

# NCC Performance Report 2020

NATIONAL  
COMMUNICATIONS  
COMMISSION



# NCC Performance Report 2020

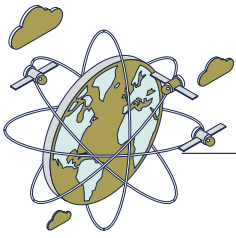
National  
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# Preface

Since COVID-19 began severely affecting nations, the lives of people from all walks of life have been dramatically affected. However, despite the isolation and inconveniences caused by the pandemic, mankind's adaptability has given rise to numerous opportunities and ways of life, such as food deliveries, distance learning and working from home — all of which have been possible thanks to an accessible broadband network infrastructure. As governments and people across the globe increasingly realize the advantages and importance of broadband networks, the digital transformation has been accelerating across both the public and private sectors, proving that the efforts of the National Communications Commission (NCC) in enhancing the digital infrastructure in Taiwan have been worthwhile.

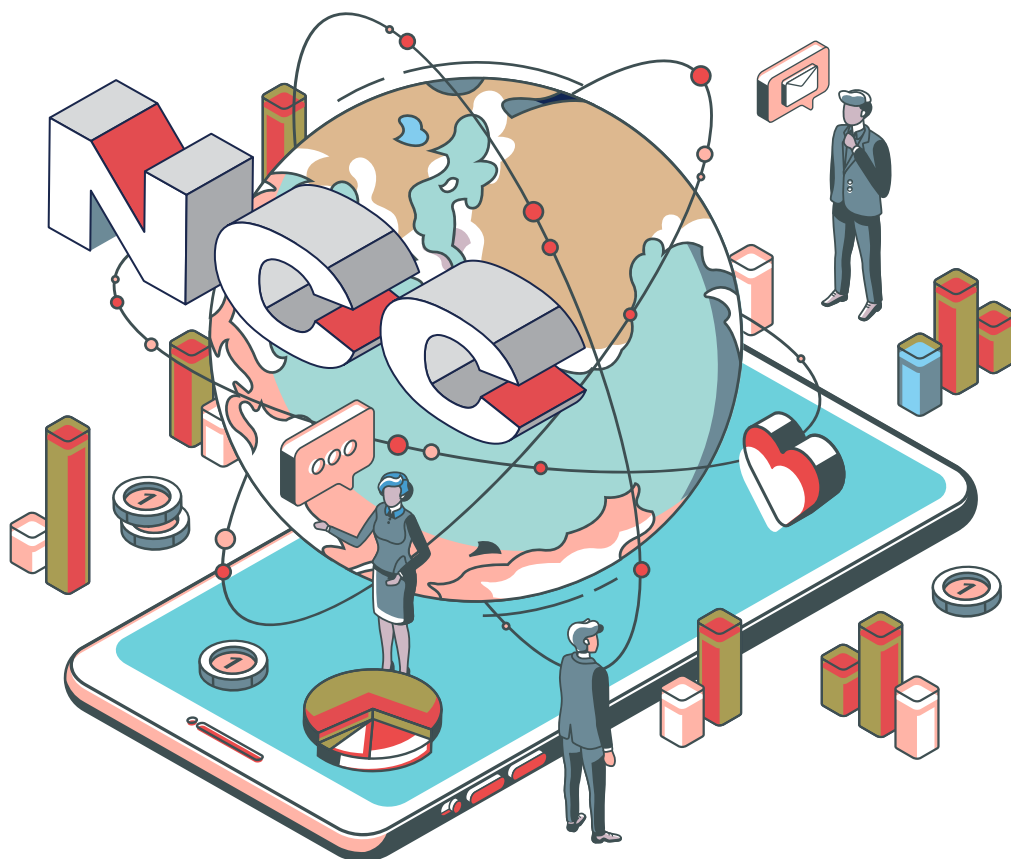
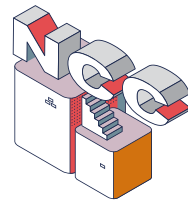
Since NCC was established in 2006, changes of seismic proportions have occurred across communications. In telecommunications, for instance, we have seen several major mobile technological broadband developments, from 2G and 3G voice and data services to 4G and 5G video and multiple application services. Similarly, the broadcasting industry has evolved from conventional paid TV subscriptions to online shared video platforms and is currently facing the impact of cross-border and cross-industry over-the-top TV (OTT TV). In recent years, 5G and the Internet of Things (IoT) have developed in a way that has urged governments to take information security as an even more critical matter at a national level.

