and testing high-speed internet facilitated by satellites. All of the aforementioned are challenges for telecommunications providers the world over, including AIS, which is now facing the structural change of the market and

competitors threatening its traditional methods for gaining revenue. At the same time, however, these matters pose opportunities for AIS to develop digital technologies that can drive its growth and competitiveness while generating value for customers and society. This requires that AIS adapt its business approach to stay in step with digital age consumers, take part in developing the economy and society, reduce its impact on the environment to a minimum and offer products, services and solutions that extend to a variety of industries such as solutions for Smart Cities, solutions for transport and logistics, solutions for public health and solutions for real estate. The Thai government's Thailand 4.0 policy is assisting in these efforts by fostering an ecosystem for ICT and growth in accommodation of lifestyles in the digital era.

(GRI 103-2)

Management Approach



AIS is resolute in its mission to create innovations that deliver products and services that better the daily lives of the Thai people and enhance their businesses. AIS seeks to become a leader in innovations for sustainability by enhancing its adaptability and formed an Innovation Development Department tasked with supporting the company's innovation leadership both internally and through collaboration with partners. The department also supports doing business in the digital era and growing new sources of revenue that coincide with changing trends both current and to come in the future in all markets relevant to AIS and beyond. The department produces a report for the Chief Information Officer (CIO) at least once a month. The CIO set strategies and policies as well as manage information technology in the short and long term to better the organization's capabilities and competitiveness in a digital world.

In 2019, AIS enhanced the **AIS Open Innovation Framework** so that it may serve as a guideline for efficiently supporting the development of innovations based both in the company's own internal knowledge and knowledge from outside the organization towards its business goals. The framework consists of the following:

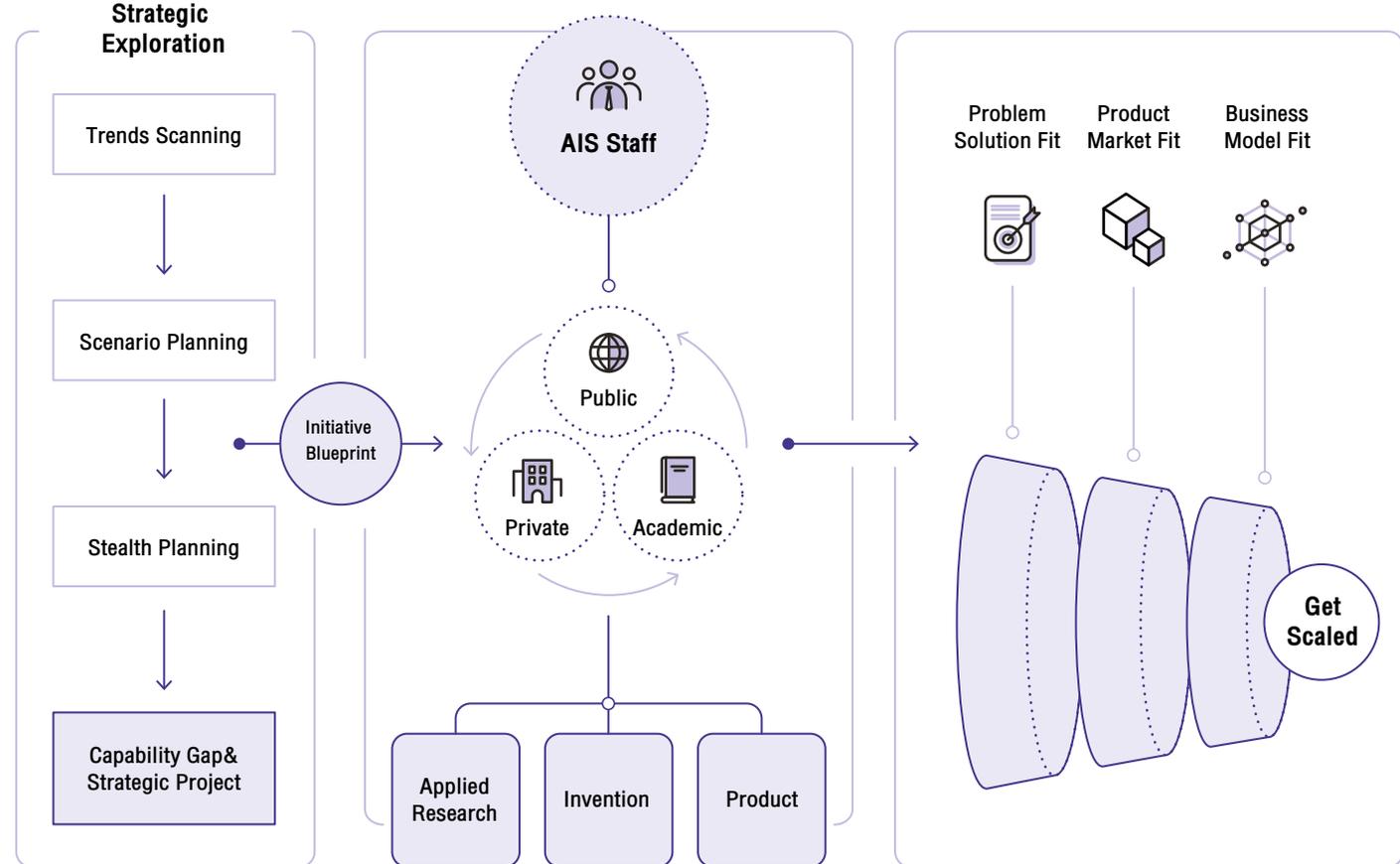
(GRI 103-3)

AIS Open Innovation Framework



AIS set strategic projects and analyzed capability gaps to respond to the demands of the digital era and foster both medium and long term growth. Based on an analysis of the current situation, market tendencies and plans considerate of global circumstances, projects for the short term and a framework for long term innovation were created using the aforementioned strategic plans as a guideline for selecting and building upon new business ideas to be carried out through internal potential and collaboration with partners in the public, private and academic sectors. AIS divided management and support for each business idea into three phases according to the phases of a startup to appropriately allocate resources and support for development and to ensure flexibility and timeliness. The three are Problem Solution Fit, as in ideas still in need of problem solving, Product Market Fit, as in products and services that need to be market tested and refined, and Business Model Fit, as in ideas ready to grow and be introduced to a wider market.

AIS OPEN INNOVATION FRAMEWORK



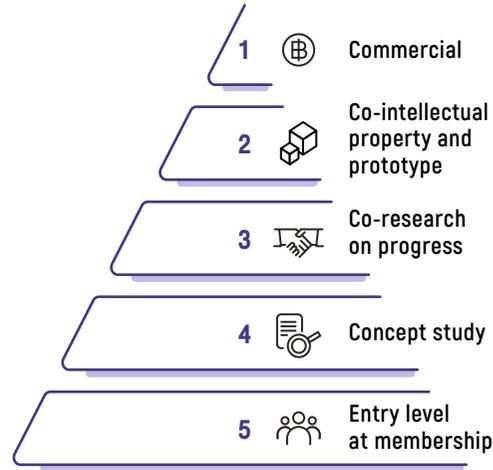
Management of Innovation Development Units

The Innovation Development Department's approach is "Design thinking, lean start-up and agile". It is a small team with a flat team structure and maintains an environment of challenge for all members, compelling them to innovate rapidly. AIS also has a new generation of staff knowledgeable in digital technologies such as Blockchain and Big Data Analytics, which assess future trends and develop new ideas. These processes allow AIS to build on its innovations both internally and externally using the capacities and knowledge of its departments as well as effectively distribute its resources.

Building and Managing Relations with Partners

AIS devotes importance to managing relations with its partners. It observes the following 5 Levels of Engagement Model

The engagement model allows AIS to stratify its support and cooperation from allowing participation in open innovation projects to exchanging knowledge and providing marketing assistance, helping AIS effectively manage its various levels of partnership.



From the year 2017 onward, AIS has allotted investment funding to research and development in support of medium and long term growth of the ICT industry ecosystem. In 2019, AIS invested over 159 million Baht into research and development of innovations, 1 percent of its total profits. The emphasis is on IoT, smart industries and microservice development among others.

2019 Progress



AIS has continued to develop innovations both internally and through collaboration with partners. Significant progress made in 2019 includes:

Supporting Internal Innovation

Confident its employees have the capacity for growth in the digital age amidst a rapidly changing environment, AIS continually supported staff development and bestowed new knowledge upon them through projects and training including:

1. AIS InnoJUMP: Encouraging staff to have an innovative mindset and driving innovation among employees by providing them opportunities to experiment with and create new business concepts, AIS InnoJump is a range of courses and training programs that provide knowledge and inspiration as well as speed up the selection process for innovations. Employees are given the chance to present their projects and ideas to top executives directly with chosen efforts receiving research and development funding up until introduction to market. Well received by staff, AIS in 2019 organized "INNO JUMP Competition 2019" and received over 120 proposals vying for a total 310,000 Baht in reward money. Finalist projects accessed research and development funding for realization and included Health Translate, a solution for allowing easier access to entertainment for the hearing impaired and Thailand Halal Travel, a solution for travelers adhering to the Islamic lifestyle.

2. Introducing A-zone in 2019: An open working space measuring 820 cubic meters on the 27th floor of AIS Tower 1, A-zone was provided to staff to encourage innovation and the exchange of new business ideas and concepts. Designed to facilitate a flexible work environment, the space is equipped with practical technological tools including a Digital Personal Locker, Digital Board, Environmental Monitoring System and Smart Access System. External agencies and organizations can also gain access to A-zone for observational trips.

Collaboration with Partners to Drive Innovation

AIS is determined to grow alongside its partners and thus engages in collaborations with academic and state agencies to exchange knowledge and technology as well as jointly development solutions that go from the prototyping phase to market. With private sector partners, AIS created a Partner Platform to serve as an end-to-end hub for creating solutions and services, providing technology, tools and equipment and needed software to ensure synchronicity with industry and market trends both current and in the future. AIS also supports the innovations of startups, developers, students and all interested in the area, seeing them as potential business partners who can bring about market responsive solutions. In 2019, AIS engaged with partners in the following ways:

1. 5G Technology Tests AIS prepared complete foundational knowledge, from the working structure of the technology to the connection devices and equipment of 5G, working with educational institutions in every region and partners



in the business realm to develop and trial 5G technology, testing various use cases for 5G. Tests were as follows:

- **Central Region:** Displayed a 5G use case at AIS D.C. and worked with Chulalongkorn University's Faculty of Engineering to launch 5G AI/IoT Innovation Center, a space for developers to test 5G technology.
- **Eastern Region:** Brought together the Ministry of Digital Economy and Society and Kasetsart University Sriracha Campus to setup Testbed 5G-IoT within the Eastern Economic Corridor (EEC), supporting growth of the nation's digital economy.
- **Southern Region:** Worked with the Digital Research and Innovation Institute of Prince of Songkla University, Hat Yai to experiment on and test 5G technology under the theme "Smart City, Smart Living", modelling a smart city.



- **Northeast Region:** Installed the 5G Live Network at the AIS Contact Center Development & Training Arena in Nakhon Ratchasima so that northeast residents would be able to join in studying a prototype 5G technology use case.
- **Northern Region:** Tested the use case of 5G connected drones, demonstrating cross-regional control of drones between Chiang Mai and Bangkok.

AIS also organized workshops to enhance the technical expertise of a total 80 teachers and students from universities nationwide to further prepare all segments of the country.



2. AIS IoT Alliance Program (AIAP): Aimed at promoting knowledge and skills from a range of industries, public and private organizations, equipment manufacturers and software developers to bring about different IoT solutions able to address the needs of different industries and enhance the potential of the country, this program served as a hub for technological and information exchanges undertaken to develop products, services and solutions in satisfaction of the government's Thailand 4.0 policy. AIAP has over 1,630 members and organized over 24 workshops and training sessions in cooperation with partners to support NB-IoT services under the Smart City program and air quality measurement program that took place in more than 5,000 locations. AIS developed and introduced an array of IoT solutions in 2019 both for commercial purposes and for the benefit of all without regard for profit. They resulted in:

- **Winning Thailand IOT Services Provider of the Year** from the 2019 Frost & Sullivan Thailand Excellence Awards hosted by Frost & Sullivan. The company evaluates leading organizations in different industries in terms of their vision and drive to create innovations, how those innovations respond to demands and how they create real business value. The recognition was the result of AIS's expansion of its NB-IoT infrastructure and establishment of an IoT ecosystem, a network of collaboration that led to IoT technologies being applied to businesses, such as through the smart city solution and solutions for transport and logistics.

3. AIS Playground: AIS established a space to serve as a central incubator of innovation, providing basic infrastructure and technology to university students, developers and upstart entrepreneurs looking to test their prototypes. By connecting with AIS's Application Program Interfaces (API), users of the playground gain access to actual commercial services such as an SMS system, online payment, AIS privileges for customers as well as experts who can provide them with guidance and technical know-how.

- In 2019, some 133 groups tested their prototypes in the playground and received expert consultation. Over 94 of the groups connected their products and services with AIS APIs to support their introduction to the commercial market. AIS also carried out various workshops and training sessions at the AIS Playground to enhance the potential of creators and entrepreneurs, including the DevFes seminar and Code Craft course. Altogether, AIS organized over 7 workshops and training sessions with over 400 people participating.
- AIS Playground was expanded beyond AIS D.C. Bangkok to the regional level through cooperation with Chiang Mai University, which opened "AIS Playground @ CMU Learning Space" on its campus, allowing students, developers and startups of the northern region to test their innovations in collaboration with AIS and utilize its highspeed internet



networks; 5G, NEXT G, IoT, Fibre and AIS Super WiFi as well as its 5G technology, NB-IoT technology, Virtual Reality (VR) and API. The CMU location provided a place for practical tests as well as expert consultation to students and those with an interest in technology.

- AIS collaborated with Chulalongkorn University's Faculty of Architectural Design (International) to develop and hold IoT Garden, a digital botanical garden, at AIS D.C. The event presented how the Internet of Things (IoT) can tangibly benefit Thai society in an interesting format as to attract the public and aid in their understanding. Information collected through IoT equipment concerning weather,

moisture, PM 2.5 concentration and sonic frequencies from 12 districts in Bangkok was showcased as a digital botanical garden complete with changes in color, blossoms and a variety of natural sounds. For example, flowers changed to red tones to indicate the danger of high particulate matter concentration.

- AIS collaborated with Sripatum University to organize a boot camp aimed at providing opportunities for the institution's students to develop and create innovations in the realm of multimedia technology and digital content, applying their studies to real world projects.

4. Research and Development Collaborations with Academic Agencies and Educational Institutions



- **AI Monitor Deforest, Inspecting Forest Encroachment using Satellite Imagery:** AIS worked with King Mongkut's University of Technology Thonburi and the National Astronomical Research Center to develop a system for inspecting forest encroachment in Thailand using deep learning of satellite imagery for the purpose of monitoring and alerting against encroachment using technology. The project used a deep learning system to carry out data training aimed at distinguishing the colors of a spectrum depicting forested and non-forested areas using 500 satellite images from the United States' LandSat 8. After undergoing training, the AI is now able to indicate areas that once were forested by comparing current images and is able to pinpoint their latitude and longitude with a 90.5% accuracy rate.



Link NHK: <https://www3.nhk.or.jp/nhkworld/en/news/videos/20200128193624156/>

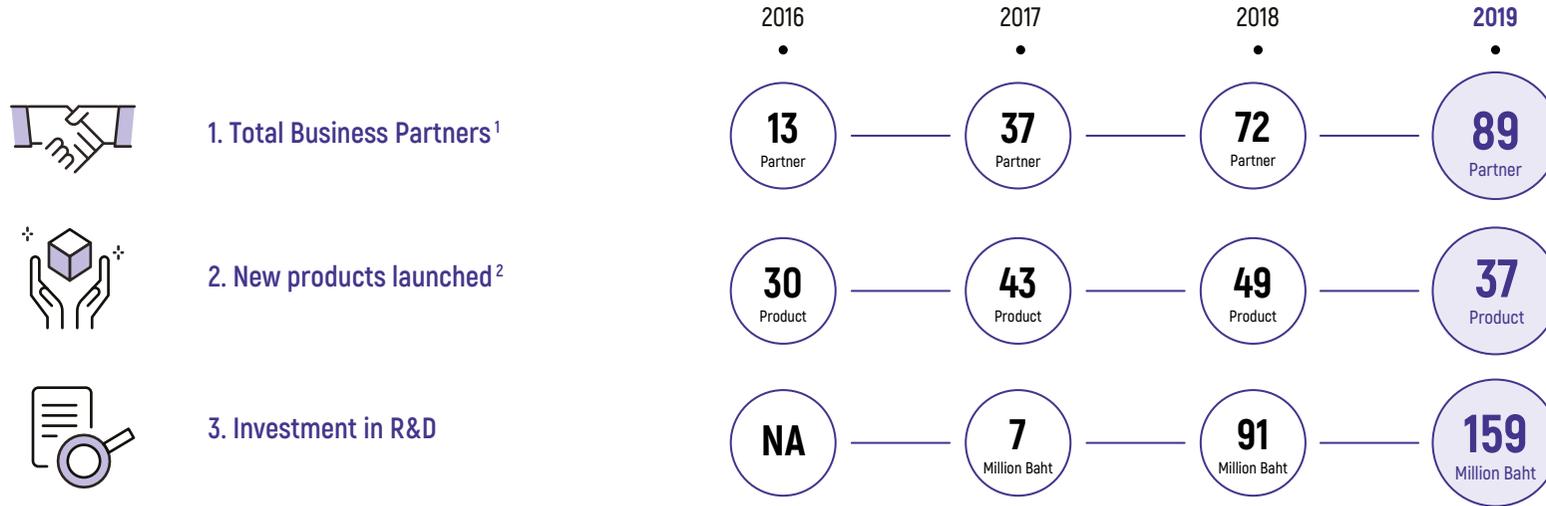
• **Traffic Management:** This innovative project used positioning data from smartphones present on roadways to assess traffic congestion in Bangkok, supplying data to an AI undergoing reinforcement learning to develop it into an assistive traffic light manager in the form of the Police Eyes application, recommending traffic light management for 500 junctions in Bangkok. Information on traffic density supplied to the AI was from positioning data from satellites working in tandem with smartphones. The project received the Asia Award in startup space based business at S-Booster Competition 2019 and was

chosen as one of four international finalists out of 300 teams from across Asia Oceania. It was also presented on Japan's NHK World Channel on 27 January 2020.

AIS has set a budget of 200 million Baht for research and development in 2020 with its aims being supporting developments for AIS and cooperation with the partners in its partner platform and improving the efficiency and capability of its internal systems.



Performance Table



¹ Partners on AIS partner platforms that launched a product or service to market

² New products and services launched include new products and services or those that received a functional improvement in the past year



Cyber Security and Customer Privacy

Ensure effective data privacy and cyber security to enhance customer value while ensuring customer trust

Target 2022



1. Operate in adherence to applicable laws and regulations including the Cyber Security Act and Personal Data Protection Act
2. Enhance cyber security process, technology and staff readiness for the protection of infrastructure, systems and new services
3. Develop and improve technology, cyber security and personal data privacy policies and standards, including revamping CS Loxinfo Plc. or CSL directions for synchronicity with AIS, both in terms of its technological standards and legal developments

Significant Improvements in 2019



- 1. Enhanced Personal Data Protection Personnel** through online courses and proficiency tests concerning the prioritization of data sensitivity required by all employees from permanent and contractors to outsourced vendors. Staff in the Personal Data Protection and Maintenance Department underwent training in the Personal Data Protection Act to further their understanding of the law in preparation for AIS to ensure its compliance.
- 2. Built upon Big Data/Data Analytics** by studying pilot projects on cyber security systems using Big Data and both Machine Learning (ML) and Artificial Intelligence (AI) Data Analytics systems in order to more promptly and accurately detect irregularities and crises as well as to enhance the capability of technology and data staff.
- 3. Appointed a Chief Information Officer: CIO** to upgrade and enhance communications technology efficiency and competitiveness.
- 4. Revamped Policy** to do with personal data protection for better compliance with developing laws and upgraded cyber security policy for improved clarity, completeness and coverage of business partners and external individuals as made necessary by digital era developments such as mobile offices

[GRI 103-1]

Challenges & Opportunities



Information technology is progressing at a rapid pace in the modern world with both personal and corporate communication methods changing. Informational transactions online have risen immensely and now take place across the globe. As a result, users are now at a higher risk of cybercrime and the matters of cyber security and personal data protection have become an important issue among administrative agencies worldwide, which have issued increasingly stringent laws and regulations in the interest of improved protection. In 2019, Thailand began enforcing two laws, the Cyber Security Act of 2019 and the Personal Data Protection Act of 2019. AIS, as a digital service provider, manages massive amounts of data, both from its operations and from its customers, and is compelled to work in adherence to laws to protect against the leakage of personal data as well as to reduce risks to its finances and reputation. Moreover, AIS sees an opportunity in creating and developing complete cyber security services, which would address its operational requirements and enhance its capability to service clients. Thus, beyond carrying out its own cyber security and personal data protection, AIS is seeking to build a body of knowledge on the two matters and relevant new technologies such as the National Blockchain Hybrid Cloud, IOT and financial and insurance mechanisms.

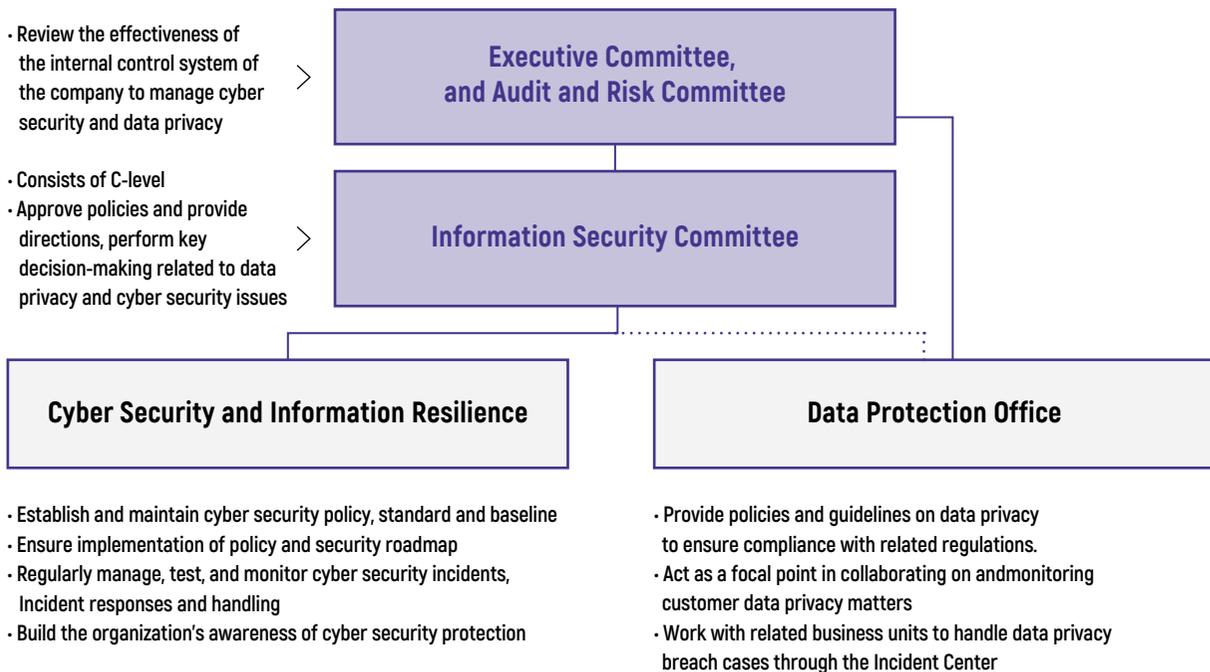
[GRI 103-2]

Management Approach



AIS is committed to ensuring transparency, privacy and the protection of all customer information that is captured, stored, accessed, and managed within its operating systems and procedures in the interest of maintaining customer trust.

Data privacy & Cyber security Management Structure





It is the duty of the Board of Directors to set the company's direction on data privacy and cyber security management, approve related policies and make key decisions, as well as provide the management team with council and advice for their effective performance. The Board of Directors receives a report on pertinent personal data privacy and cyber security issues from the Information Security Committee at least once a quarter.

In 2019, AIS elevated and honed its telecommunications competitiveness by appointing a Chief Information Officer: CIO tasked with safeguarding information systems and personal customer data; setting policies, controlling, operating and providing advice pertinent to both establish protections and to remedy issues. The appointment was to strengthen confidence in the company's management standards and support it as an effective business in the digital age. Cyber security staff and the Personal Data Protection Department provide an operation report to the CIO at least once a month.

(GRI 103-3)

Data Privacy Protection



1. AIS maintains a Data Protection Office that serves as the center for safeguarding and monitoring customer data and provides guidelines and policies for the organization to follow for adherence to relevant laws and regulations.

2. AIS upgraded its data privacy and Cookies policies to more completely obey the Personal Data Protection Act that came into effect in 2019, adding on to existing policies attuned to the General Data Protection Regulation: GDPR observed in the European Union.

3. AIS indicates its data privacy measures for users to inform them of its regulations and practices concerning personal data protection such as the purpose for its data collection and utilization.

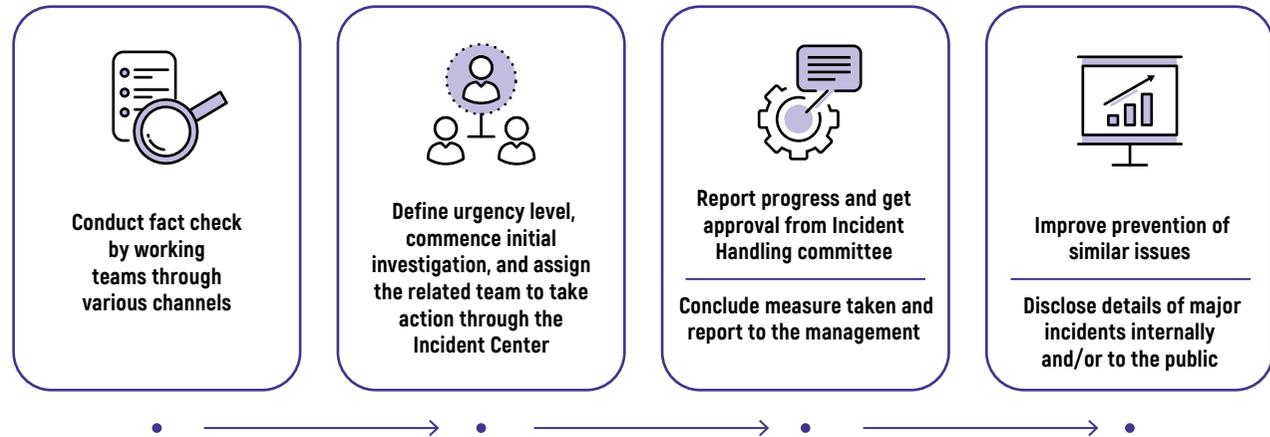
4. AIS promotes cyber security and privacy through the following methods and processes:

- Building awareness and understanding in customer data privacy among all company staff and incorporating the Privacy by Design and Privacy by Default principles into its services and products as necessary.
- Utilizing the Data Protection Impact Assessment: DPIA to identify and mitigate data privacy risks in new services.
 - Evaluate risks in daily operations to protect against leaks and implement measures to mitigate such risks.
 - Started implementing a Standard Contractual Clause: SCC both internally and with partners in need of access to customer data protecting against the forwarding or transmission of private customer data.
 - Started keeping a Record of Processing for private data both internally and with partners to confidently utilize, process and disclose private data and to allow for the tracking and risk assessment of private data processing.

- Limiting access to sensitive information and applying a range of data protection techniques covering storage, utilization and transmission to safeguard against private data leaks.
- AIS began setting specifications for the data flow process and communicates with relevant agencies to ensure compliance with said specifications.

5. AIS maintains an Incident Center that serves as a central office for responding to cyberthreats arising from leakages and other matters to do with private customer data. The center comprises offices including Data Protection, Cyber security and Information Resilience, Customer Complaints, Technical Support, Human Resources, Public Relations, Legal, Business Relations and Customer Services. Customers with issues or queries can notify the center by telephone at 08-000-9263 or by Email at complaint_center@ais.co.th The threat response process is as follows:

Incident Response Process



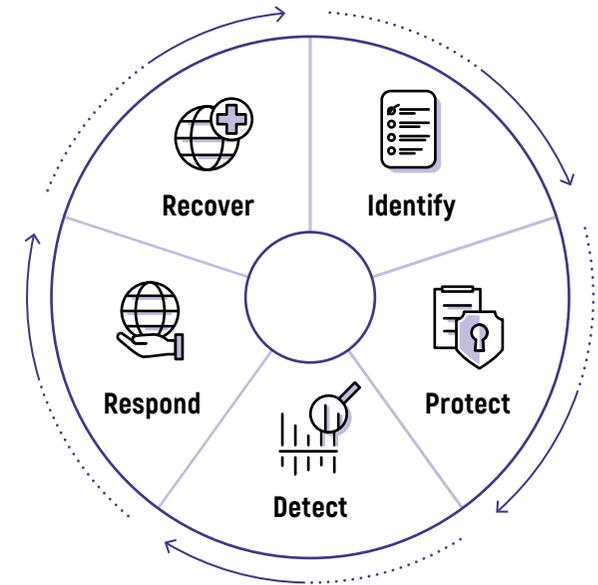
Cyber Security



- AIS has the infrastructure, systems and protocols to manage, test, and monitor cyber security carried out by its Cyber security and Information Resilience team, a dedicated team responsible for cyber security and building awareness of cyber security within the organization
- AIS policies and guidelines related to cyber security are developed and reviewed regularly in accordance with the best practices and related regulatory requirements.
- AIS is determined to protect its systems from cyberthreats through the application of the following procedures, upgrading systems and infrastructure in keeping with data privacy standards, performing security assessment tests and crucial security scans prior to the launching of systems and applications and providing security self-check tools to software developers.

- AIS maintains a 24×7 cyber security monitoring and incident response infrastructure with a centralized notification system that ensures timely response to incidents while also being able to impose locks on equipment in real-time through the Security Information and Event Management (SIEM) alert system.
- AIS utilizes **the Cyber Security Framework** by the US National Institute of Standards and Technology (NIST) as a guideline for designing its cyber security strategies and process, which includes the following steps, Identify, Protect, Detect, Respond, and Recover. AIS also plans to develop further systems and processes based on other relevant standards and protocols to enhance the efficacy of its cyber security and privacy protection.

NIST Cyber Security Framework

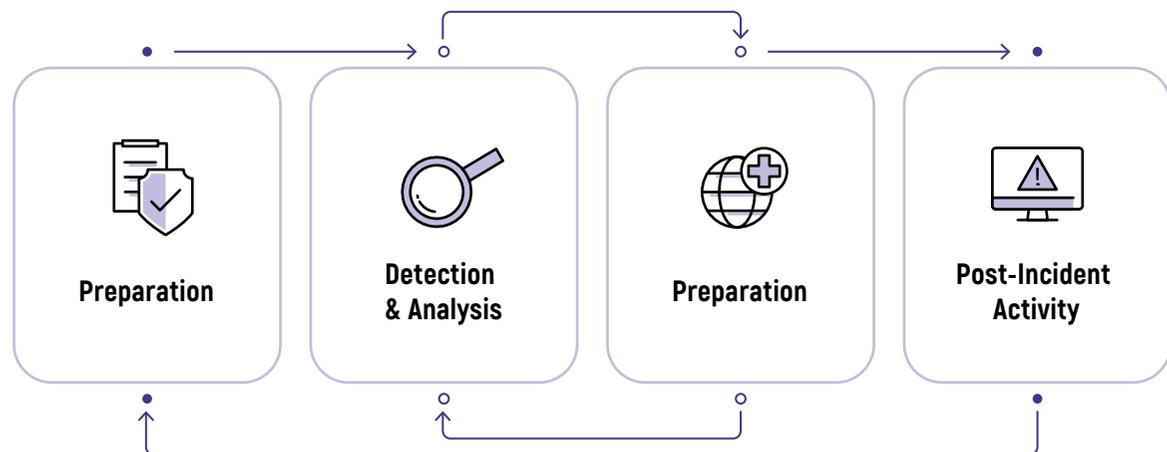


Source: National Institute of Standards and Technology

- For responding to cyberthreats and its escalation process, AIS applies the **Cyber Incident Response Framework** by the National Institute of Standards and Technology (NIST) to its daily operations. The framework involves the following steps for addressing incidents; Preparation, Detection & Analysis, Containment, Eradication & Recovery, and Post-Incident Activity. All internal cyber security complaints are directed through dedicated channels and treated according to their level of severity.

- For coordination with administrative agencies and key information infrastructure offices, AIS signed a Memorandum of Understanding to jointly study and establish the Thai Telecommunication Computer Emergency Response Team (TTC CERT), which focuses on coordinating, sharing information and managing cyberthreats once they take place in alignment with the Cyber Security Act.

NIST's Cyber Incident Response Framework



Source: Computer Security Incident Handling Guide by National Institute of Standards and Technology



AIS obtained the following certifications and standards, which underline its commitment to the data security of its services and customers:

- ISO27001 Information Security Management System (ISMS) since 2015
- CSA STAR (Cloud Security Alliance) Self-Assessment since 2016
- PCI DSS (Payment Card Industry Data Security Standard) since 2017



Further information on AIS company personal data protection, cyber security and other relevant policies at <http://sustainability.ais.co.th/en/sustainability-priorities/data-privacy-cyber-security>



2019 Progress



AIS in 2019, achieved its goal of elevating its cyber security and privacy capability. The outcomes of its work are as follows:

1. Compliance with laws and regulations

- Reviewed operation frameworks and policies to ensure compliance with relevant laws and regulations such as the Computer Crimes Act (No. 2) of 2017, Personal Data Protection Act of 2019 and the Cyber Security Act of 2019 as well as prepare the organization to respond to new laws and regulations.
- Engaged in a risk assessment based on the General Data Protection Regulation: GDPR observed in the European Union since 25 May 2018 and on the Personal Data Protection Act of 2019 in effect in Thailand since 27 May 2019.
- AIS worked alongside state agencies in support of drafting the Cyber Security Act while internally promoting an understanding of the role of a Critical Information Infrastructure (CII) organization according to the Cyber Security Act to its executives and managerial level staff involved in operational planning. All attended talks by domestic and international experts in the cyber security technology and legal fields.

- In accordance with the Cyber Security Act, AIS presented the names of all operational staff within its information infrastructure to its Information Security Committee.
- Supported cooperation between the state and private sector on cyber security and data privacy in the following ways:

- Cooperated with administrative agencies, state offices and internet and telecommunications services providers to establish the Thai Telecommunication Computer Emergency Response Team (TTC-CERT) to respond to cyberthreats against the telecommunications industry.
- Shared opinions with the National Broadcasting and Telecommunications Commission (NBTC) on the present state of the telecommunications industry in terms of cyber security and data privacy as well as participated in public referendums and the interpreting of draft laws with the intent to support cyber security and data privacy alongside evaluating the practical impacts and feasibility of such laws on business operations.

2. Training and Awareness

- For the enhancement of AIS cyber security and data privacy capabilities, relevant staff underwent over 22 different training courses and certificate programs encompassing Ethical Hacking and Penetration Testing, to allow them to test the security of systems by seeking out loopholes and weaknesses, Incident Management and Forensics, to allow them to handle and manage cyberthreats appropriately and promptly as well as to inspect for digital forensic evidence and Cyber security and Data Privacy.
- Awareness and understanding of cyber security and data privacy was promoted to all staff across the organization as is done annually. Promotion was done through online and offline mediums and included an online course, meetings between staff and various experts and over 25 emails to do with cyber security and data privacy such as the dangers of phishing, malware, password protection, Thai and EU data privacy and privacy classifications. Both company staff and outsourced employees underwent cyber security and data privacy aptitude tests and a tour of 20 departments working with data was held to provide each with an awareness of new laws and regulations. For board members and executives, AIS held a Crisis Communication Simulation demonstrating a data leakage to enhance awareness and understanding as well as their individual responsibilities as outlined for Critical Information Infrastructure organizations in the Cyber Security Act.

3. Technology and Operations Development

- Implemented the Data Classification and Handling Framework, which classifies data sensitivity, on departments handling customer data and operations or 50% of the company's departments within 2019, aiming for implementation to be across all departments within 2020.
- Enhanced cyberthreat response processes in line with the NIST Cyber Security Framework and tied them to the company's crisis level threat response plan, training high level executives and other relevant staff to respond in a simulated cyber security crisis. This year, AIS also created the Cyber Security Playbook, a handbook on handling cyber security crises that is now the guide for Crisis Communication and crisis drills.
- **Continually Enhanced Data Privacy Protection** In 2019, AIS enhanced its network security system both in in terms of protection and monitoring. New technologies were incorporated alongside system upgrades and procedural developments encompassing data storage, verification, alerts and data assessments to uncover possibilities for irregularity. Monitoring against Advanced Persistent Threats was also enhanced through the installation of a Threat Intelligence system, which assembles threat data from various sources and prepares AIS accordingly.

- **Promoted Cyber Security among Affiliates** AIS acquired CS Loxinfo Plc. or CSL, an ICT service provider, in 2018 and immediately began improving its policies, administrative standards, processes, systems and information technology to bring them in line with AIS group cyber security and data privacy policies and practices.

- **24×7 Cyber Security Operation Center: CSOC** In 2019, AIS upgraded its cyberthreat response capability by forming the CSOC, equipping it with modern surveillance tools and training its staff to effectively and promptly respond to threats 24 hours a day. The center was also developed to monitor against threats to the systems and information technology serving the company's customers.

- **Enhanced Policy on data privacy** in compliance with legal developments and enhanced policy on cyber security for improved clarity, completeness and inclusion of partners and external individuals as well as to keep in step with developments in the digital era such as mobile offices.

- **Cooperated with World-Leading Companies in the Telecommunications Industry** such as Singtel, OPTUS and Globe, exchanging knowledge, technology and experiences to better inform guidelines and practices leading to a model of data security able to enhance efficacy and mitigate risks from operation, safeguard data and respond to cyberthreats promptly.

- **Auditing** In 2019, both internal and independent auditors inspected the company's cyber security and data privacy, evaluating such areas as general information systems control, data security awareness building projects, cyber security incident management and protection and operation of cloud systems. Overall, no cyberthreats or violations/loss of personal data resulting in a legal case or fine were detected at AIS in all of 2019.



For 2020, AIS has set goals in accordance with its cyber security and data privacy mission as follows:

1. Laws and Regulations

- Enhance cyber security and data privacy policies and standards in line with legal developments such as by preparing to operate and observe technological standards outlined in the Cyber Security Act as AIS is an the Information Technology and Telecommunications Group and is considered part of the Critical Information Infrastructure: CII, thus being legally required to comply with such regulations.

2. Technological Development and Operations

- Enhance the systems and operations of the Cyber Security Operation Center (CSOC) to better defend, manage, handle and mitigate cyberthreats against the company in compliance with international standards and prepare to provide a network and information technology Manage Security Service: MSS) to customers.

- Prepare to handle cyberthreats and hold the annual executives' crisis drill.

- Enforce use of the data privacy classification framework across the entire organization.

- Communicate and enforce compliance in revamped cyber security and data privacy policies by business and trade partners.

[GRI 418-1]

Performance Table



Number of reported complaints during the year regarding breaches of customer privacy and losses of customer data	2015	2016	2017	2018	2019
 From individuals and general agencies	271 Cases	321 Cases	575 Cases	131 Cases	124 Cases
 From regulatory bodies	13 Cases	11 Cases	15 Cases	47 Cases	47 Cases
 Leaks, thefts, or losses of customer data	0 Cases	1 Cases	0 Cases	0 Cases	0 Cases
Requests for private customer data from government agencies ¹	26,022 Cases	26,301 Cases	26,710 Cases	28,270 Cases	28,334 Cases

¹ The company provides customer data upon the request of authorized and designated government agencies by virtue of the law i.e. the Court of Justice, Royal Thai Police, Anti-Money Laundering Office, etc. As a result, 100% of the requests resulting in disclosure.