In response to such rapid changes in communications, NCC strives to stay abreast of the latest developments in digital convergence worldwide and is committed to protecting and

improving consumer rights, safeguarding minors from online dangers, as well as reducing the digital divide between those in urban and more remote areas. The commission is also committed to reinforcing digital infrastructures and providing fast, accessible, secure and reliable broadband network services to all people in Taiwan. Moreover, NCC aims to actively draw up the appropriate regulatory framework based on the overall development of communications in Taiwan by referring to regulatory cases and issues at both home and abroad.

According to the IMD World Competitiveness Yearbook, published annually by International Institute of Management Development, infrastructure in Taiwan during 2020 ranked first worldwide in both 3G and 4G mobile broadband penetration in the mobile phone market and fifth in internet bandwidth and speed, outpacing most developed nations. Yet, many nations, with an eye on the future, have begun vigorously promoting digital infrastructure and digital transformation, meaning that Taiwan should not just sit back and relax. In fact, NCC plans to accelerate construction of 5G infrastructure, facilitated through an effective regulatory framework, with the aim of boosting digital innovation and transformation and ultimately enhancing industry strength in Taiwan.

This 2020 Communications Performance Report consists of two main chapters. Chapter 1, Results of Communications Policies outlines the NCC's focus and accomplishments throughout 2020. For instance, the implementation of the Executive Yuan-approved Remote Broadband Access Infrastructure Program is bringing ultra-high speed broadband to remote areas and optimizing coverage in mountainous areas,

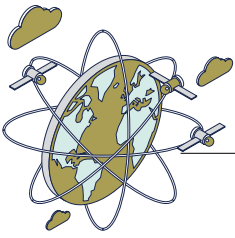


railways and highways, helping to prevent disasters during emergency situations. Another highlight was the release of spectrum for 5G services in February 2020 with five telecommunications operators consecutively launching 5G operations, taking Taiwan into the 5G era.

Turning to broadcasting, after years of planning and hard work, cable television in Taiwan was fully upgraded to digital television in June 2020, providing a better viewing experience and digital value-added services. NCC has also actively strived to improve quality of content production and broadcasting through its license review mechanism and professional training offered to radio and television operators; moreover, the commission has been helping younger generations develop

media literacy through various means, as well as improving domestically made productions and upgrading to HD and 4K resolution.

In an era where IoT and data applications have become universal, the NCC has implemented the Information Security is National Security national policy undertaking such measures as broadening the target audience of the National Communications and Cyber Security Center (NCCSC), enhancing the national-level joint defense system, supervising the basic information security protection of telecommunications operators, and promoting the information security verification mechanism for network connected equipment.

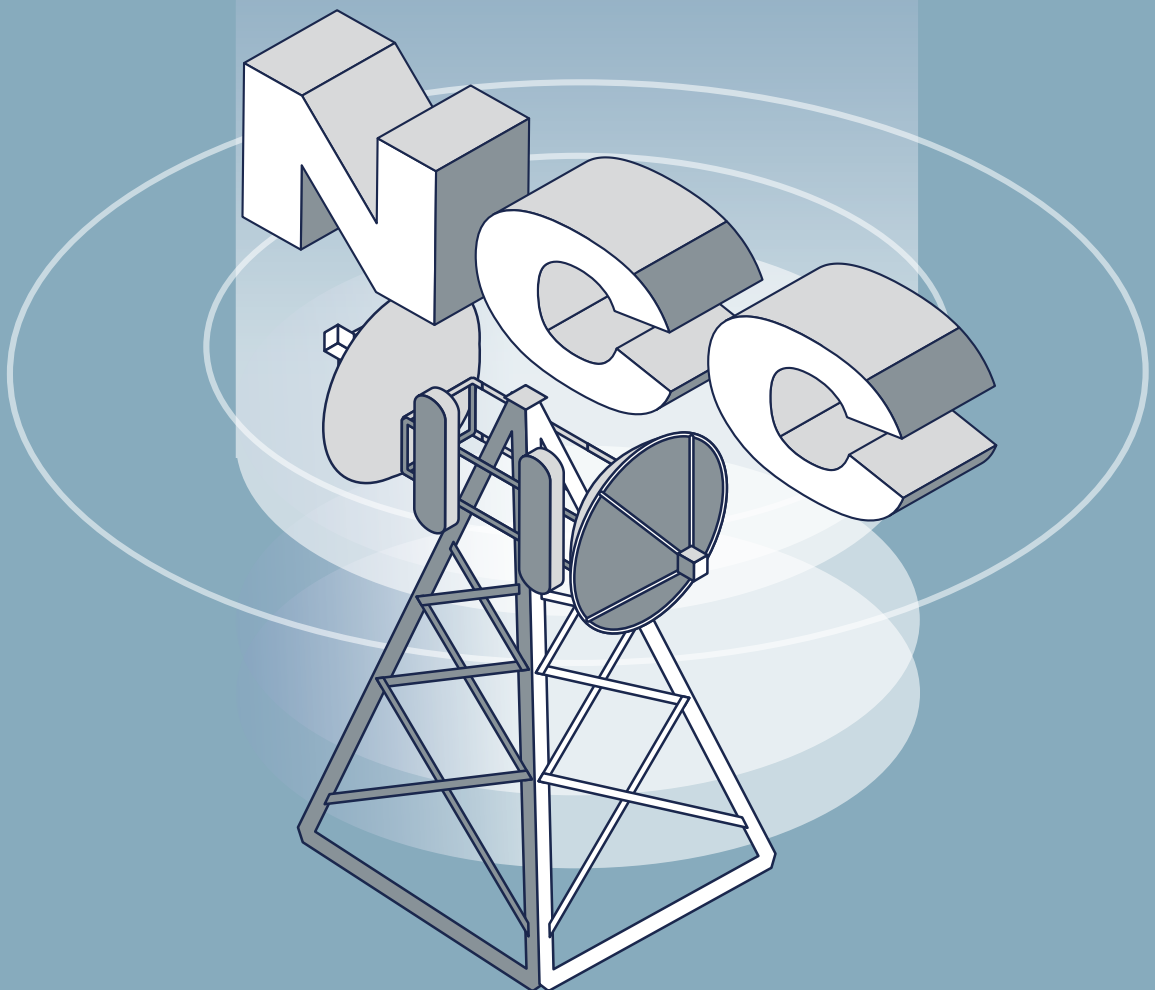


A new act, the Telecommunications Management Act, which adopts behavior-based management instead of the conventional business-based management, has lowered the market threshold and allows public telecommunications network operators to freely combine their networks based on the services they plan to provide, which is conducive to innovation and fair competition. Eighty-one subordinate regulations under the act were formulated by the commission during 2020 and subsequently designated by the Executive Yuan to take effect from July 1, 2020, signaling a new era for telecommunications regulation in Taiwan.

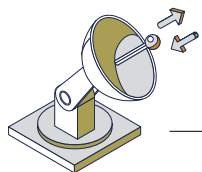
Chapter 2, Prospect and Visions describes how the NCC was established in response to the emergence of digital convergence fifteen years ago, as well as how the evolution and emergence of the internet and emerging technologies continue to bring both challenges and opportunities to all nations. For the near future, the government is planning to carry out another organizational reform due to the needs of technological applications and development and digital transformation in line with the overall goals of the nation and the industry. Consequently, the commission will be facing emerging situations and be assigned with new tasks.

As the communications regulator, the NCC shall to continue to prepare critical communications resources, boost the nation's digital infrastructure, enhance both the telecommunications and broadcasting markets, safeguard consumer rights and digital equality, and amend legislation to be in line with convergence of the new era. The commission remains transparent, communicating both regulatory policy and planning with the outside world in order to forge a diverse, free and secure communications environment and usher in a new era of internet and digital economic development.