[GRI 102-7, 201-1]

2019 Economic Performance



Economic value generated

Total assets ⁽¹⁰²⁻⁷⁾

289,669
Baht million

Total revenue ⁽¹⁰²⁻⁷⁾

180,894
Baht million



Economic value distributed

Operating cost

111,899
Baht million

Employee wage and benefits

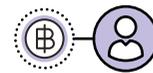
10,760
Baht million

Payment to government

16,696
Baht million

Community investments

144
Baht million



Payment to providers of capital

Dividend payments

21,050
Baht million

Finance cost

4,777
Baht million



Economic value of AIS Group

Net profit

31,190
Baht million

EBITDA

78,710
Baht million



Sustainability Performance Society



Human Capital Development

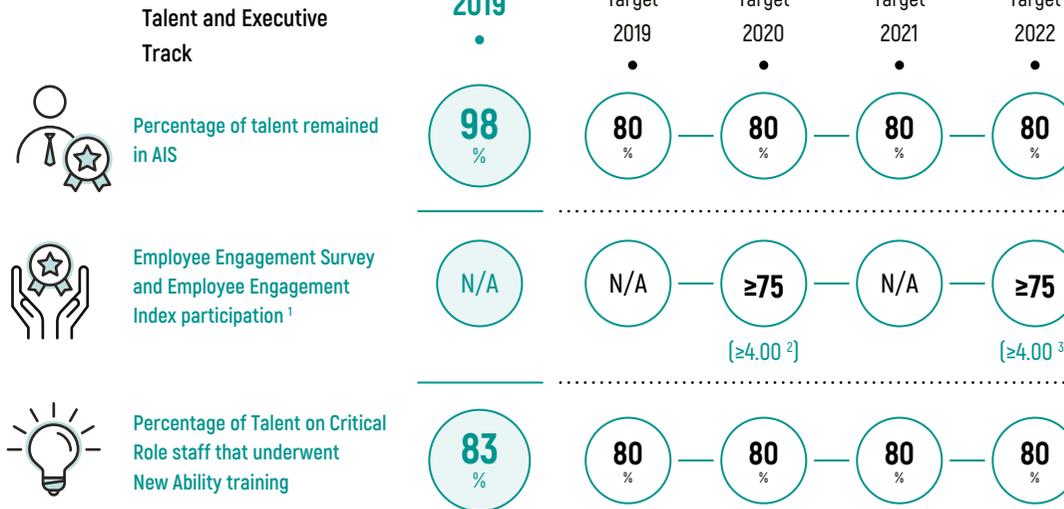
Drive AIS' human capital to pursue new strategic growth area focusing on digital business

Target 2022



1. Acquire enough staff with new abilities in digital technology to support business growth
2. 80% of talent pool is retained
3. 80% of Talent on Critical Role staff undergo New Ability training in digital technology
4. Employee Engagement Survey participation rate above 75% and Employee Engagement Index above 4.00

Significant Improvement in 2019



Notice:
 - * Denotes Employee Engagement score
 - AIS hired an external consultancy agency to carry out the Employee Engagement Survey
 - AIS undergoes an Employee Engagement Survey every two years, which is why 2019 and 2021 do not feature points
 - Employee Engagement Index points do not account for employee engagement at Advanced Contact Center Co. Ltd.

1. AIS was ranked 169th on the Forbes Global 2000: World's Best Employers 2019 roundup based on a global poll, regional surveys and the input of over 14 million employees worldwide.

2. AIS received the Marketing Excellence award and Human Resources Management Excellence award at the Thailand Corporate Excellence Awards 2019 organized by the Thailand Management Association (TMA) and Sasin School of Management of Chulalongkorn University

3. AIS received No.1 Brand Thailand 2019, marking its 8th year in a row, based on its perceived dedication to human resource development and employment excellence as well as its ability to attract new and capable employees.



[GRI 103-1, 103-2]

Challenges & Opportunities



The telecommunications industry has rapidly and definitively transitioned into the digital era, compelling businesses to undergo significant changes, especially to cope with an age of digital disruptions. The situation has necessitated AIS go beyond being a solely mobile phone service provider to being a provider of digital technologies that respond to the wide array of customer demands. In maintaining industry leadership, AIS has had to tackle the challenge of enhancing its capabilities and preparing itself to keep in step with a rapidly changing business environment. So that it may cope with digital disruptions and the fast pace of digital technology, AIS had to find personnel with the knowledge, capabilities and new abilities that would allow it to expand into new avenues in a short window of time. These recruits gave AIS confidence it could meet customer demands and remain a leading competitor. AIS also altered its internal structure and made adjustments to its work culture for heightened awareness and creativity, making sure to provide fair rewards. Changes to the company's management of human capital were done to address the transitioning demands of its business and to ensure it could move forward and retain high quality personnel in the long term.

[GRI 103-3]

Management Approach



AIS devotes great importance to human capital management. Its Chief Executive Officer (CEO) oversees operational policies enacted under the supervision of the Chief Human Resource Officer (CHRO), who interprets such policies into strategies and work plans, making sure to comply with relevant laws and with consideration to human rights. The focus is on operating with equality and fairness and to apply sustainable development principles to all human capital strategies.

The AIS approach involves finding new and high quality personnel for employment while also supporting employees at every level to develop by presenting them with opportunities for training in knowledge and skills that will enhance their capabilities and address the challenges faced by the businesses. The focus is on building new abilities that are responsive to the modern world such as design thinking, digital skills and data analysis. Existing skills are also improved upon for effective action in the modern context such as applying skills used for existing digital systems to emerging systems. Knowledge occurring in the digital age is being used to carry out the company's digital transformation within the following framework:

1. Talent Attraction, Retention and Succession Plan

1.1. Fair Employment

AIS adheres to fair employment principles and complying with all applicable laws as well as sees the importance in having a diverse workforce populated by personnel with different bases of knowledge and skills. The company maintains a policy against employing child and all types of illegal laborers while supporting the employment of disabled persons and providing funds to the Disabled Persons Support and Quality of Life Development Fund, seeking to have disabled employees work in the communities most convenient to them and for them to acquire new abilities in the digital technology industry.

1.2. New Ability

AIS works with leading universities both domestic and abroad to organize activities that introduce itself and open the opportunity for students with functional skills for the digital age such as blockchain, AI and data analytics to join the company and enhance its digital growth capability sustainably.

1.3. Career Development

AIS supports its employees in contributing to its growth plan and developing their career capabilities. Employees are provided with data and advice from their superiors so that they may plan their careers and support their own sustainable development.

1.4. Employee Retention

AIS maintains practices to retain and encourage skilled employees to remain and grow alongside the organization, including providing incentives both monetary and non-monetary and strong benefits to employees at levels such as health insurance and a standard meeting healthcare center.

1.5. Succession Plan

Ensuring continual operation, AIS maintains succession plans for every position throughout its structure using a criteria and process that transparently and fairly selects the most capable successor for any position with an emphasis on leadership capability and readiness to assume the role.

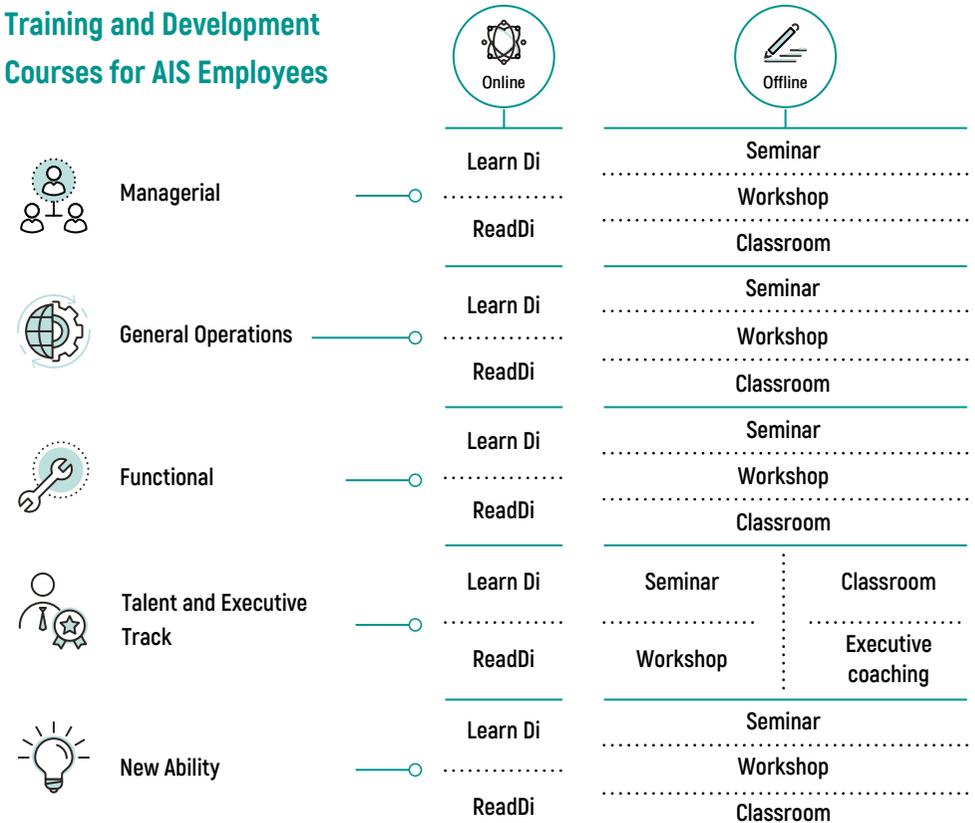
2. Lifelong Learning

AIS supports its employees in enhancing their skills and knowledge for growth in their careers and diversification beyond their base skillset in line with the changes spurred by the digital disruption era. AIS Academy promotes Lifelong Learning using both online and offline systems with the goal of fostering creativity, open-mindedness and continual skill development and heightened efficacy. In the past year, AIS improved its employees through a variety of developmental programs and training based on their own demands as follows:

2.1. Employee Development and Training

AIS supplied necessary courses to employees via the Learn-Di and Read-Di applications. Learn-Di is a collection of courses and knowledge on digital technology trends and developments and serves as an online library for research and study. A consideration in development work by AIS was the actual demands of employees looking for specialization through training. Courses were as follows:

Training and Development Courses for AIS Employees



Notice:

- LearnDi and ReadDi are mobile application platforms developed by AIS Academy to allow employee access to online courses 24/7

2.2 Individual Development Plans

Individual Development Plans were drafted in collaboration with the superiors of each employee. A Competency Model was also created based on collaborative analysis between the employee, their superior and the human resources team in order to lay a foundation towards career development.

2.3 Succession plans and strategies

Succession plans and strategies were set for key positions as a matter of risk-management. Successor selection was based on performance and appropriate qualities with a capacities test administered for the drafting of individual executive development plans and assessment.

2.4 Evaluating the effectiveness of training

AIS employed the Kirkpatrick Model, which measures results in 5 levels where level 1 measures satisfaction, level 2 measures behavioral changes post training until level 5 measures return on investment. In 2019, AIS evaluated leadership programs organized for Talent employees.

3. Employee Well-Being

AIS cares for its employees' well-being with programs encompassing physical and mental health towards reducing illness and promoting a positive state of mind, which can impact both work and personal life potential. A financial health program is also implemented that cares for employees in the long-term, from their employment through to the end of their time at AIS. The work environment is also maintained to provide employees a high quality of life.

3.1 Health and well-being activities were organized for employees with the objective of preventing illness and injury. Activities throughout the year were organized the 6 Aor concept covering diet, academy, emotion, exercise, fiscal discipline and social responsibility.

3.2 The "Learning from Falling" relationship building activity was held to bring together employees with different knowledge bases and backgrounds so that they may exchange experiences and ideas. The program also encouraged initiative and innovation for self-development, supporting the company's digital transformation.

Activities throughout the year were organized the 6 Aor concept



Diet

Knowledge on nutrition was provided to staff to enhance their health. Healthy cuisine banquets were organized.



Academy

Knowledge on digital technology and changes to the business from both internal and external experts was provided to prepare and elevate staff.



Emotion

Programs and activities were organized to strengthen staff mental fortitude, mental development and emotional quotient.



Exercise

Programs and activities were organized to enhance the physical fitness of staff with health experts brought in to provide knowledge on improved care of physical health.



Fiscal Discipline

Programs and activities were organized to improve the financial health of staff with experts providing knowledge on saving, investment and tax management.



Social Responsibility

The "Aun Jai Volunteer" program was initiated with the concept to integrate social responsibility into the daily workflow of employees, providing them knowledge, instilling a sense of responsibility in them and supporting them to be active members of society. The program created opportunities for staff to better their hometowns or areas with which they are tied. AIS provided financial support to their undertakings with a maximum 100,000 Baht available to each effort. Staff were also provided with days off not counted as leave to pursue volunteer work.

3.3 Safety, hygiene and work environment

efforts by AIS were directed towards achieving concrete results and creating a sustainable culture of safety, hygiene and work environment maintenance as well as to comply with relevant laws. Activities spanning within and outside the company were carried out in 2 ways:

- Operation Safety–The setting of standards for safety throughout the operation process.
- Personal Safety–Provision of safety equipment for all employees operating in risk areas.

4. Performance Appraisal

AIS devotes importance to performance evaluation and fair remuneration, undertaking performance appraisals 2 times a year, divided between:

- 4.1 Appraisal of achievement of objectives and targets jointly set by superiors and subordinates.
- 4.2 Appraisal of work behavior based on corporate culture.

Appraisal results are used in considering remuneration and are communicated to employees for the planning of mutual sustainable development.

5. Remuneration and Benefits

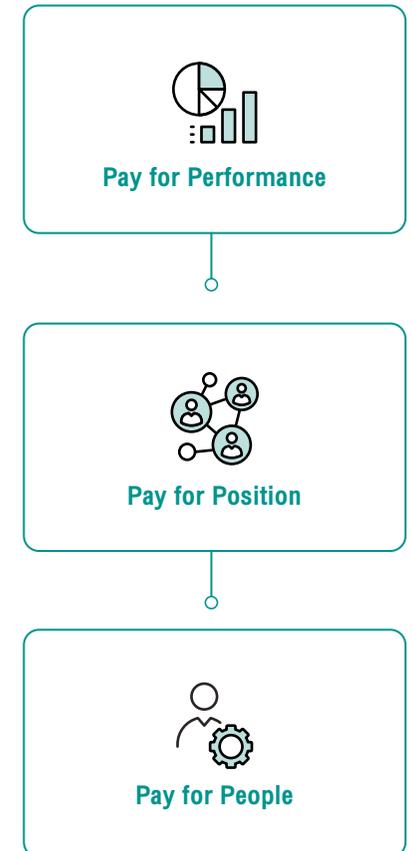
5.1 Remuneration

Remuneration for employees is compared to in and out of industry rates with an emphasis on equality, relation to company returns and relevance to duties. AIS employs an external consultancy firm to design its crucial human resource systems, which includes improving remuneration calculation for great clarity, accuracy and fairness to keep up with changing contexts in the digital era. The firm also carries out surveys of pay and benefits in the labor market for comparison to AIS and monitors changes to criteria, benefits management and remuneration formats used by other industry leading companies for analysis and development of AIS remuneration in the interest appropriacy, enhancement of talent retention and attraction of future employees.

5.2 Employee Benefits

AIS provides a range of benefits to its employees such as marriage support funding, educational funding for employee children that meet performance criteria, assistance funds for accident victims, patient visitation funding, funeral services assistance funding, natural disaster assistance funding, loyalty rewards, health checkups, medical care, life insurance, etc.

The 3 P policy for remuneration calculation utilized by AIS

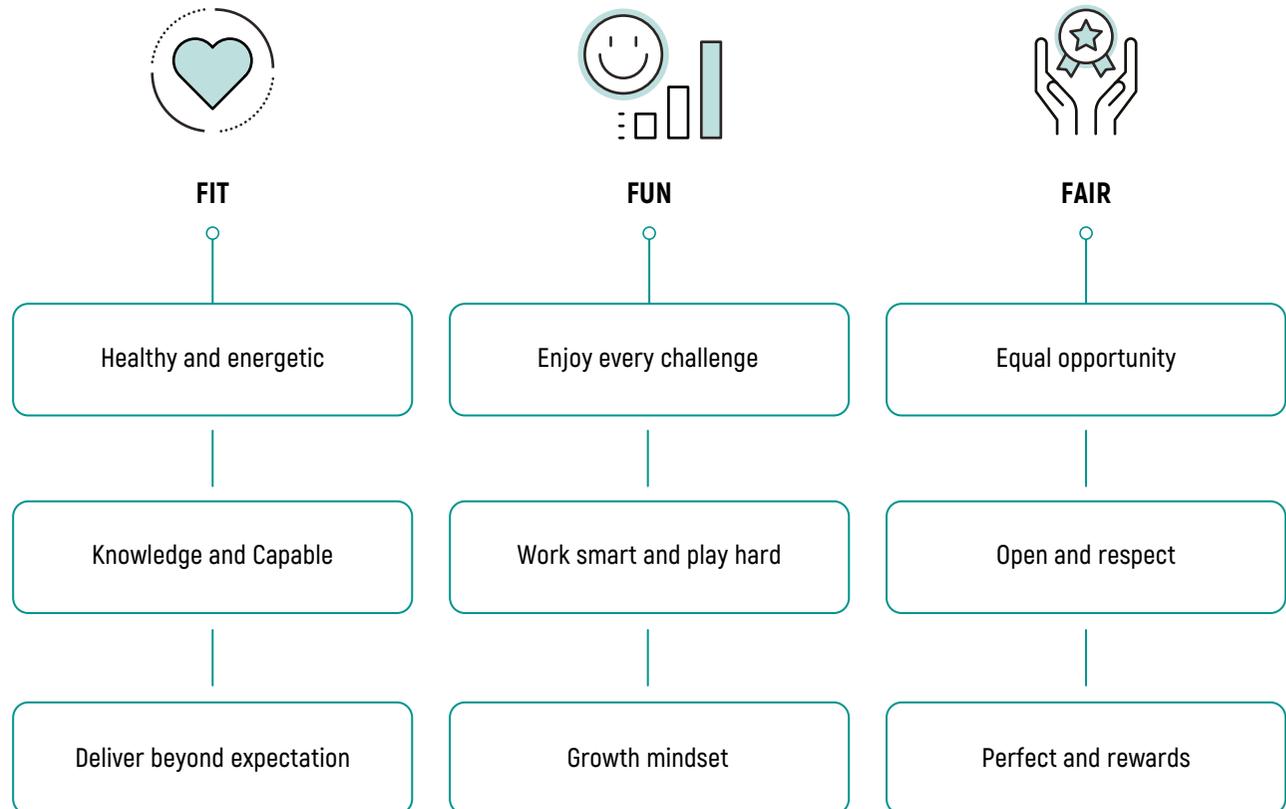


2019 Progress



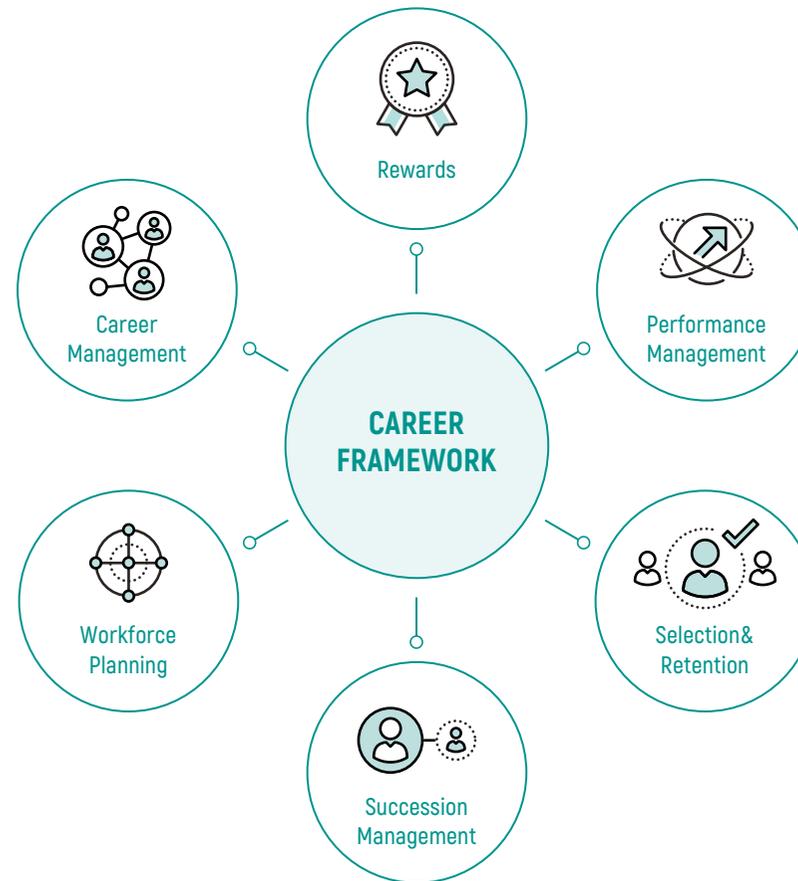
AIS in 2019 sought to introduce a new corporate culture and DNA under the concept “FIT FUN FAIR”, encouraging employees to be creative and providing them with opportunities to enhance their skills in response to the company’s digital challenges as well as promoting a unified vision of the organization’s goals as to maintain its strength and leadership with consistency and sustainability. AIS also communicated that it is an organization for all generations, supporting an open work environment and for employees at every level to showcase their abilities and potentials in driving the company towards its future goals.