# Introduction of NCC







In response to the development of global communications convergence and the subsequent changes of regulatory supervision, existing affairs of communications in Taiwan were integrated, and the Fundamental Communications Act and The National Communications Commission Organization Act (the NCC Organization Act) were announced in 2004 and 2005 respectively. Consequently, the NCC was officially founded on February 22nd, 2006.

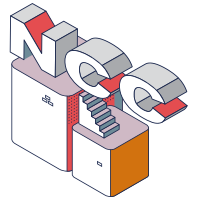
The NCC is an independent body established in accordance with the Basic Code Governing Central Administrative Agencies Organizations. With reference to communications management experiences in advanced economies, the NCC integrated authorities from Directorate General of Telecommunications, Ministry of Transportation and Communications, and Government Information Office, of the Executive Yuan and specified the management and supervisory roles in telecommunications and broadcasting industries, so that communications supervision can become coordinated under one agency. NCC is committed to policy planning, system supervision, market competition, resource management, and consumer rights. It is a professional, diverse, and efficient agency for improving the communications industry and environment, as well as enhancing the digital capabilities of Taiwan.

## Duties and Responsibilities

According to Article 1 of the NCC Organization Act, the purpose of the NCC is to ensure people's freedom of speech, end state control of the media in order to protect its neutrality, enhance broadcasting standards, ensure fair and effective competition, protect the rights and interests of consumers, respect the rights of minorities and underprivileged

groups, promote the development of cultural diversity, and enhance the competitiveness of the nation. In accordance with Article 3 of the same act, the duties and responsibilities of NCC include the following:

- Stipulate communications supervisory policy, and stipulate, draft, amend, abolish and implement communications laws and regulations;
- Manage and supervise the operations of communications businesses and license approval and issuance;
- Review and inspect communications systems and equipment;
- Stipulate technical standards of communications engineering;
- Regulate the ratings system for communication contents and other matters specified in law;
- Manage communications resources; maintain the order of competitive practices in communications;
- Standardize and manage specifications of technologies of communications security;
- Preside over major disputes between communications operators and matters of consumer protection;
- Conduct international exchanges and cooperation regarding communications;
- Manage funds related to communications businesses;
- Supervise, investigate, and establish rulings on communications operations;
- Undertake punitive measures against those that violate communications-related laws and regulations;
- Supervise other communications-related matters.



## Organizational Structure of NCC

In response to the transformation of the communications technology and industry, the NCC adjusted its internal organization based on a hierarchical management model, in line with the trend in amendments to the convergence laws with reference to the governance structures of the communications industry in other countries. The new organizational framework took effect on January 1, 2015, consisting of the Department of Planning, Department of Network Infrastructure, Department of Platforms and Businesses, Department of Frequency and Resources, Department of Broadcasting and Content, Department of Legal Affairs, Department of Northern Regional Affairs, Department of Central

Regional Affairs, Department of Southern Regional Affairs, Secretariat, Personnel Office, Civil Service Ethics Office, and the Budget, Accounting and Statistics Office.

In order to enhance the Commission's information network and application security protection, the unit responsible for communications business and the unit responsible for information and communications security business management were merged to become the Department of Infrastructure and Cyber Security. The merger was enacted by the commission on February 26, 2020 after being approved by the Executive Yuan in January 2020 (Figure 1).