AIS in 2019 opened itself to Generation Z, employing those in the age group and allowing them to fully showcase their capabilities. Being a multi-generational workforce that includes baby boomers, Gen X, Gen Y and Gen Z personnel, AIS has had to adjust its human resource management strategies, focusing on effective talent attraction, succession planning, continual employee development and the well-being of staff in accordance with relevant laws.



1. Talent Attraction, Retention and Succession Plan

In 2019, the AIS recruitment team held activities at 18 universities to introduce the company and attract applications from students. A total 2,583 applications were submitted, from which AIS selected criteria matching students for involvement with the company after graduation and career planning. This year saw the "AIS Career Framework" created to serve as a tool for introducing processes and protocols to employees and superiors, promoting career growth and helping to uncover employees with growth potential.





2. Lifelong Learning

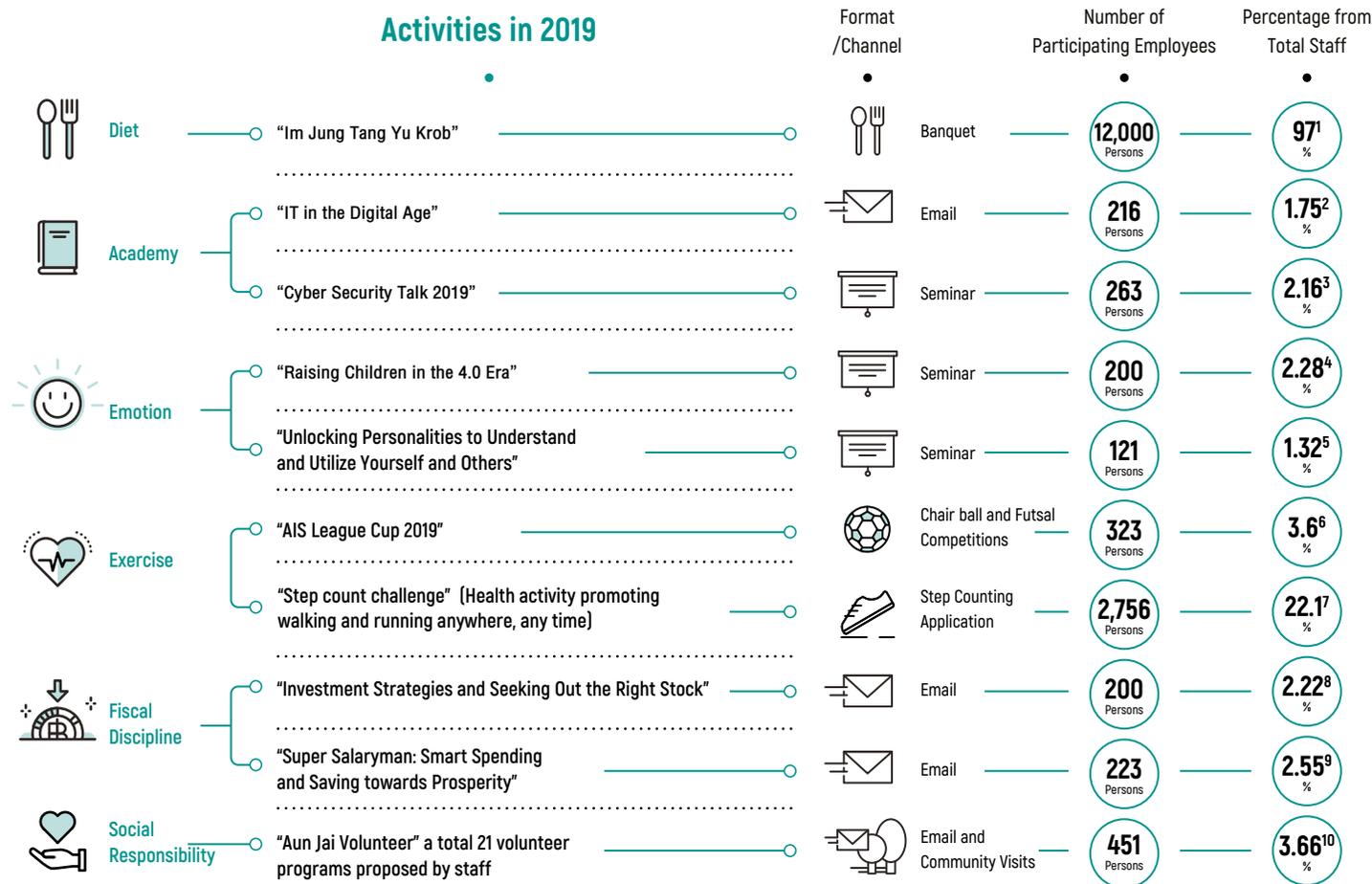
resource development plan and in line with its operations as follows:

- General operations courses encompassed all employees and included orientation, legal compliance and fundamental skills such as effective salesmanship, English communication, etc.
- Managerial courses focused on developing leaders and included Situation Leadership, First Line Manager and Second Line Manager.
- Functional courses focused on particular operational tracks such as salesmanship and customer relationship building and retention
- Compliance courses were obligated by the law and included safety training and basic firefighting.
- Talent, or high potential executive track employees, underwent courses organized in collaboration with leading domestic and international universities to ensure responsiveness to the company's changing context and strategies such as Harvard Business, University of Manchester and South East Asia Center (SEAC). Courses were developed for 4 Talent groups divided by roles and positions in the company and were aimed at preparing them for succession or growth towards executive positions.
- The STEAM Ozobot course was organized to teach employees about science, technology, engineering methodologies and mathematics for application to real-life problems. The Robotic Process Automation (RPA) course was provided to employees adapting to the automation of various systems and routines. AIS Technical Knowledge Management (TKM) also organized the "Code for Kid" course to provide program coding knowledge to children of employees, with participants allowed to instruct a rudimentary bot in order to inspire them towards computer engineering work in the future.

3. Employee Well-Being

3.1 Employee Health and Well-Being Activities

AIS continued to pay close care to the well-being of its employees in 2019 under the concept of preventative health enhancement. A year-round activity was held using the 6 Aor concept, comprising diet, academy, emotion, exercise, fiscal discipline and social responsibility.



Notice:

- Report limited to AIS staff in Thailand
- Calculations and report based on data from SAP (Data Center) AIS Academy and HR-ICE
- ¹ AIS used the average employee count between 1 January and 31 December 2019 (12,374) to calculate participation in “Im Jung Tang Yu Krob”
- ² AIS used the average employee count between 1 January and 30 November 2019 (12,370) to calculate participation in “IT in the Digital Age”
- ³ AIS held “Cyber Security Talk 2019” in every region and used employee numbers as of June, 2019 (12,170) as the basis for calculating participation
- ⁴ AIS held “Raising Children in the 4.0 Era” in the central region and used employee numbers as of May, 2019 (8,757) to calculate participation
- ⁵ AIS held “Unlocking Personalities to Understand and Utilize Yourself and Others” in the central region and used employee numbers as of November, 2019 (9,199) to calculate participation
- ⁶ AIS held “AIS League Cup 2019” in the central region and used the average employee count between 1 June and 30 August 2019 (8,952) as the basis to calculate participation
- ⁷ AIS opened “Step Count Challenge” to its employees in every region and used the average employee count between 1 July and 31 December 2019 (12,459) as the basis to calculate participation
- ⁸ AIS held “Investment Strategies and Seeking Out the Right Stock” in the central region and used employee numbers as of July, 2019 (9,022) as the basis to calculate participation
- ⁹ AIS held “Super Salaryman: Smart Spending and Saving towards Prosperity” in the central region and used employee numbers as of May, 2019 (8,757) as the basis to calculate participation
- ¹⁰ AIS used the average employee count between 1 March and 30 November 2019 (12,319) as the basis for calculating participation in “Aun Jai Volunteer”

3.2 Mutual Learning

"Learning from Falling" Program

Initiated in 2019, this activity was held to bring together employees with different knowledge bases and backgrounds so that they may exchange experiences and ideas. The program also encouraged initiative and innovation for self-development, supporting the company's digital transformation.

"Learning from Falling" Program



Notice:

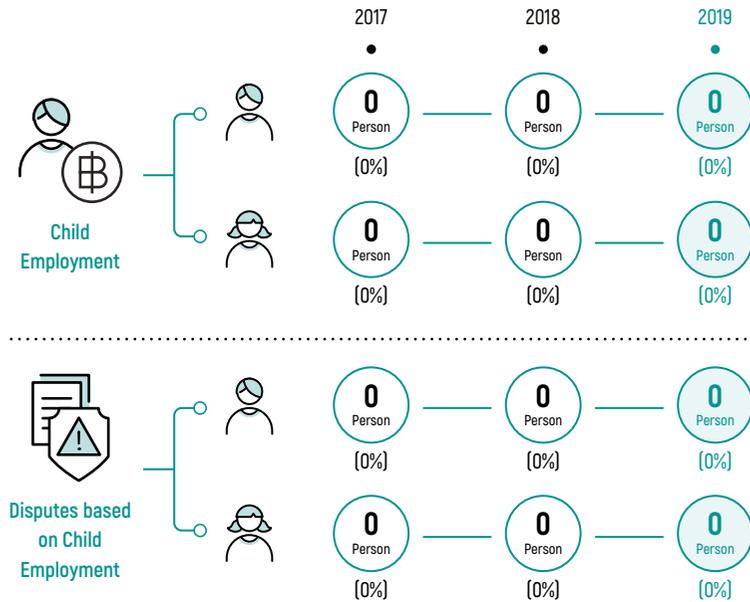
- AIS counted participants as of 30 September 2019 and used the average amount of employees between 1 January and 30 September 2019 (12,311) to calculate the percentage of participants in "Learning from Falling", limiting the count to AIS employees in Thailand

4. Labor Law Compliance

4.1 Child Labor

- AIS has no policy to employ laborers under the age of 15.
- AIS mandates that its business partners refrain from employing illicit child laborers and strictly comply with labor laws.

Additional Information Related to Labor Law Compliance



Notice:

- Report limited to AIS employees in Thailand
- AIS used child labor data from SAP [Data Center] collected between January and December 2019
- "Child Labor" refers to the employment of individuals under the age of 15

Safety Performance Tables 2019

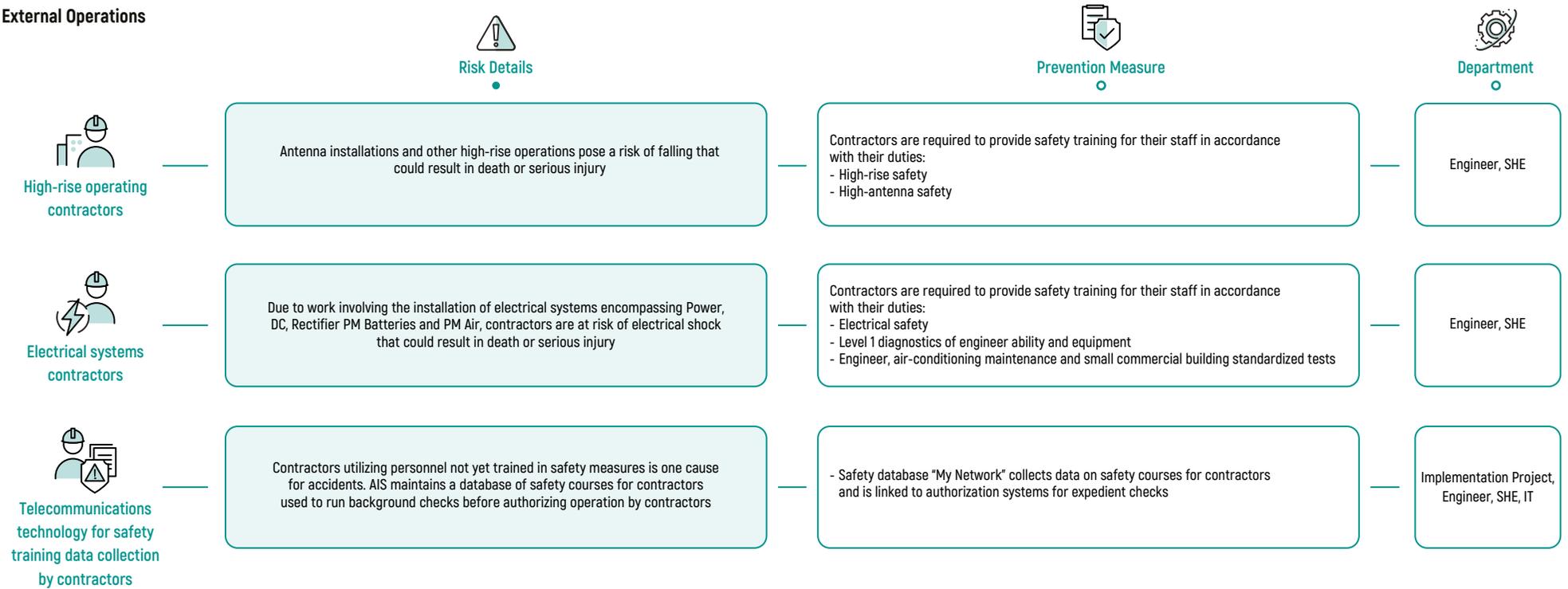
AIS always prioritizes safety and carried out a range of safety, hygiene and work environment enhancement activities in 2019, as follows:

Hygiene and Environmental Safety Performance	 Risk Details	 Prevention Measure	 Department
 High PM 2.5	<p>The PM 2.5 pollution issue that affected all of Thailand and was particularly severe in Bangkok, saw particulate matter rise to levels threatening the health of employees operating outside buildings or when commuting.</p>	<ul style="list-style-type: none"> - Approximately 20,000 N95 masks were passed out to employees. - Basic knowledge on protection from PM 2.5 was provided by medical specialists 	<p>HR, Safety, Admin, ACM</p>
 Defensive Driving	<p>With company operations including product transport, service and coordination requiring employees operate motor vehicles, the risk for accidents is high. In response, the company maintains defensive driving measures for all staff.</p>	<ul style="list-style-type: none"> - All company vehicles are equipped with a GPS for control - Driving speed limited to 120kph - Save driving promoted during long holidays such as Songkran and New Year's 	<p>HR, Safety, Admin</p>
 Building, Electrical Systems and Electrical Equipment	<p>Buildings and electrical systems must always be inspected for safety and compliance with laws requiring an annual inspection in the interest of safety for employees and outsiders on company grounds.</p>	<ul style="list-style-type: none"> - Building safety inspections and maintenance, electrical systems and equipment inspections - Monthly firefighting equipment inspections encompassing fire escapes, fire extinguishers, emergency lights, fire alarms, etc. 	<p>Safety, Engineer</p>
 Work Environment	<p>Preliminary work environment surveys were done to uncover any health hazards such as insufficient light or excessive noise</p>	<ul style="list-style-type: none"> - Annual measurement and analysis of work environment heat, light and noise for comparison with legal and institutional standards 	<p>Safety, Engineer</p>
 Office Syndrome	<p>Employee behaviors such as sitting hunched back and long periods of computer use can lead to muscle tensions associated with the condition known as Office Syndrome</p>	<ul style="list-style-type: none"> - "Mobile Physiotherapy" program brings physical therapists into offices to inspect behaviors and provide education on prevention of Office Syndrome - "Office Syndrome, the Most Common Officer Workers Disease" course provided by medical specialists - "Tips and Trick to Remedy Office Syndrome" course provided by medical specialists focusing on ergonomic work station setup with tips on stretching from physical therapists 	<p>Safety, Internal Communication & Employee Activities</p>
 Automated Electrical Defibrillator	<p>People with heart conditions most often pass away while traveling to hospital due to CPR only providing first aid to keep blood circulating to the brain but not aiding in the heart returning to normal function</p>	<ul style="list-style-type: none"> - Automated Electrical Defibrillator (AED) installed throughout the company building for use by employees and outsiders - AED usage training provided to employees 	<p>Safety</p>

Notice:

- Report limited to AIS employees in Thailand
- AIS used data from HR Admin and the Safety Unit for collected between 1 January and 31 December 2019 for this report
- Building safety measures also apply to AIS warehouses

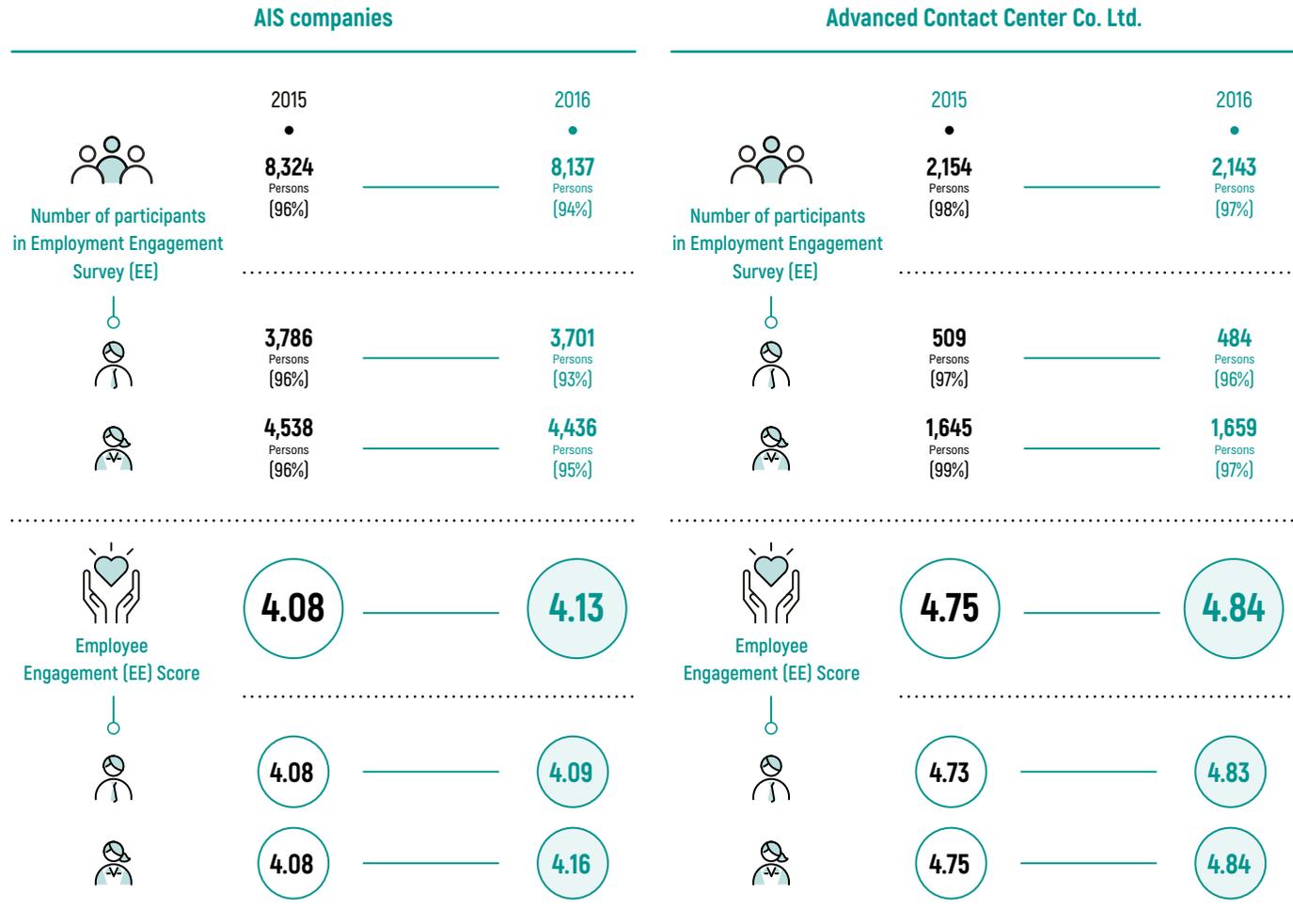
External Operations



Employee Engagement Score



In 2018, AIS and Advanced Contact Center Co. Ltd. underwent an Employee Engagement Survey to uncover effective practices and limitations with results analyzed to prescribe approaches to better the organization and its human resource management. The survey found the company's Employee Engagement Index rose (as displayed in the table below). Nonetheless, areas for improvement were pinpointed, including the need to support team members in openly expressing themselves in the interest of communication and mutual understanding.