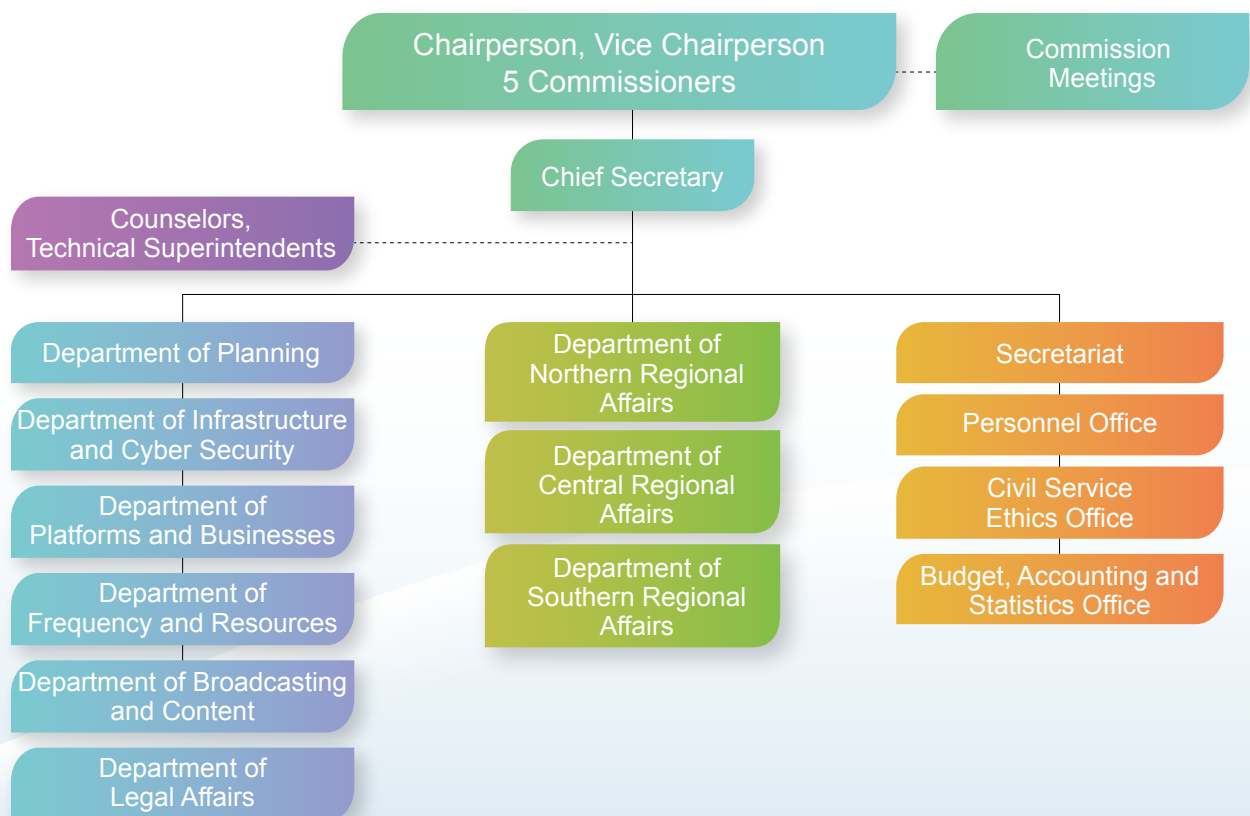
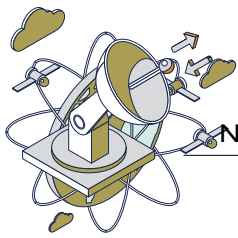


Figure 1 Organizational Structure

Source: NCC



## NCC Commissioners

According to Article 4 of the NCC Organization Act, seven commissioner positions are designated by the NCC, all of which are full-time positions nominated by the Head of the Executive Yuan (Premier) and appointed with the consent of the Legislative Yuan. The commissioners serve a four-year tenure and may be re-appointed to serve a consecutive term. The Premier appoints one commissioner as the Chairperson to represent the NCC. The Chairperson and Vice Chair are compensated as a Level 14 civil servants whereas the other commissioners are compensated as Level 13 civil servants.

As of December 31, 2020, the seven commissioners were Chairperson Yaw-Shyang Chen, Vice Chairperson Po-Tsung Wong, Wei-Ching Wang, Lih-Yun Lin, Yeali S. Sun, Wei-Chung Teng, and Chi-Hung Hsiao. All commissioners possess expertise and knowledge in relevant professional fields such as law, communication regulations, and technology.

## Overview of Administrative Operations

### Operations of the Commission Meeting

The NCC is an independent agency adopting the collegiate system. The Commission Meeting is convened primarily in order to implement NCC policies and affairs. According to Article 10 of the NCC Organization Act, the NCC convenes a Commission Meeting on a weekly basis with interim meetings being convened when deemed necessary.

The NCC convened a total of 56 Commission Meetings during 2020, in which a total of 467 motions were resolved (Figure 2).