Notice:

- Advanced Contact Center Co. Ltd. carried out separate Employee Engagement Surveys than AIS consisting of MMT, AWN, FXL, WDS, etc.
- AIS and Advanced Contact Center Co. Ltd. underwent Employee Engagement Surveys between October 2017 and 2018 with only AIS and Advanced Contact Center Co. Ltd. employees in Thailand surveyed
- AIS hired an external firm to carry out the Employee Engagement Survey



Performance Table



	2016	2017	2018	2019
Total Employees	12,207 Person	11,884 Person	12,314 Person	12,701 Person
Male	4,944 Person	4,810 Person	4,985 Person	5,141 Person
Female	7,263 Person	7,014 Person	7,329 Person	7,560 Person
Breakdown by Age				
50 Years and Above 50+	375 Person	463 Person	554 Person	524 Person
30-50 Years 30-50	6,800 Person	6,893 Person	7,024 Person	7,349 Person
Below 30 Years <30	5,032 Person	4,478 Person	4,736 Person	4,828 Person
Breakdown by Employee Type				
Permanent	3,861 Person	3,884 Person	3,999 Person	3,774 Person
Contracted	4,929 Person	4,969 Person	5,049 Person	5,004 Person
	1,083 Person	926 Person	986 Person	1,367 Person
	2,334 Person	2,045 Person	2,280 Person	2,556 Person

	2016	2017	2018	2019
Breakdown by Employee Level				
Top Management	110 Person	115 Person	125 Person	123 Person
Middle Management	1,605 Person	1,627 Person	1,643 Person	1,655 Person
Operational Staff	3,229 Person	3,068 Person	3,217 Person	3,363 Person
Voluntary resignation	591 Person	635 Person	530 Person	756 Person
Ratio of voluntary resignation to employee total	7.08 %	7.44 %	7.45 %	5.95 %
Percentage of evaluated employees	100 %	100 %	100 %	100 %
Employees with Disabilities	27 Person	120 Person	123 Person	212 Person
Employees that participated in AIS wellness program	2,951 Person	7,024 Person	18,336 Person	20,335 Person
On-the-job fatalities	0 Person	0 Person	0 Person	4 Person
On-the-job injuries	0 AU	0 AU	1 AU	4 Person
Average sick leave	4.21 Person / Days	3.11 Person / Days	2.78 Person / Days	2.60 Person / Days

Notice:

- 2015-2019 employee count excludes daily contractors

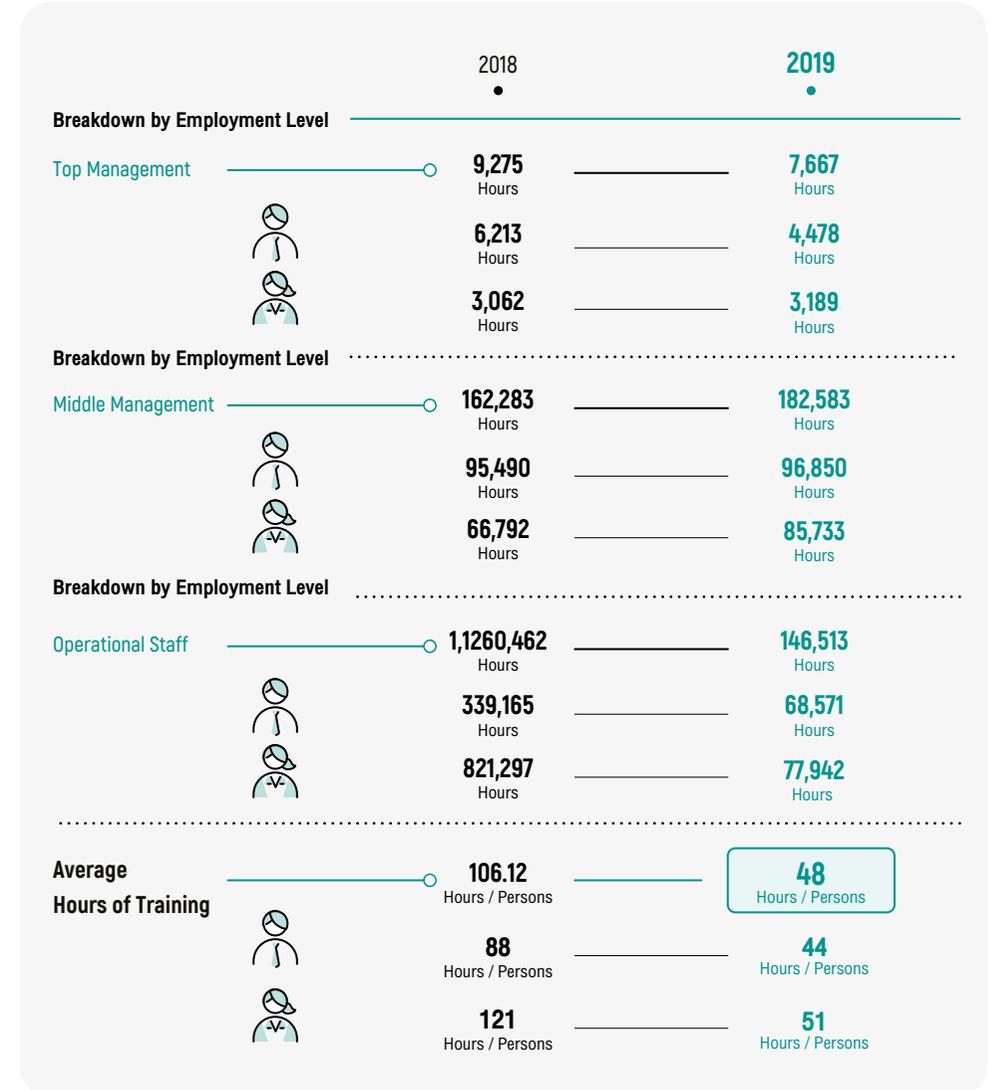
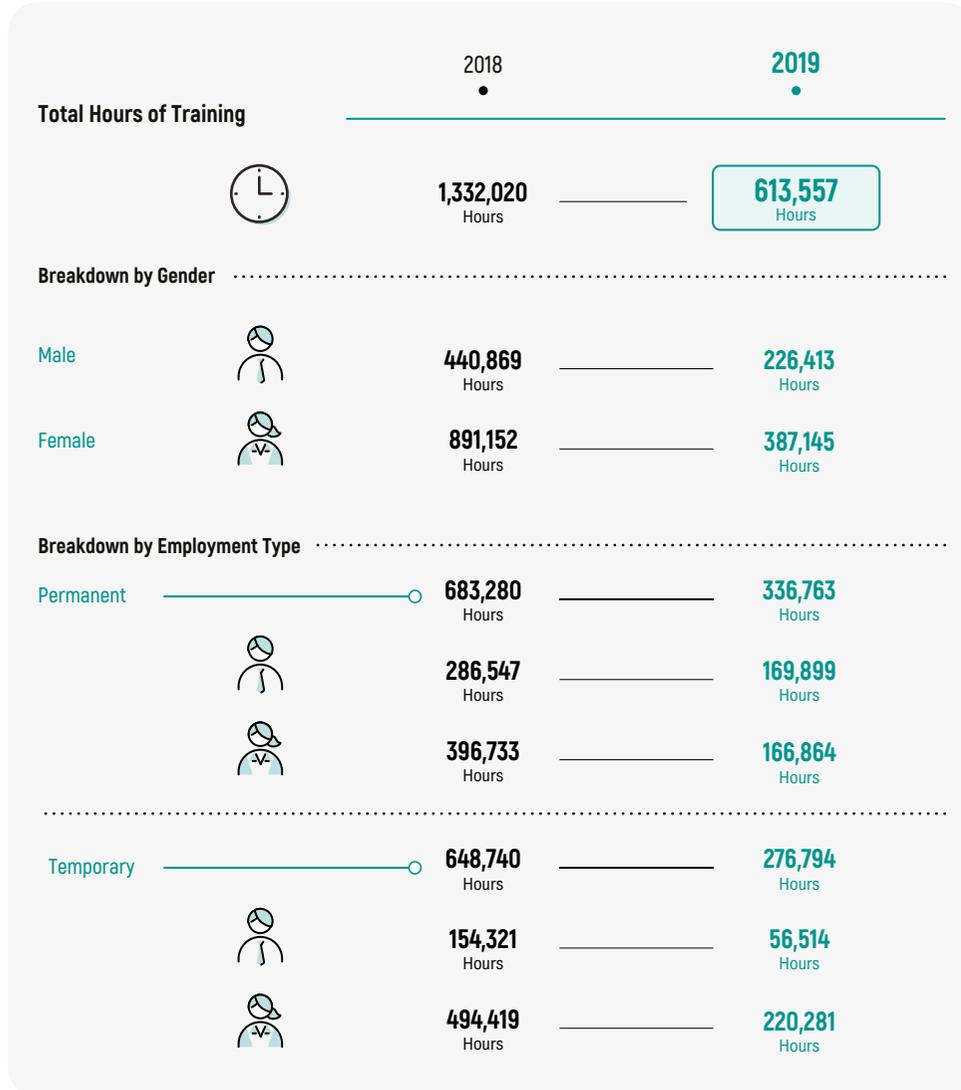
- 2019 employee count includes daily contractors [272]

¹ AIS total employee count based on data from 31 December 2019 taken from the HR Data Center and HR Department of Advanced Contact Center Co. Ltd., limiting report to AIS employees in Thailand

² AIS disabled employees count as of 31 December 2019 accounting for disabled employees within AIS Group and Advanced Contact Center Co. Ltd. hired in accordance with Articles 33 and 35 of the Disabled Persons Support and Life Quality Development Act

³ AIS Wellness participation data collected between 1 January and 31 December 2019. Employees may have participated in multiple activities

⁴ AIS on-job fatalities and injury data from AIS Safety Unit collected between 1 January and 31 December 2019



Notice:

- Report limited to AIS employees in Thailand that participated in AIS Academy
- AIS Academy data as of 31 December 2019 used to calculate training hours

- AIS transitioned to a digital organization by replacing a number of its seminar courses with courses provided via online platforms, providing greater convenience to employees and more efficiently managing cost. AIS also promoted on the job training, which further contributed to a reduction in training hours in 2019

Social Inclusion

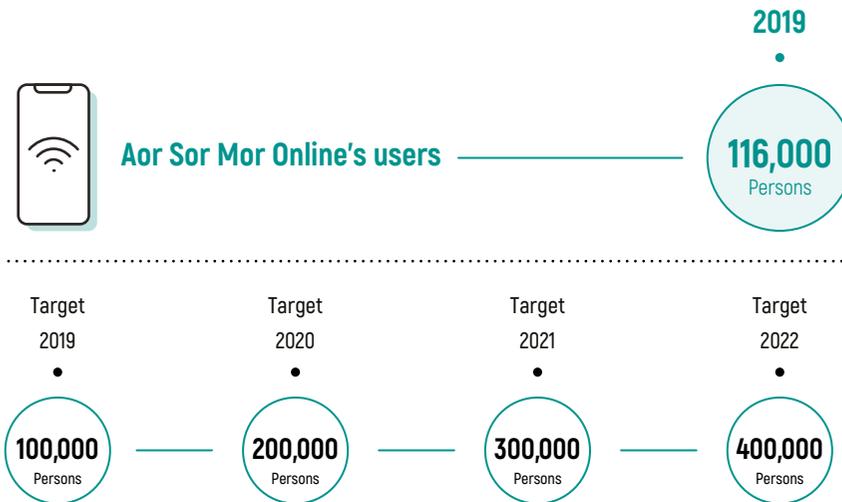
Leverage our digital infrastructure&solutions to uplift community well-being&reduce the digital divide

Target 2022



Improve the wellbeing of 400,000 people through our digital platform and collaboration.

Significant Improvements in 2019



[GRI 103-1]

Challenges & Opportunities



Communication technology in Thailand has quickly entered the digital era and led to the creation of various innovative products and services attuned to the lives and work of the Thai people. However, even while telecommunications networks now cover over 98 percent of the population, variances in usage between urban dwellers and those in remote communities still exist. Information from the National Statistics Office indicates that while 90 percent of the population uses mobile phones only 57 million people use the internet, signaling an inequality in digital technology access. Even as urbanites use smartphones and the internet for a variety of purposes both personal and professional, some groups in the provinces derive little benefit from such tools, unable to receive information in a timely manner, access knowledge that would

better their lives or use technology to enhance their careers. Moreover, many communities have safety and health concerns to do with living near base stations, creating a persisting challenge for expanding telecommunications that has stunted service and limited usage. AIS, as a telecommunications and digital technology service provider, sees the opportunity in using digital and communications technologies to improve the daily lives and careers of the Thai people and promotes appropriate use of technology by communities to grow their economies and societies. It also sees the opportunity for the telecommunications business to expand and acquire a wider source of revenue, ultimately promoting a long term positive relationship between AIS and communities.



[GRI 103-2]

Management Approach



AIS is driven to play a part in enhancing the quality of life of the Thai people using technological and communication connections as a key tool for supporting Thais to enter the digital era, all the while being mindful of its core business. Applying its telecommunications resources and staff, the company's Sustainable Business Development Department proposes policies and strategies and issues reports to the Chief Executive Officer and Sustainability Development Board.

Acknowledging the inequality and lack of opportunities faced by citizens in remote areas, especially in their public health and education systems as compared to urbanites, AIS has adopted a policy aimed at elevating their quality of life using its digital platform and partnerships. The policy comprises the 3 following strategies:

1. Expand digital infrastructure for maximum coverage so efficient communication can keep in step with national economic development

AIS is always developing its telecommunications network for better quality and coverage across the nation, both in urban areas and locations with low population density. It also works to respond to the growth of new communities and is constantly developing and acquiring new technologies that extend the capability of its network so that it may accommodate rapidly changing communication methods. A focus of AIS is building infrastructure in remote locations in acknowledgement of the growth of their households and the need for telecommunications systems by public agencies.

2. Support public access to appropriately priced digital communications equipment

Aware of the inequality and lack of opportunity faced by less fortunate citizens, AIS has sought to provide all Thais with access to digital technology and to promote knowledge in digital technology by seeking out appropriate choices for them such as smartphones able to handle 3G and 4G

priced between 1,000 and 3,000 Baht, which would enable access to the internet and experience with digital technology across all regions.

3. Create and develop digital platforms that enhance the efficacy of economic and social infrastructure as well as uplift Thai society

It is AIS's goal to use its communication and digital technology capabilities to be a part of developing and creating tools that better the lives of the Thai people. Its focus is on using communication technology and digital systems to enhance public health, education, agriculture, startups and promote human rights.

Public Health

Create a digital platform that effectively supports public health workers, promoting proactive efforts to safeguard against and reduce illness to zero in remote areas.

Education

Provide equal opportunity to access education for target group, misfortunate families and youths, promote knowledge and use of communication technology to enhance potential and life quality.

Agriculture

Drive the creation of digital technology and agricultural knowledge with an emphasis on having agriculturalists access digital know-how for enhancing their crops and better management of impactful factors.

Startups

Take part in developing and supporting startups to create products and services that enter the general market and become viable businesses by providing marketing and technological knowledge at both the domestic and international levels. Acquire partners ready to provide capital to startups.

Human Rights and Social Equality

Be considerate of human rights and equal access to opportunity by supporting the hiring of disabled individuals so that they may be self-sufficient and achieve a sustainable quality of life.

2019 Progress



Expanded the 4G Network and Prepared for 5G

AIS presently maintains a telecommunications network that supports high-speed data transfer via 3G and 4G technology covering 98 percent of the Thai population, a broadband internet network built on fiber technology covering 57 provinces of the country and a WiFi network that supports educational institutions and businesses. AIS has nonetheless begun making preparations to accommodate 5G technology, staging tests and studies in 5 regions of the nation. With 5G poised to serve an important role in providing widespread access to technology and digital systems, to create opportunities for business and industries to develop digital products and services and to enhance production processes for greater efficiency, quality and accuracy, the protocol will have far-reaching economic, social and environmental effects.



Development of Digital Platforms for Communities

Public Health

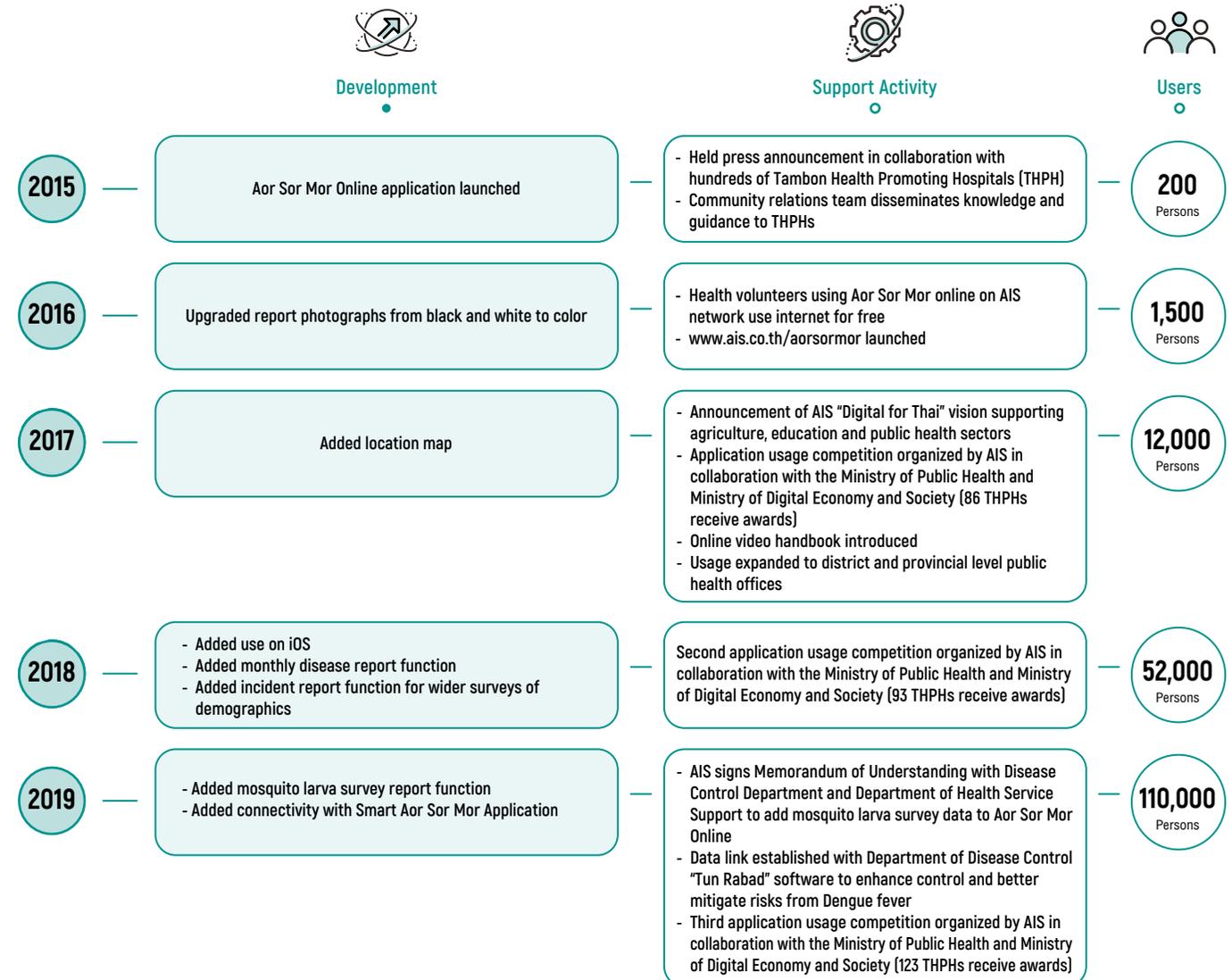
Aor Sor Mor Online application



The Aor Sor Mor Online application was introduced to communities in 2015 for development into an online social communication tool between Tambon Health Promoting Hospitals and Aor Sor Mor. Improving the speed and convenience of communication, the application supports proactive work by health agencies by facilitating news and information distribution, meetings, discussions and reporting. The application enhances Aor Sor Mor's ability to effectively manage and analyze health information and provide appropriate health services. More information at <http://www.ais.co.th/aorsormor>

In 2019, AIS continued to build upon the digital platform created for Aor Sor Mor Online, focusing on developing its functions to better respond to the demands of the expanded Aor Sor Mor network. Details are as follows:

Development of Aor Sor Mor online application





Aor Sor Mor Online Application Adds New Function 'Mosquito Larva Survey'

AIS has joined with the Department of Disease Control and Department of Health Service Support in signing a Memorandum of Understanding on integrating information to bolster precautions, prevention and control of diseases spread by mosquitoes. Using digital technology to link information from mosquito larva surveys entered into the Aor Sor Mor Online application to the Disease Control Department's Contagious Diseases Monitoring System so that it may respond to the application and alert health units in a timely manner, the collaboration will also disseminate accurate knowledge on preventing diseases borne by mosquitoes to Aor Sor Mor members, supporting proactive public health efforts, expanding the knowledge of Aor Sor Mor and providing efficient and equal healthcare to Thais in every region.