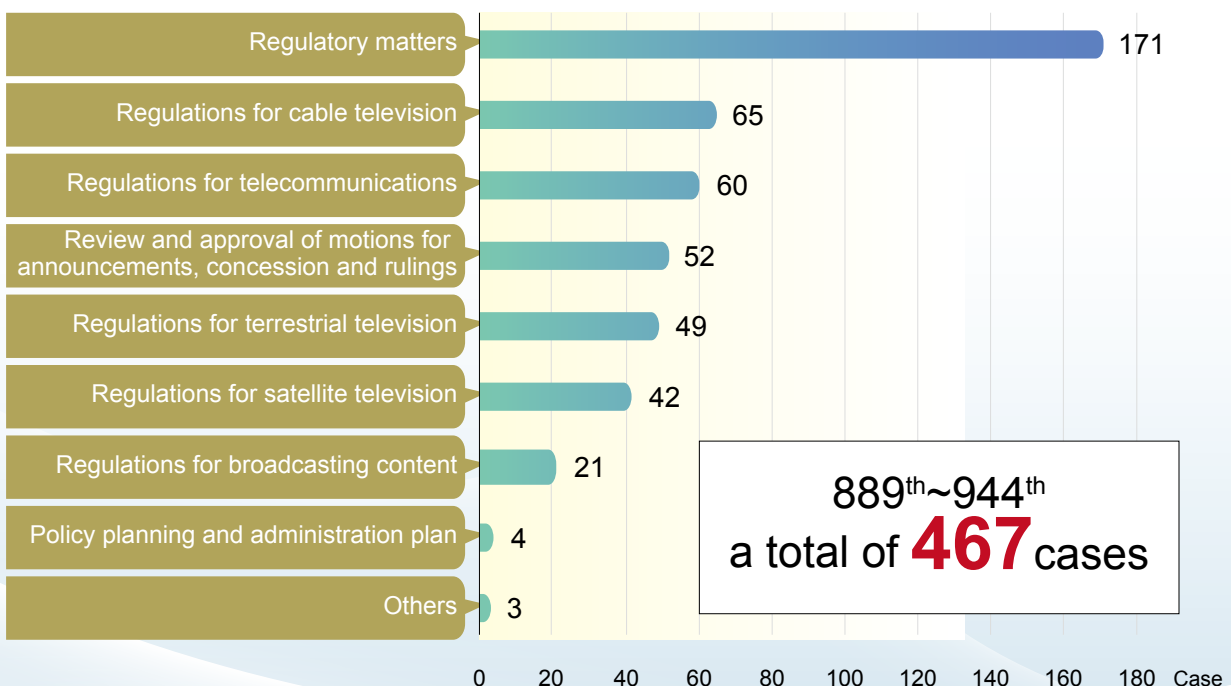
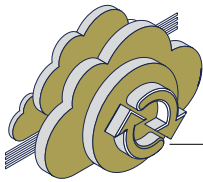


Figure 2 Motions Resolved at Commission Meetings  
Source: NCC

# Results of Communications Policies





## Overview of Communications Market

Turning first to the number of subscribers to telecommunications, as of December 2020, there were 29.29 million subscribing to mobile communications, 27.8 million to mobile broadband, 10.75 million to landlines, and 6.04 million to fixed network broadband. Although the number of landline phone subscribers fell by 240,000 year on year, those subscribing to mobile broadband and fixed network broadband rose by 160,000 and 140,000 respectively, with the number of mobile communications subscribers increasing slightly by 80,000 (Figure 3).

When it comes to the development of the domestic communications market, as of December 2020, the total number of various broadband subscribers in Taiwan had reached 33,497,706, of

which 4G service subscribers accounted for 81.95%, followed by FTTx 11.55%, cable modem 5.29%, asymmetric digital subscriber line (ADSL) 0.93%, and public wireless local area network (PWLAN) 0.28% and leased line 0.01% respectively (Figure 4).