3rd Annual Aor Sor Mor Online Application Usage Competition

AIS, working with the Ministry of Public Health and Ministry of Digital Economy and Society, organized the "3rd Annual Aor Sor Mor Online Application Usage Competition", encouraging public health units and Aor Sor Mor members to adopt digital technologies as tools in providing healthcare in accordance with the Aor Sor Mor 4.0 policy and the "Digital for Thai" concept, ultimately sustainably benefitting health systems throughout Thailand.



Looking Toward 2020

Expand the Aor Sor Mor framework

By integrating with state agencies, issuing reports and data collected via Aor Sor Mor Online to the many offices under the Department of Disease Control, Ministry of Public Health and the Aor Sor Mor Network and report information on widespread diseases to inform approaches or measures on prevention. Aor Sor Mor Online also has a plan to support the Department of Disease Control and Ministry of Public Health in surveying the use of chemicals in households. The goal of Aor Sor Mor Online is to become a platform connected to agencies and organizations in need of strong data for the benefit of public health and to reduce exposure to hazardous agricultural substances.

Education

San Rak Kon Keng Hua Jai Kreng

Over a more than 20-year period, AIS Kon Keng Hua Jai Kreng has provided financial assistance to families and scholarships to children selected for participation, aiding them until the completion of an undergraduate degree. So far, the program has provided scholarships to over 900 individuals, seeing through 175 bachelor's degree graduates. Combined, AIS has provided more than 42,534,000 Baht in scholarships and financial aid as well as carried out the following assistive activities:

- The AIS Kon Keng Hua Jai Kreng youth camp brought together young people to exchange experiences and engage in a field trip taking them beyond the classroom, providing them with access to knowledge equal to their urban counterparts.
- AIS-Singtel English Camp resulted from collaboration between AIS and Singapore's Singtel Group with volunteer staff from both serving as English language guidance counselors providing knowledge as well as cultural lessons.
- Guiding graduates into the work force, AIS created opportunities for graduating students of the Kon Keng Hua Jai Kreng program to attend a job training and guidance course that taught them how to draft a resume, engage in a job interview, prepare their demeanor, grow confidence and even appropriately be a part of the work force.

Through the San Rak program, AIS introduced communication technology and digital systems to target groups, providing them the experience and access they needed to see the value in transitioning to the digital era while also fostering relations and positive sentiment toward the company as a socially constructive business in Thailand.



The “AIS Kon Keng Hua Jai Kreng” Show

Presenting stories of young “Kon Keng Hua Jai Kreng”, or strong people with strong hearts, worthy of being held up as models for other Thai youths. Ais every Thursday via online channels including AIS Play, AIS Play Box, YouTube and Facebook.

In the Words of AIS Kon Keng Hua Jai Kreng Youths

Dechathorn Tanomwong

Currently is a Year 1 Vocational Certificate Program student at Pangkon Vocational School in Pangkon district, Sakon Nakhon Chosen for Kon Keng Hua Jai Kreng in 2017 because of a lack of funds for schooling even while supporting his family by selling roti.



“After being chosen for AIS Kon Keng Hua Jia Kreng, I wasn’t only given a scholarship, I was given the opportunity to appear on the AIS Kon Keng Hua Jia Kreng show, which made a lot of people aware of me and want to buy my roti, bringing me even more funding. Now, I have used that money to open a restaurant at my home so I can more easily care for my grandfather while also devoting time to my studies. My grades have even improved!”

Ajchara Aduljit

Currently serving as a public school teacher at Pa Payom Technical College in Pa Payom district, Pattalung Chosen for Kon Keng Hua Jai Kreng in 2014 because of a lack of funding to attend university resulting in her working as a day laborer.



“Receiving the scholarship was a dream come true. After finishing my bachelors in education with a focus on English at Rajabhat University Surat Thani I was given the opportunity to become an English teacher for vocational and diploma automotive engineering, electrical engineering and welding students at Pa Payom Technical College. Apart from providing knowledge to students, I am also able to give care and guidance to those at risk of becoming addicted to drugs or that have aggressive tendencies, helping them to adjust and focus on learning. I am very proud to have gone from being teacher to someone helping the youth and future of the nation”



Education

AIS Playground

In 2019, AIS plotted a course for growing knowledge on digital technology at the regional level, joining hands with Chiang Mai University to open “AIS Playground@CMU Learning Space”, aimed at providing a place for students, developers and startups in the northern region with an interest in digital technology to test and create innovations alongside AIS. The playground was equipped with a high-speed internet network for running practical tests and is available to students and the public at no cost. AIS sponsored technology, equipment and experts to the playground so that it may inspire innovations that effectively respond to the lifestyles of people in the digital era.

AIS plans to extend the AIS Playground to 3 more locations, namely; Chulalongkorn University in Bangkok, Khon Kaen University in the northeast and Prince of Songkla University in the south. The playgrounds will allow developers in the different regions to contribute to 5G technology studies and possibly lead to the creation of innovations to better the nation.

Agriculture

The Intelligent Farm (iFarm) Platform

A tool for assisting Thai farmerst in better managing their farms and effectively controlling yields, Intelligent Farm also allows Thai people to experience a Digital Ecosystem fully geared towards the agricultural business, using digital technology to improve farming by systematically managing tasks, automatically controlling planting and assessing weather conditions.

AIS developed iFarm in collaboration with Sansiri, Kamnanchul Farm and a network of 40 other partners who developed farmland and applied the following technologies:

1. The Intelligent Green House grows melons using smart temperature control, which allows for cooling down to between 4 and 8 °C. The green house has a sensor system connected wirelessly to monitoring equipment that can viewed on the iFarm platform, allowing for control at all times by farmers using their mobile phones or computers.
2. The open field vegetable patch uses a wireless system for measuring ground moisture as well as a wireless electronic water valve system controlled by iFarm via a highspeed wireless network. The convenient approach to farming allows farmers to place measuring equipment by themselves.
3. The Weather and PM2.5 Assessment Station displays readings on the iFarm Dashboard in real-time, allowing for easy study and understanding of weather conditions.





Startup

AIS The StartUp

This business platform is open to startups looking to work with AIS towards further development. AIS supports innovations and technologies and the creation of an ecosystem for moving startups forward, going as far as to assemble resources such as technology and experts to incubate and create business opportunities that will benefit the startups, AIS and the economy. The platform adheres to 3 strategies, namely; generating awareness domestically and in the ASEAN region, building efficient relations conducive to business collaboration in the long term and joint work towards an innovative economy.



From continual implementation of AIS The StartUp, collaboration with startups was achieved throughout all regions of Thailand. Over the past 9 years, AIS The StartUp has brought about over 47 products and services, spurred the employment of over 2,000 people and generated more than 12 billion Baht in annual circulation. In 2019, AIS The StartUp was chosen as the Best Global Accelerator and Incubator Program at Global Startup Award. The recognition is bestowed upon companies with world-class startup operations, operate a knowledgeable team of experts and utilize technology and equipment to drive sustainable business growth at the national and international levels.



Human Rights and Social Equality

AIS Call Center Creates Jobs for Disabled Individuals

Starting in 2007 from AIS's realization of the importance of human rights and social inclusion, this program has been creating jobs for disabled individuals for over 12 years. Seeing the potential in such individuals, their technological capacity and the potential for them to become employees, AIS set about adapting jobs to accommodate disabilities, adjusting the work environment, equipment and amenities as well as introducing technology to facilitate their service of customers. Disabled employees receive the same standard of remuneration and benefits as their peers and can be broken down as follows:

1. 21 Full Time Employees in Bangkok;

- **13 visually impaired employees** tasked with contacting customers to present major AIS campaigns
- **hearing impaired employees** tasked with assisting hearing impaired customers using webcams (iSign), responding to queries about products and services and company support programs.

2. Outsource employees working in various provinces through the cooperation of schools and foundations for the disabled in the interest of having disabled persons remain in their hometowns. From a total 105 outsource disabled employees, 46 are visually impaired and 59 are physically impaired.



Amenities for Disabled Individuals in the Workplace

- Facilitating work by the visually impaired, an online network for hardware was established and the PPA (Text to Speech) program was installed. Keyboard and monitor tracking technology able to relay feedback in spoken Thai was also introduced to allow visually impaired staff to work independently, quickly and conveniently and with efficacy.
- Software and webcams (iSign) were installed to facilitate the hearing impaired to work at the Call Center, allowing them to use sign language via webcam over a program similar to Skype. Sign language interpretation experts carried out monthly evaluations of hearing impaired staff and aided them in participating in team meetings.

- Amenities for physically impaired staff include handicapped elevators and bathrooms, wheelchair ramps and assistive handles, providing convenience and safety to all disabled employees throughout their work day.

Performance Table



	2017	2018	2019	Target 2019
 Aor Sor Mor Online Users	22,000 Persons	52,000 Persons	116,000 Persons	100,000 Persons
 Reduced Report Paper	184,000 Sheets	312,000 Sheets	3,700,000 Sheets	3,200,000 Sheets
 Value of Fuel Saved by Health Service Units	12,000,000 Baht	31,200,000 Baht	40,368,000 Baht	34,800,000 Baht

Cyber Wellness and Online Safety

Established a brand that promotes safe and appropriate use of the internet and social media

Target 2022



1. Become Thailand's number one telecommunications brand, trusted for cyber wellness and online safety.
2. Promote cyber wellness and online safety through digital intelligence quotient (DQ) courses at 2,000 educational institutions and protect 6,400,000 users in Thailand from cyber threats.

Significant Improvements in 2019



1. Collaborated with DQ Institute to translate its Digital Proficiency Test and online DQ course into the Thai language and piloted a DQ proficiency program for students in 24 schools that saw the participation of over 3,100 students.
2. Launched AIS Secure Net and became a partner to Google in promoting its Family Link application, attracting 47,600 users to AIS Secure Net and 5,673,900 users to Family Link by the end of 2019.
3. Organized workshops on awareness of cyberthreats to youths and teacher participation in immunization of students attended by over 678 teachers from 354 schools nationwide.



NETWORK EDUCATOR

Promote **digital quotient**



NETWORK PROTECTOR

Digital tools for **cyber protection**



Family Link





AIS, as a telecoms operator perceived as a purveyor of digital technology and internet usage, has an undeniable role in promoting cyber wellness and online safety and has the ability to play a part in promoting digital technology usage that is beneficial to the economy and society

(103-1)

Challenges & Opportunities



The current widespread use of the internet has made cyber threats a common issue of concern across the globe with dangers such as identity theft, internet addiction and cyber-bullying just a few examples. Within Thai society, public and private health, technology and social entities have turned their attentions to these threats. AIS, as a telecoms operator perceived as a purveyor of digital technology and internet usage, has an undeniable role in promoting cyber wellness and online safety and has the ability to play a part in promoting digital technology usage that is beneficial to the economy and society. By shaping appropriate digital era behaviors in Thailand, AIS can curtail online dangers, in turn supporting the telecommunications business to grow, reduce threats to the company's own reputation and foster consumer loyalty to the AIS brand. Moreover, in tackling these challenges, the company has the opportunity to innovate new products and services for the enhancement of online safety in Thailand.

(103-2)

Management Approach



"Cyber Wellness and Online Safety" is a significant factor toward the sustainability of AIS. The company maintains a Cyber wellness and Online Safety committee that reports directly to its executives in charge of general customers. The body comprises knowledgeable and experienced individuals from the realms of market and service development, systems engineering, telecommunications security and user information protection, corporate public relations and corporate brand management, who meet quarterly to develop and expand projects. AIS is determined to protect the Thai people from cyberthreats as well as to promote online safety and focuses on vulnerable groups of youths. Its three main strategies under the "Aunjai CYBER" program includes digital quotient promotion, digital tools for cyber protection and promotion of awareness against the potential dangers and impacts of the internet and technology.



▲ AIS joined hands with partners to build healthy online space for Thais



▲ Somchai Lertsutiwong, CEO-AIS and school kids from Aunjai CYBER program



▲ Somchai Lertsutiwong, CEO-AIS talked about an importance of a cyber wellness program



▲ Somchai Lertsutiwong, CEO-AIS and Dash Badcock from Google



▲ Somchai Lertsutiwong, CEO-AIS and Yuhyun Park, DQ Institute

2019 Progress



The year 2019 saw AIS keenly promoting cyber wellness and online safety, declaring a vision to work with partners in the educational sector, child and adolescent psychology experts and non-profit organizations to drive forth its Aunjai CYBER program towards effectively engaging with target groups. The results of these efforts are as follows:

Digital Quotient Promotion (Network Educator)

AIS joined hands with DQ Institute to formulate a Thai language Digital Intelligence Quotient (DQ) course consisting of a test and online lessons measuring and building eight DQ skills among children aged 8–12 years, providing them the necessary knowledge to productively traverse the online world and internet. The project received measuring metrics for digital proficiency from world-class organizations World Economic Forum, Organization for Economic Co-operation and Development (OECD) and IEEE Standards Association (IEEE) and was disseminated to over 110 countries worldwide. AIS also collaborated with Thai educational institutions to instil knowledge and understanding in Thai youths using the courses. AIS in 2019, put together the Thai language DQ Test and DQ World collection of online DQ courses to build knowledge and understanding among Thai children. The company also piloted a program aimed at working with primary school teachers to enhance the digital knowledge and skills of students aged 8–12 years using its online DQ course. Implemented in 24 schools, over 3,100 students participated in the program and provided an opportunity to evaluate the efficacy of the lessons for Thai schools and youths.



More information on the DQ course at
<https://www.ais.co.th/networkforthais/en/DQ.html>

Digital Tools for Cyber Protection (Network Protector)

In 2019, AIS launched the network-based security solution AIS Secure Net to assist in effectively reaching customers at risk from cyberthreats by working instantly without the need for an application download. Moreover, the company partnered with Google to promote use of its Family Link application, aiding guardians in training their children on appropriate internet usage. By the end of 2019, AIS Secure Net had over 47,600 users and Family Link more than 5,673,900 users.



AIS Secure Net is a protection and notification system against cyberthreats such as virus-infected websites and malware as well as an online filter for children and adolescents able to protect against pornography, narcotics, gambling, etc. built into the AIS internet network to avoid the need to download an application. The service is divided into two types based on user requirements, namely; AIS Secure Net for general users and AIS Secure Net Kids for children 5-12 years in age.

Protection And Notification System Against Cyberthreats



**Notify & Block
Virus Or Malware**



**Notify & Block
Inappropriate/Scam Websites**



**Access
Usage Report**



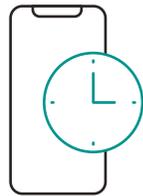
Further details at
<https://www.ais.co.th/networkforthais/en/secure-net.html>



Family Link is an application that allows guardians to manage the safe usage of their children's smartphones with cooperation from Google. The application trains children in appropriate smartphone usage with functions such as phone call limitation and reports, new application installment management, website access and location monitoring, all together creating a constructive safety barrier around a child's digital life.



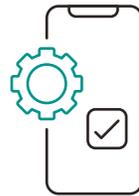
Manage the safe usage of children's smartphones



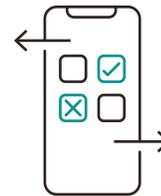
Screen Time Management



Approve or Deny New Application Installation



Oversee Application Installation



Website Browsing



Oversee Phone Usage Report



View Children's Current Location



Further details at
<https://www.ais.co.th/networkforthais/en/family-link.html>



Aunjai CYBER Experience Day



AIS organized workshops in Thailand's central, north, northeast and southern regions throughout 2019 for primary school teachers with the purpose of increasing awareness towards cyberthreats against youths and teacher participation in immunizing students. Experts in child psychology and courses on developing DQ as well as cyberthreat protection tools AIS Secure Net and Family Link were utilized alongside the launching of regional hotlines for teachers with queries about the online courses. Over 678 teachers and representatives from 354 schools took part.

In 2020, AIS plans to continually drive forward its Aunjai CYBER program, introducing its DQ skills to new schools and expanding coverage of AIS Secure Net from mobile network users to home internet users for even greater protection against cyberthreats.

While originally targeting enhancing cyber wellness and online safety for 500,000 people by the year 2021, through its Aunjai CYBER program, especially Family Link, which reached over 6,400,000 users, and through usage of its digital tools and participation in its DQ projects, AIS was able to achieve that goal in the year 2019. AIS has thus recalibrated its targets in line with its mission to provide cyber wellness and online safety to the Thai people for increased clarity and even greater challenge. The new targets are as follows:

	Unit	2019	2022 Target
Digital Quotient Promotion			
Schools joining Aunjai CYBER program	schools	378	2,000
Digital Tools Against Cyberthreats			
AIS Secure Net and/or Family Link Users	users	5,721,500	6,400,000



Sustainability Performance Environment

(GRI 302, GRI 305)

Emissions

Reducing GHG emissions and utilize renewable energy in most possible extent in our operation

(GRI 305-5)

Targets 2023



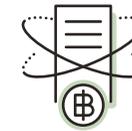
1. Reduce GHG emissions intensity as calculated from the ratio of direct (GHG scope 1) and indirect (GHG scope 2) emissions to data traffic (tCO2e/terabit or ton carbon dioxide equivalent per terabit) by 90% compared to the baseline in 2015.
2. Increase renewable energy usage to 5% of total energy consumption compared to 0.06% in 2018.

Significant Improvements in 2019

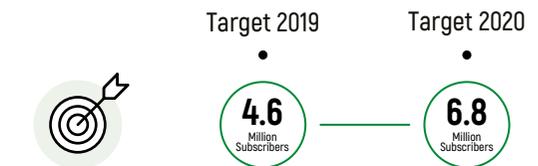


1. Enhanced energy efficiency of the telecommunications network by installing several pieces of collaborative remote multi-mode radio units and upgrading power supplies as well as by expanding the energy saving Virtual Machine Server, all together cutting GHG emissions by 10,553 tCO2e per year.
2. Received ISO14001:2015 Environmental Management Standards cerification for two data centers.
3. Reduced paper use by encouraging 4.2 million customers to receive E-bills in the place of bills sent through traditional post.

Electronic Bill Adoption



E-Bill Subscribers





(GRI 103-1)

Challenges & Opportunities



The issue of climate change has only grown in importance and urgency at both the national and global levels in recent times. International, state, private and consumer organizations have all supported cooperation and pushed forward measures to reduce greenhouse gas emissions (GHG emissions) in line with the Paris Agreement at 2015 United Nations Climate Change Conference (COP21) limiting the average global temperature increase to no more than 2 degrees Celsius above pre-industrial level along with the Global System for Mobile Communications Association (GSMA) setting a Net-Zero GHG Emissions target for achievement within 2050. All of this has taken place as the United Nations' Intergovernmental Panel on Climate Change (IPCC) issued a warning over the possible impact of natural disasters that would be set off by the Earth's average temperature rising just another 1.5 degrees Celsius. Being a digital life service provider, AIS is aware of the challenges and opportunities to its business from the aforementioned issues. Apart from policy and legal challenges, AIS must also consider the risks from natural occurrences that are only growing more severe are more difficult to predict, as they pose a threat to its network and its users, especially during this age

of digital technology in which communication is a major necessity for economic growth and social normality. AIS has begun expanding its expertise in order to develop ICT services with reduced GHG emissions as well as a system for analyzing and alerting against natural disasters to mitigate impacts that may stem from climate change towards its customers, operators and society in general. Determined to reduce energy consumption, which is a major cause of GHG emissions, and to prepare accordingly to handle climate change, AIS sees positives for its capital structure and reduce risk to its business in the long term.

(GRI 103-2)

Management Approach



Being a digital life service provider, AIS is acutely aware of its responsibility to society to use its capabilities and innovations to aid in remedying the issue of climate change. AIS has committed itself to reducing greenhouse gases, continually improving its energy efficiency and supporting renewable energy both in its operations and products as well as encouraging its operators, trade partners and equipment manufacturers to play a part in its sustainable business goals. Towards these commitments, AIS has set short, medium and long term goals for reducing greenhouse gas emissions with the head of its technology executives tasked with carrying out the effort and implementing environmental management across the organization, from its core business to its auxiliary endeavors. A team of environmental experts provides a quarterly report to the Chief Technology Officer (CTO) to inform actions such as setting indexes for performance. The chief also monitors regulations, measures and relevant technological trends to constantly improve the environmental management plan. A report on environmental efforts is presented to Sustainability Development Committee and Board of Directors at least once a year.

AIS maintains an environmental policy approved by its Board of Directors with the objective to support environmental sustainability.

- Evaluate, control, manage and track results for the purpose of reducing overall impacts on the environment.
- Adhere to laws and regulations concerning the environment.
- Take steps to ensure the network and operations are resilient and will remain in service even in times of harsh weather.



Read more on the Environmental Policy at <http://sustainability.ais.co.th/storage/sustainability-priorities/emissions/ais-environmental-policy-en.pdf> or scan the QR code

(GRI 103-3)

2019 Progress



AIS is committed to its mission of playing a part in combating global warming and carries out various projects to reduce GHG emissions, including, enhancing the energy efficiency of its telecommunications network and data centers, utilizing alternative energy and reducing paper usage. Progress made in 2019 is as follows:

1. Energy Efficiency: AIS enhanced the energy efficiency of its network by installing collaborative multi-mode remote radios supporting 2G, 3G and 4G in one unit to cut the energy consumption that would result from individual units for each generation. So far, the company has installed 6,000 such units, cutting GHG emissions by 9,770 tCO₂e per year. It also upgraded power rectifiers at substations for greater efficiency and lower energy consumption, so far installing 300 rectifiers for a reduction in GHG emissions by 122 tCO₂e per year. Moreover, AIS installed a Virtual Machine Server, which simulates server equipment functions via software run in the Cloud, allowing it to shut down a portion of its servers, cutting costs and reducing data center energy consumption by 1,135 MWh per year for a reduction in GHG emissions by 661 tCO₂e per year.



2. Use of Renewable Energy: From 2000 through to 2019, AIS has commenced an alternative energy program based on solar energy, which has generated a total of 3,489 MWh. In 2019, the program produced an additional 823 MWh from the previous year and marked the start of solar panel installations at 3,000 base stations and 4 data centers expected to complete in 2020, adding an estimated 6.32 MWh per year from solar power, equivalent to a reduction in GHG emissions by 6,340 tCO₂e.



3. Reduction of Paper Usage: AIS utilizes digital technology for a variety of its transactions whether internally, with its business partners or even with its customers, reducing paper usage and travel while also increasing efficiency and convenience for customers

- Promoting use of the My AIS application, which allows for viewing of prices, payment, registration and self-inspection of packages, continual growth in adoption has been achieved. My AIS is currently used by 8.2 million subscribers or 20% of total subscribers. A total 4.2 million subscribers or 46% of postpaid

subscribers switched from receiving their bills by traditional post to an electronic bill, resulting in a reduction of paper usage by 100,800,000 sheets and of GHG emissions by 2,520 tCO₂e per year.

- Digital systems for base station maintenance service acceptance have reduced paper usage and travel. Such systems have been implemented at over 40,500 base stations, equivalent to a reduction in paper usage by 3,442,500 sheets and of GHG emission by 86 tCO₂e per year.

4. Development of the Environmental Management System (EMS):

The Environmental Management System (EMS) at two of our nine data centers received the ISO14001:2015 standard verification and certificate from independent inspectors. AIS has been adhering to the standards to enhance the efficiency of its environmental management in terms of energy management, water management and waste management, keeping also to relevant laws and regulations and the company's own sustainable business guidelines.

In 2020, AIS plans to carry out further actions to reduce its GHG emissions, utilize solar power and build on the aforementioned programs using a budget of 258 million Baht. Apart from its solar energy program, energy efficiency development and push for e-bills adoption, AIS will be adding a Green Data Center designed and built to be a modular data center allowing for more efficient expansion, lower energy consumption and reduced GHG emission. The prefabricated data center resembles in concept with a container equipped with a self-contained power supply and cooling set only as necessary with room for further expansion by stacking further containers as needed. The center will also feature a more efficient ventilation and cooling system to cut energy consumption from heat dispersion as compared to a Conventional Data Center.



Furthermore, as the world prepares to enter the era of 5G, AIS has made preparations to accommodate 5G technology and the increased energy requirement from its high radio frequency and subsequent need for higher number of base stations compared to 3G and 4G. AIS has prioritized acquiring high performance and energy efficient equipment for its 5G network, limiting GHG emissions while

embracing the new technology so that it may grow the economy and meet the needs of digital era consumers.

In 2019, AIS GHG intensity reduced 77% from the base year 2015, and higher than the 2023 target of 75%. Thus, AIS has revised the target in line with its mission to reduce GHG emissions and increase renewable energy use as follows:

- Reduce GHG emission intensity in 2020 by 80% compared to the baseline set in 2015 and by 90% in 2023. GHG emission intensity is calculated by the ratio of direct and indirect GHG emission per Terabit of data traffic (tCO2e per Terabit).
- Increase renewable energy use to 2% of total energy consumption in 2020 and to 5% in 2023.



Performance tables



	2016	2017	2018	2019
GHG Emission				
Total GHG emissions (Scope 1 and 2)	459,819 tCO2e	519,950 tCO2e	525,451 tCO2e	615,407 tCO2e
				
• Direct GHG emissions (Scope 1) ^{(GRI 305-1) 1}	12,965 tCO2e	11,431 tCO2e	10,687 tCO2e	11,177 tCO2e
• Indirect GHG emissions (Scope 2) ^{(GRI 305-2) 2}	446,854 tCO2e	508,519 tCO2e	514,764 tCO2e	604,230 tCO2e
GHG Intensity^{(GRI 305-4) 3}	0.072 % tCO2e / Terabit	0.041 % tCO2e / Terabit	0.025 % tCO2e / Terabit	0.020 % tCO2e / Terabit
Energy				
Total Energy Consumption	807,713 MWh	911,827 MWh	919,900 MWh	1,082,823 MWh
				
	2,908 Terajoule ^a	3,283 Terajoule	3,311 Terajoule	3,898 Terajoule
Total non-renewable energy consumption	807,380 MWh	911,372 MWh	919,320 MWh	1,081,960 MWh
	2,907 Terajoule	3,281 Terajoule	3,309 Terajoule	3,895 Terajoule
• Direct energy consumption: Fuel and other ⁵	39,722 MWh	37,778 MWh	35,000 MWh	36,706 MWh
	143 Terajoule	136 Terajoule	126 Terajoule	132 Terajoule

	2016	2017	2018	2019
Energy				
• Indirect energy consumption: Electricity ⁶	767,658 MWh	873,594 MWh	884,320 MWh	1,045,254 MWh
	2,764 Terajoule	3,145 Terajoule	3,183 Terajoule	3,763 Terajoule
Energy from renewable sources⁷	332.88 MWh	454.73 MWh	580.38 MWh	862.91 MWh
				
	1.1984 Terajoule	1.637 Terajoule	2.0894 Terajoule	3.1068 Terajoule
% Energy from renewable sources	0.04 %	0.05 %	0.06 %	0.08 %
Power Usage Effectiveness (PUE) at Data Centers⁸	1.8 Unit	1.88 Unit	1.61 Unit	1.61 Unit
Water^(GRI 303)				
Total Water Use^{(GRI 303-1) (2016 version)}	117,843 Cubic Meters	151,559 Cubic Meters	158,542 Cubic Meters	175,895 Cubic Meters
				
Municipal Water⁹	117,843 Cubic Meters	148,377 Cubic Meters	154,933 Cubic Meters	172,463 Cubic Meters
Ground Water¹⁰	0 Cubic Meters	3,182 Cubic Meters	3,609 Cubic Meters	3,432 Cubic Meters

Details of note 1-10 are on page 87



[GRI 306-2]

Waste Management

Reduce & recycle waste from operations as well as encourage customers to dispose E-waste properly

[GRI 305-5]

Targets 2022



1. Collect 3 million units of obsolete mobile and related electronic waste from consumers for proper recycling
2. Reduce non-recyclable E-waste from AIS services and operations from 5% of total waste in 2018 to 3% in 2022.

Significant Improvements in 2019



AIS maintains a policy of being a part of the solution to environmental problems stemming from its business operations and has studied approaches as well as set short, medium and long term goals for becoming a central point for the collection of E-waste related to the use of mobile phones so that they may be recycled or properly terminated. In 2019, AIS declared a key mission would be improving the environmental quality of life for Thai citizens under the theme "Mission Green 2020", campaigning for greater awareness of environmental issues and encouraging the public to drop off their E-waste at AIS Shops. The company applied its communication and digital technology capabilities to the project and worked to expand the undertaking to its partners in the private and public sectors, seeking nationwide effort.

Targeting collecting 9 million pieces of E-waste collected by the year 2021, trials of the effort in 2019 uncovered areas in need of improvement, including collection and transport, which require safety considerations and better defined standards. AIS is also considering collaborating with partners with an expertise in logistics and able to set long term plans. Due to these factors, AIS has decided to adjust its target towards greater practicality, expecting a conclusion to be reached in the first quarter of 2020.



[GRI 103-1]

Challenges & Opportunities



In this age of rapid communication technology development bringing about vast growth in mobile phone and computer products and with digital brands all presenting modern and novel gadgets, consumers have been compelled to change their digital devices at a faster rate, resulting in an explosion of E-waste. The Global E-waste Monitor 2017 report by United Nations University (UNU) posits that the world will be faced with over 50 million metric tons of E-waste by the year 2021 with the supply to grow by a rate of 4% annually from that point onward. Kasikorn Research reported E-waste in Thailand between 2013 and 2016 reached 380,605 tons per year, growing at a rate of 2.2 % annually, noting only 7.1% of the total entered into the recycling process. Awareness of the dangers of E-waste in Thailand is also relatively low, especially concerning the hazardous substances contained in electronic devices, which pose a physical threat when kept in the home and an environmental threat when placed in landfills.

AIS, as the largest telecommunications service provider in Thailand and a major retailer of smartphones and electronic gadgets, acknowledges that taking part in the effort to protect the environment by reducing and recycling E-waste must be one of its missions. The company has also committed to spreading awareness and knowledge to the Thai people about proper disposal of E-waste and made preparations to comply with forthcoming laws, such as the Electronic Appliance and Devices Disposal Act, which is expected to place the onus of terminating E-waste from products and services on business operators. The AIS mission includes publicizing the company's social and environmental responsibility and mitigating threats to its reputation.

[GRI 103-2]

Management Approach



AIS, as a telecommunications service provider and retailer of mobile phone related electronics, is committed to mitigating the environmental impact from its business operations and emphasizes developing processes to reduce waste, increasing the recycling of waste and promoting the Thai people take part in properly disposing of E-waste.

AIS maintains a Waste Stewardship Team whose goal of the team is to reduce environmental impacts from resource usage and waste from supply chain operations. The team comprises representatives from the Purchasing, Marketing, Engineering and Environment departments and reports to the Sustainability Development Committee on a quarterly basis.

Resolute in being an environmentally responsible organization, AIS maintains the following policies and activities for reducing its negative impact on the environment:



Internal operations

Management of E-waste and waste from operations

The Engineering and Environment departments were tasked with evaluating electronics equipment and separating them for recycling and proper disposal. The approach reduces the amount of E-waste that can impact the environment and builds awareness among AIS staff towards environmentally-friendly behaviors. Personnel are also encouraged to separate office waste through assistance to ease the process and the provision of knowledge. They are also advised to reduce behaviors that result in office waste to further do away with resource consumption and environmentally-harmful refuse.

For E-waste generate by its business network such as batteries, power supplies, base station equipment and cables, AIS adheres to a Life Cycle Perspective policy that

starts by procuring and employing only environmentally-friendly and energy efficient equipment manufactured from the most possible recyclable materials. This approach is part of AIS's procurement specifications under the energy and environment categories. Once equipment is discontinued, a process of separation takes place to discern what can be reused, refurbished or recycled. AIS chose partners authorized to use the elements from its recycled waste from a bidding session centered on proper and environmentally-friendly recycling.

Green Procurement

AIS observes a "Green Procurement" policy as a mechanism for reducing resource consumption and the production of waste and pollution. The policy includes doing away with hazardous substances, reducing greenhouse gas emissions and supporting internal units to understand principles and regulations on green procurement.

External operations

Management of E-Waste

AIS acknowledges the danger of substances found in E-waste both towards the health of the Thai people and the environment. The company maintains policies and operations to mitigate environmental impacts including strategies for promoting proper E-waste disposal and a campaign for the Thai people to better understand the dangers of E-waste.

(GRI 103-3)

2019 Progress



Management of E-waste and waste from operations

The total amount of garbage and waste produced by AIS's business operations in 2019 dropped 34% from 2018. Non-hazardous waste made up 96.89% of the total, mostly comprised of office refuse. Hazardous waste made up 3.11% of the total and included mostly E-waste from network operations. The majority of electronic and network equipment remained operational in 2019 so there was no necessity for replacement. Maintenance to extend the life of equipment without affecting service also helped to reduce E-waste this year compared with the previous year.

Moreover, AIS promotes internal activities and campaigns for its staff to realize the importance of reducing negative environmental impacts. The goal of the effort is for staff operating in AIS offices to change their behaviors concerning resource use and to properly sort waste in their daily lives.

Reduction of refuse from E-Waste recycling



Communication emphasizes understanding of proper waste sorting by promoting knowledge and practice.



All Bangkok offices have waste separating bins to encourage behavioral changes. Staff are encouraged to reduce their use of single-use plastic bags with the "Bag for Sharing" program, which produces bags from recycled vinyl signs and provides them for repeated use around the office.



Management of E-waste

Dispose your E-waste with AIS program

Commencing and announcing official targets for its program, AIS volunteered to become a center for the collection of E-waste from users, providing them convenience by allowing for disposal of electronic products at all AIS Shops across the nation. Digital equipment was installed in the collection bins at the shops to track the deposit of E-waste with results displayed at www.ewastethailand.com. All of the waste was forwarded to disposal facilities that adhere to international standards. Collected waste was divided into 2 categories, recyclable and in need of termination. The factories report their operations back to AIS for evaluation and assurance that the undertaking is no adversely affecting the environment.

The program was expanded to partners in both the public and private sectors with the intent to promote awareness of the health and environmental dangers of substances that can leak out of E-waste if not properly disposed. Partners included Thammasat University, Khon Kaen University and Thailand Responsible Business Network (TRBN), who were assembled under the "No Waste Vibhavadi" program and engaged in the "Green Phahonyothin" activity, in which they all joined in campaigning to spread knowledge about E-waste to the public.

A full scale communication campaign was launched with a focus on building understanding among Thai people on the physical dangers of keeping expired E-waste at home and promoting knowledge on recycling and proper disposal. The goal was to have Thai people be more aware of the environmental threat E-waste poses and persuade them to join in the effort to drop off E-waste with AIS. The target is to collect 100,000 pieces of E-waste within 2020.

Performance (October – December 2019)

	Pieces	Weight (kg.)
Used Mobile Phone	619	67.58
Accessory	380	230.80
Battery	1,320	209.31
Total	2,319 Pieces	507.69 kg.

Green Procurement

AIS has begun setting environmental criteria and requirements for bidding and plans to adopt a Green Purchasing Guideline. Action taken by procurement offices in 2019 under the Green Procurement program were as follows:

1. Set clear Green Procurement requirements in line with international standards for all products and services (Reference <https://aisprocurement.ais.co.th/>)
2. Communicated Green Procurement policies to all sellers covering joint operations and expectations of support via <https://aisprocurement.ais.co.th> and by Email.
3. Adapted Green Procurement principles, methods and practices to the purchasing process starting with "durable articles". Sellers were provided with details of desired environmentally-friendly products at the quotation stage.
4. Organized Green Procurement training using environmental academics from the Department of Pollution Control of the Ministry of Natural Resources and Environment to ensure compliance with set principles.

Performance Table



Waste ^(GRI-306) Total Waste

By Type



Non-hazardous waste¹¹



Hazardous waste¹²



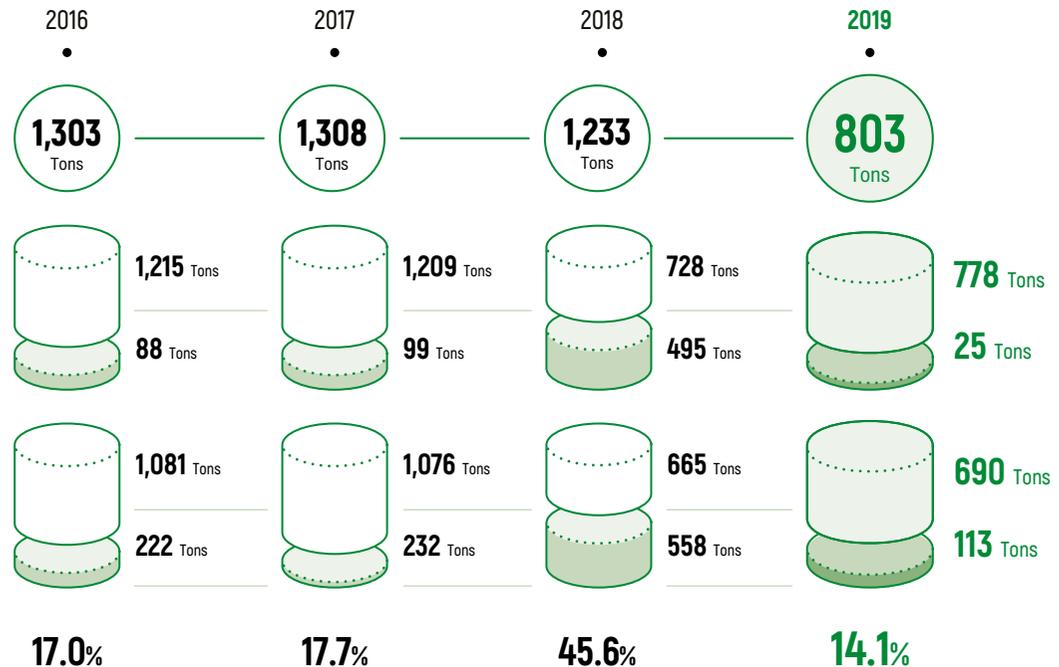
Landfill



Recycle



% Recycled



Details of note 11-12 are on page 88



Remarks:

1. GHG emissions result from the burning of fuels, vehicles, power generators, coolant leakage and carbon dioxide type fire extinguishers. The increase in direct GHG emissions (Scope 1) in 2019, in part, were a result of increased installations and expansion of the network nationwide as well as adding the GHG emissions of CS Loxinfo, a subsidiary of AIS, to the count for the first time. Emission factor and Global Warming Potential (GWP) values used in the calculation are based on a 100-year time frame indicated in the Fourth Assessment Report (AR4) used by the Inter-Government Panel on Climate Change (IPCC) guidelines, Vol.2. The GHG Inventory Calculation tool is from the Thailand Greenhouse Gas Management Organization (TGO). The consolidation approach used in this report is 'operational control'.
2. The change of GHG Scope 2 in 2019, in part, is a result of increased installations and expansion of the network nationwide as well as adding the GHG emissions of CS Loxinfo, a subsidiary of AIS, to the count for the first time. The source of emission factor used in the calculation is referenced from 'Thailand Grid Mix Electricity LCI Database 2552 (2009)'. Consolidation approach use in this report is 'operational control'.^(GRI 305-5)

3. GHG Intensity is the ratio of GHG per data traffic generated the whole year. It is specific for telecommunication industry which shows efficiency of the emission by stating how much GHG is emitted for every terabit of generated traffic.^(GRI 305-4)
4. 1 MWh = 0.0036 Terajoule
5. Direct energy consumption results from fuel for operation vehicles and backup generators. The monthly collected data in liters are derived to obtain energy by a conversion factor provided by Department of Alternative Energy Development and Efficiency (DEDE).
6. Indirect energy consumption is from electricity used in the business including network operations. Data is compiled to total MWh of usage through either Metropolitan or Provincial Electricity Authority billing, which is recorded in the system.
7. Energy from renewable source is from solar panels installed in a several substations and the solar-rooftops of data centers and call centers. Solar energy from solar-rooftops is actually recorded through the system while energy from substations is calculated from solar capacity of each site using a formula as below:

$$E = A \times r \times H \times PR$$

Where

- E = Solar energy produced in one year (KWh)
- A = The size of the solar panel (cubic meters) [standardly 8 m³ for every one kilowatt of a polycrystalline silicone solar panel]
- r = Solar energy to electricity conversion efficiency of the panel (%) (13% for a polycrystalline silicone solar panel)
- H = Average solar radiation energy (KWh per cubic meter for an area in Thailand)
- PR = Overall efficiency percentage including in-system energy loss (General PR for solar energy systems is 75%)

For each year, the amount of energy from solar panels utilized by each substation can be calculated from the proportion of active energy usage in that year to the generation deciphered according to the above formula. In some cases, solar panels may have only been recently installed at the substation (thus were not in use throughout the year).



8. Power Usage Effectiveness (PUE) is a metric to measure efficiency of data centers. PUE is defined as total energy used in a data center divided by the usage of the IT equipment load that such data center serves.
9. Municipal Water is tap water supplied by Water Authorities, either metropolitan or provincial. Total quantity of municipal water usage has been calculated by dividing the total cost of water purchased from both authorities with average water price per m³.
10. Ground Water is water found underground in the cracks and spaces in soil, sand and rock. It is pumped up and used where tap water is not available. We have one data center using ground water and measure its usage every month.
11. Non-hazardous waste is defined as office waste or municipal waste which does not include those listed in the latest announcement of the Pollution Control Department (PCD) and Department of Industrial Works (DIW). Typically, they are general office waste, organic waste and some are recyclable waste. The calculation methodology is to weight quantity of office waste from AIS Tower 1 and Tower 2, which collected by municipal government agency sent to landfill. The estimation average waste quantity per staff generated was multiply with the total number of staffs at the end of FY2019 to obtain the total weight of non-hazardous waste. Another type of non-hazardous waste is 'recyclable' which is also undergone weight sampling to find average waste per staff and then the total weight of the waste. This 'recyclable' waste will finally go to the recycling disposal process.
12. Hazardous waste in our industry is defined to coincide with international standards and the state's definition (Pollution Control Department, Department of Industrial Works and other relevant regulations). Within the telecommunications industry, most hazardous waste is E-Waste, including network equipment, batteries and cellular phones, a minority is waste from the office including batteries and printer cartridges. The weight of E-Waste is collected for the company's resource management system, which records decommissioned equipment and carries out disposal. Average estimates of recycled versus landfilled (leftover) E-Waste is derived from contractors who carry out authorized disposal.
13. Power Usage Effectiveness (PUE) of data centers, water and waste do not include data from CS Loxinfo Plc.



(102-48, 102-49, 102-50, 102-51, 102-52, 102-53, 102-54)

About this Report

Objectives



AIS compiled this report on sustainable business development to present information on its policies, strategies and operations in the the three areas of economy, society and environment with an emphasis on matters pertinent to the business and continued growth of AIS and AIS Group, which observe 7 strategies for enhancing business sustainability each year.

Scope and Boundary



Information presented in this sustainable business development report encompasses operations between 1st January 2019 and 31st December 2019 using the Global Reporting Initiative (GRI) method of reporting for a 7th year. The company's sustainable business development report for 2019 using the Core GRI Standard and presented operations following the highest criteria of the UN Global Compact (UNGC). Information was divided as follows:

Economy

Covers AIS and AIS Group subsidiary operations excluding CS Loxinfo Plc. (CSL) ¹

Society

Covers AIS and AIS Group subsidiary operations excluding CS Loxinfo Plc. (CSL) ¹

Environment

Covers AIS and AIS Group subsidiary operations including CS Loxinfo Plc. (CSL) ¹ the environment report of CSL covers GHG emissions, Energy consumption, but excludes PUE, Water and Waste.

Information acquired from directly and indirectly inquiring stakeholders is also used.

In-depth information on business practices, management structures, good governance, risk management, internal controls and auditing, rewards and important events in the past year, including operational returns are presented in the Annual Report for 2019, which is available in print and at <http://investor.ais.co.th>

¹ In 2019, CS Loxinfo Plc. (CSL) contributed 0.9% of total revenue. The report scope, excluding CSL, represented 99.1% of total revenue.



Validation



1. Numerical data related to economic operations apply the same data as published in annual financial statements for 2019, which were audited by an independent external auditor.

2. Data regarding environmental performance and employees training was audited and verified according to the GRI Standard by independent auditor SGS (Thailand) Co., Ltd. (Details are presented on pages 95)

Inquiry Channel



Advanced Info Service Plc.
414, AIS Building 1 Fl. 22, Paholyothin Rd.
Samsen Nai, Phayathai District, Bangkok 10400

Tel.: (66) 2029 5117

Fax: (66) 2029 5165

Email: AISSustainability@ais.co.th

Process for Defining Report Quality



1. **Balance** AIS is committed to presenting balanced information so that readers may extrapolate an accurate assessment of the company's sustainability operations.

2. **Comparability** Information from prior operation is presented to display changes and development in the company.

3. **Accuracy** Information presented in this report is reviewed and verified to ensure accuracy and completeness.

4. **Timeliness** This report is compiled annually so stakeholders may evaluate the sustainability of AIS operations in a predictable timeframe.

5. **Clarity** Information is presented in a clear and accessible manner.

6. **Reliability** An internal accuracy review process is used so readers may be confident that all information is accurate, transparent and verifiable.



GRI Content Index

GRI STANDARD	DISCLOSURE	PAGE NUMBER (S) AND/OR URL (S)	OMISSIONS/REMARK	SDGs	UNGC
GENERAL DISCLOSURES					
GRI 102: General Disclosures 2016 (Organizational Profile)	102-1 Name of the organization	5, 90	-	-	-
	102-2 Activities, brands, products, and services	5-7	Remark: AIS did not sell any banned or disputed products in 2019	-	-
	102-3 Location of headquarters	90	-	-	-
	102-4 Location of operations	5-7	-	-	-
	102-5 Ownership and legal form	8	-	-	-
	102-6 Markets served	6-7	-	-	-
	102-7 Scale of the organization	6-7, 54	-	-	-
	102-8 Information on employees and other workers	54-55	Remark: No significant variation in employment numbers and changes during the reporting year.	8	-
	102-9 Supply Chain	-	Remark: Refer to AIS Annual Report 2019, page 30-31	-	2
	102-10 Significant changes to the organization and its supply chain	-	Remark: No significant changes (i.e. location, operation, share capital structure, supply chain, etc.) during the reporting year.	-	2
	102-11 Precautionary principle or approach	-	Remark: Refer to AIS Annual Report 2019, page 40-44	-	-
	102-12 External Initiatives	4, 11-12	-	-	-
	102-13 Membership of association	8	-	-	-
GRI 102: General Disclosures 2016 (Strategy)	102-14 Statement from senior decision-maker	3-4	-	-	19
	102-15 Key impacts, risks, and opportunities	-	Remark: Refer to AIS AIS Annual Report 2019, page 40-44	-	19
GRI 102: General Disclosures 2016 (Ethics and Integrity)	102-16 Values, principles, standards, and norms of behaviour	-	http://www.ais.co.th/sustainability/en/ais-business-code-of-ethics-cg.html	16	12-14
	102-17 Mechanisms for advice and concerns about ethics	-	Remark: Refer to AIS Annual Report 2019, page 81-83	16	12-14



GRI STANDARD	DISCLOSURE	PAGE NUMBER (S) AND/OR URL (S)	OMISSIONS/REMARK	SDGs	UNGC
GRI 102: General Disclosures 2016 (Governance)	102-18 Governance structure	-	Remark: Refer to AIS Annual Report 2019, page 57	-	1, 20
	102-20 Executive-level responsibility for economic, environmental, and social topics	-	Remark: Refer to AIS Annual Report 2019, page 57, 64	-	1, 20
	102-21 Consulting stakeholders on economic, environmental, and social topics	10, 14, 90	-	-	1, 20
	102-30 Effectiveness of risk management processes	-	Remark: Refer to AIS Annual Report 2019, page 40-44	-	1, 20
	102-31 Review of economic, environmental, and social topics	10	-	-	1, 20
	102-32 Highest governance body's role in sustainability reporting	14	-	-	1, 20
	102-33 Communicating critical concerns	14	Remark: Refer to AIS Annual Report 2019, page 74-75	-	1, 20
GRI 102: General Disclosures 2016 (Stakeholder Engagement)	102-40 List of stakeholder groups	14	-	-	-
	102-41 Collective bargaining agreements	-	Reporting on this indicator is not applicable because AIS does not have trade union. AIS respects and fully supports the rights of employee in freedom of association in accordance with laws.	-	21
	102-42 Identifying and selecting stakeholders	14	-	8	-
	102-43 Approach to stakeholder engagement	14	-	-	21
	102-44 Key topics and concerns raised	14	-	-	21
GRI 102: General Disclosures 2016 (Reporting Practice)	102-45 Entities included in the consolidated financial statements	-	Remark: Refer to the entities provided in AIS Annual Report 2019, page 140 including Advanced Info Service Plc.	-	-
	102-46 Defining report content and topic Boundaries	9	-	-	-
	102-47 List of material topics	9-10	-	-	-
	102-48 Restatements of information	-	Remark: No restatement in 2018	-	-
	102-49 Changes in reporting	-	Remark: No significant changes in scope and boundary from previous reporting periods.	-	-
	102-50 Reporting period	89	-	-	-
	102-51 Date of most recent report	89	Remark: Most recent previous report is Annual Report and Sustainability Report 2019.	-	-
	102-52 Reporting cycle	89	Remark: AIS publishes Sustainability Report annually.	-	-
	102-53 Contact point for questions regarding the report	90	-	-	-
	102-54 Claims of reporting in accordance with the GRI Standards	90	-	-	-
	102-55 GRI content index	91-94	-	-	-
102-56 External assurance	95	-	-	-	



GRI STANDARD	DISCLOSURE	PAGE NUMBER (S) AND/OR URL (S)	OMISSIONS/REMARK	SDGs	UNGC
MATERIALS TOPICS					
Digital innovation					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	20	-	-	-
	103-2 The management approach and its components	20	-	-	-
	103-3 Evaluation of the management approach	21	-	-	-
AIS's own indicator	Number of active partners, with a product and/or service launched in the market on AIS Partner Platform	27	-	-	-
	Revenue from new products and services	27	-	-	-
	Investment in R&D	27	-	-	-
Cyber security & data privacy					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	29	-	-	-
	103-2 The management approach and its components	29	-	-	-
	103-3 Evaluation of the management approach	30	-	-	-
AIS's own indicator	Average network interruption frequency	-	Remark: in 2019 = 0.067	-	-
	Average network interruption duration	-	Remark: in 2019 = 39 minutes	-	-
GRI 418: Customer Privacy	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	36	-	-	-
Social inclusion					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	56	-	-	-
	103-2 The management approach and its components	57	-	-	-
	103-3 Evaluation of the management approach	58-67	-	-	-
GRI 201: Economic Performance	201-1 Direct economic value generated and distributed	38, 67	-	7, 9, 11	-
Cyber wellness & Online safety					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	69	-	-	-
	103-2 The management approach and its components	70	-	-	-
	103-3 Evaluation of the management approach	70-72	-	-	-
AIS's own indicator	Number of subscribers in network-based security service	74	-	16	-
	Number of schools engaged in cyber-wellness & online safety education programs	74	-	16	-



GRI STANDARD	DISCLOSURE	PAGE NUMBER (S) AND/OR URL (S)	OMISSIONS/REMARK	SDGs	UNGC
Human capital development					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	41	-	-	-
	103-2 The management approach and its components	41	-	-	-
	103-3 Evaluation of the management approach	40	-	-	-
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	55	-	8	6-8
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	55	-	4, 8	6-8
	404-2 Programs for upgrading employee skills and transition assistance programs	46	-	8	6-8
	404-3 Percentage of employees receiving regular performance and career development reviews	54	-	5, 8	-
GRI 405: Diversity and Equal Opportunity	405-1 Diversity of governance bodies and employees	94	-	8	6-8
GRI 403: Occupational Health and Safety 2016	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	-	Remark: AIS is under process of data collection and publish in future report	-	-
Emission					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	77	-	-	-
	103-2 The management approach and its components	77	-	-	-
	103-3 Evaluation of the management approach	78	-	-	-
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	80	-	3, 12, 13	9-11
	305-2 Energy indirect (Scope 2) GHG emissions	80	-	3, 12, 13	9-11
	305-4 GHG emissions intensity	80	-	13	9-11
	305-5 Reduction of GHG emissions	81	-	13	9-11
GRI 302: Energy 2016	302-1 Energy consumption within the organization	80	-	7, 8, 12, 13	9-11
GRI 303: Water and Effluents 2016	303-1 Water withdrawal by source	80	-	6	9-11
E-waste					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	82	-	-	-
	103-2 The management approach and its components	82	-	-	-
	103-3 Evaluation of the management approach	83-86	-	-	-
GRI 306: Effluents and Waste 2016	306-2 Waste by type and disposal method	81	Remark: For non-hazardous waste, AIS sorted and disposed waste to local contractors and municipality in accordance to law. For hazardous waste transportation and disposal, AIS sourced contractors who hold license as required by law.	3, 6, 12	9-11

Assurance Statement of Environmental and Social Reporting



ASSURANCE STATEMENT

SGS (THAILAND) LIMITED'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE ADVANCED INFO SERVICE PUBLIC COMPANY LIMITED'S SUSTAINABILITY REPORT FOR 2019

NATURE AND SCOPE OF THE ASSURANCE/VERIFICATION

SGS (Thailand) Limited was commissioned by Advanced Info Service Public Company Limited (hereinafter referenced to as AIS) to conduct an independent assurance of the Sustainability Report year 2019 in the section of Environmental and Human Capital Management (hereinafter referred to as Sustainability Report). The scope of the assurance, based on the SGS Sustainability Report Assurance methodology, included the sampled text, and data in accompanying tables, contained in this report.

The information in the Sustainability Report of AIS and its presentation are the responsibility of the directors or governing body and the management of AIS. SGS (Thailand) Limited has not been involved in the preparation of any of the material included in the Sustainability Report.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of verification with the intention to inform all AIS's stakeholders.

The SGS protocols are based upon internationally recognized guidance, including the Principles contained within the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines (2016) for accuracy and reliability and the guidance on levels of assurance contained within the AA1000 series of standards and guidance for Assurance Providers.

This report has been assured at a moderate level of scrutiny using our protocols for:

- evaluation of content veracity;
- AA1000 Assurance Standard (2008) Moderate evaluation of the report content and supporting management systems against the AA1000 Accountability Principles (2008) and;
- evaluation of the report against the Global Reporting Initiative (GRI) Sustainability Reporting Standards (2016).

The assurance comprised a combination of pre-assurance research, interviews with relevant employees, superintendents, and the management at AIS office, Phaholyothin Rd., Samsen Nai, Phayathai, Bangkok THAILAND 10400, documentation and record review and validation with external bodies and/or stakeholders where relevant. Financial data drawn directly from independently audited financial accounts has not been checked back to source as part of this assurance process.

STATEMENT OF INDEPENDENCE AND COMPETENCE

The SGS Group of companies is the world leader in inspection, testing and verification, operating in more than 140 countries and providing services including management systems and service certification; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS (Thailand) Limited affirm our independence from AIS, being free from bias and conflicts of interest with the organization, its subsidiaries and stakeholders.

The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors experienced in one or more of the following standards; AA1000, GRI, QMS, EMS, SMS, EnMS, Carbon Footprint, Water Footprint, GHG Validation - GHG Verification, Lead auditors and experience on the SRA Assurance service provisions.

VERIFICATION/ ASSURANCE OPINION

On the basis of the methodology described and the verification work performed, we are satisfied that the information and data contained within Sustainability Report verified is accurate, reliable and provides a fair and balanced representation of AIS sustainability activities from 1st January 2019 to 31st December 2019.

The assurance team is on the opinion that the Report can be used by the Reporting Organization's Stakeholders. We believe that the organization has chosen an appropriate level of assurance for this stage in their reporting. In our opinion, the content and reported data of the report meet the requirement of GRI (2016) in accordance with Core option and AA1000 Assurance Standard (2008), moderate level assurance.

AA1000 ACCOUNTABILITY PRINCIPLES (2008) CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

Inclusivity

Customer, society, environment, shareholders, investors, employees and business partners are identified and recognized as the important stakeholders by AIS and communications. AIS communicated with internal and external stakeholders in various ways in the respective divisions and sites. Positioning of sustainability is under the direct control of the management. The communication with stakeholders is continuously implemented in the divisions and sites including the headquarters. For future reporting, AIS may proactively consider having more direct multi-ways involvement of stakeholders during future engagement.

Materiality

AIS has established effective processes for issues determination that are material to the business. Formal review has identified stakeholders. Issues that are material to each group and the report addresses these at an appropriate level to reflect their importance and priority to stakeholders. It is recommended to continuously enhance stakeholders' understanding impacts of AIS.

Responsiveness

The report includes coverage given to stakeholder engagement, as well as the response to the material issues concerned by the stakeholders.

GLOBAL REPORTING INITIATIVE REPORTING GUIDELINES CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

AIS's Sustainability Report year 2019 is prepared in accordance with the core option for GRI Standard (2016) and fulfills all the required content and quality criteria for the identified aspects listed as below;

- GRI 302 – Energy 2016; (302-1 - Energy consumption within the organization)
- GRI 303 – Water 2016; (303-1 – Water withdrawal by source)
- GRI 305 – Emissions 2016; (305-1 - Direct (Scope 1) GHG emissions and 305-2 - Energy indirect (Scope 2) GHG emissions)
- GRI 306 – Effluents and Waste 2016; (306-2 - Waste by type and disposal method)
- GRI 404 – Training and Education 2016; (404-1 - Average hours of training per year per employee)

The material aspects and their boundaries within and outside of the organization are properly defined in accordance with GRI's Reporting Principles for Defining Report Content. Disclosures of identified material aspects, boundaries are correctly located in context report.

It is recommended to have more robust documentation behind the calculations and presented values of the report. The internal documented procedure of each aspect should be routinely update sources of conversion factors and assumptions, data collection and aggregation method for consistency reporting. In addition, the periodic internal audit on the data gathering process and result verification should be established to maintain the system in place. More disclosure on subsidiaries, supply chain management and material aspects are encouraged in future reporting.

Signed:

For and on behalf of SGS (Thailand) Limited

Amnat Pisutsin, General Manager

Bangkok THAILAND

26th February 2020

www.SGS.com





Advanced Info Service Public Company Limited

414 AIS Tower 1,
Phaholyothin Road, Samsen Nai,
Phayathai, Bangkok 10400
Tel : (66) 2029 5000
www.ais.co.th