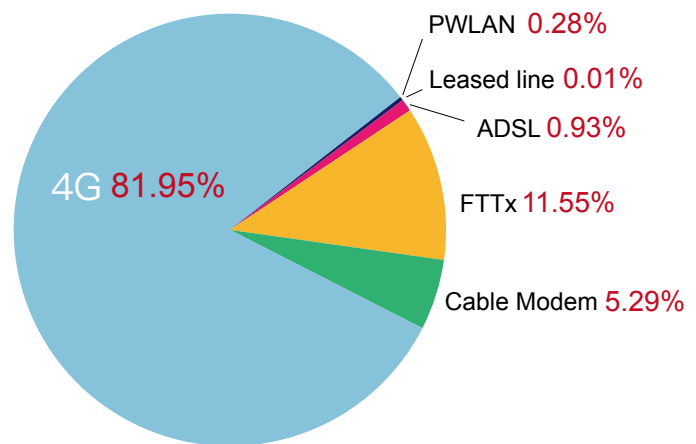


Figure 4 Proportions of Broadband Users  
Source: NCC

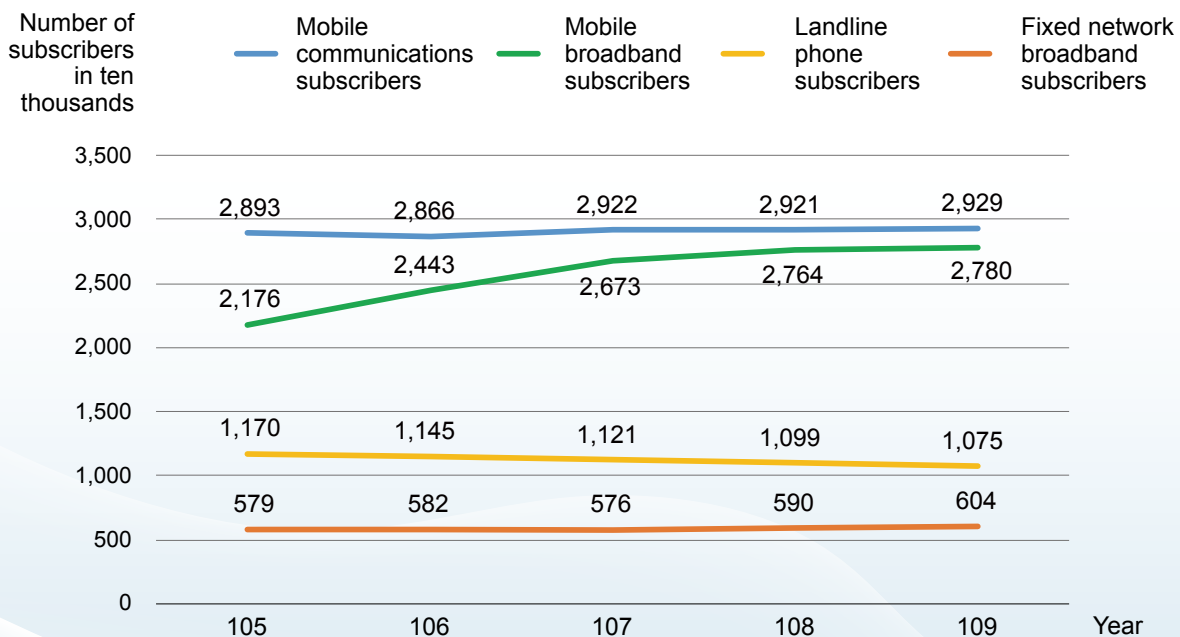


Figure 3 Telecommunications Subscribers  
Source: NCC

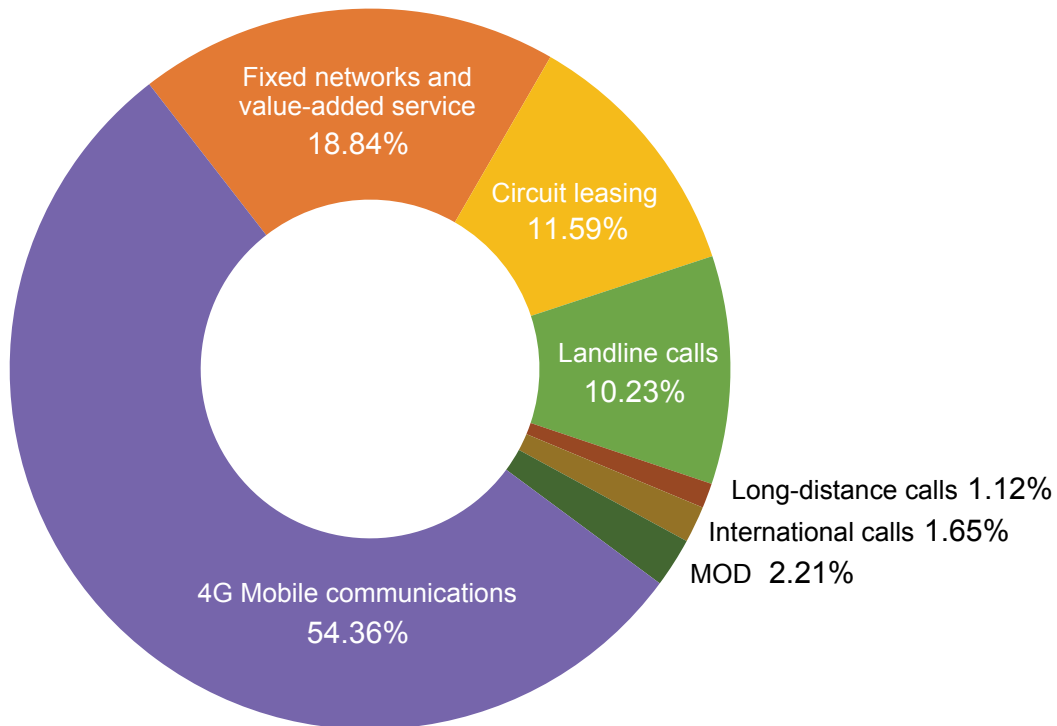
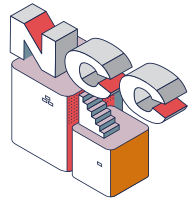


Figure 5 Proportions of Telecom Services Revenue

Source: NCC

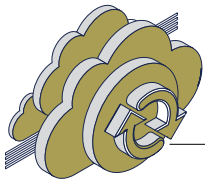
The total revenues from the telecommunications services of Taiwan's five major telecom operators — Chunghwa Telecom, Taiwan Mobile Telecom, Far EasTone Telecom, Taiwan Star Telecom and Asia Pacific Telecom — reached NT\$282.7 billion. We can note that 4G mobile communications services were the main source of revenue, accounting for 54.36%; meanwhile, fixed networks and value-added services constituted 18.84%, circuit leasing 11.59%, landline calls 10.23%, telecom TV (Chunghwa Telecom's MOD) 2.21%, and international calls and long-distance calls 1.65% and 1.12% respectively (Figure 5).

The number of subscribers to cable television services, as of December 2020, was 4,868,000, a decrease of approximately 107,000 from the previous year. It is worth noting that with the proportion of digital cable television reaching 100% in June, Taiwan has become fully digitized in 2020.

## Communications Infrastructure

### Enhancing the Mobile Broadband Infrastructure and Reducing the Digital Divide between Urban and Remote Areas

Since 2017, NCC has facilitated the provision of Gbps-level services in remote townships, 100 Mbps-level services in remote villages, the addition of WiFi hotspots, as well as strengthened broadband infrastructure, such as 4G base stations in remote areas. The commission has also facilitated 100 Mbps-level services in 764 remote villages, 1-Gbps-level services in 85 remote townships, and 12-Mbps-level broadband



service 97.6% penetration in remote villages under universal service of telecommunications enterprises.

Throughout 2020, NCC actively encouraged applications from remote areas through subsidies. A total of 446 cases have been completed, including Gbps-level fixed broadband internet set up in 56 locations, 100 Mbps-level fixed broadband internet established and expanded in 82 locations, bandwidth expanded at 241 wireless hotspots, 4G mobile broadband base station added in 66

locations and one submarine internet backbone linking outlying islands and Taiwan proper, under the joint efforts of the public and private sectors. With the high speeds being provided to those in remote areas, people can benefit from various services and applications made possible by the internet at fair and reasonable prices, further reducing the digital divide between those in urban and remote areas (Figure 6).

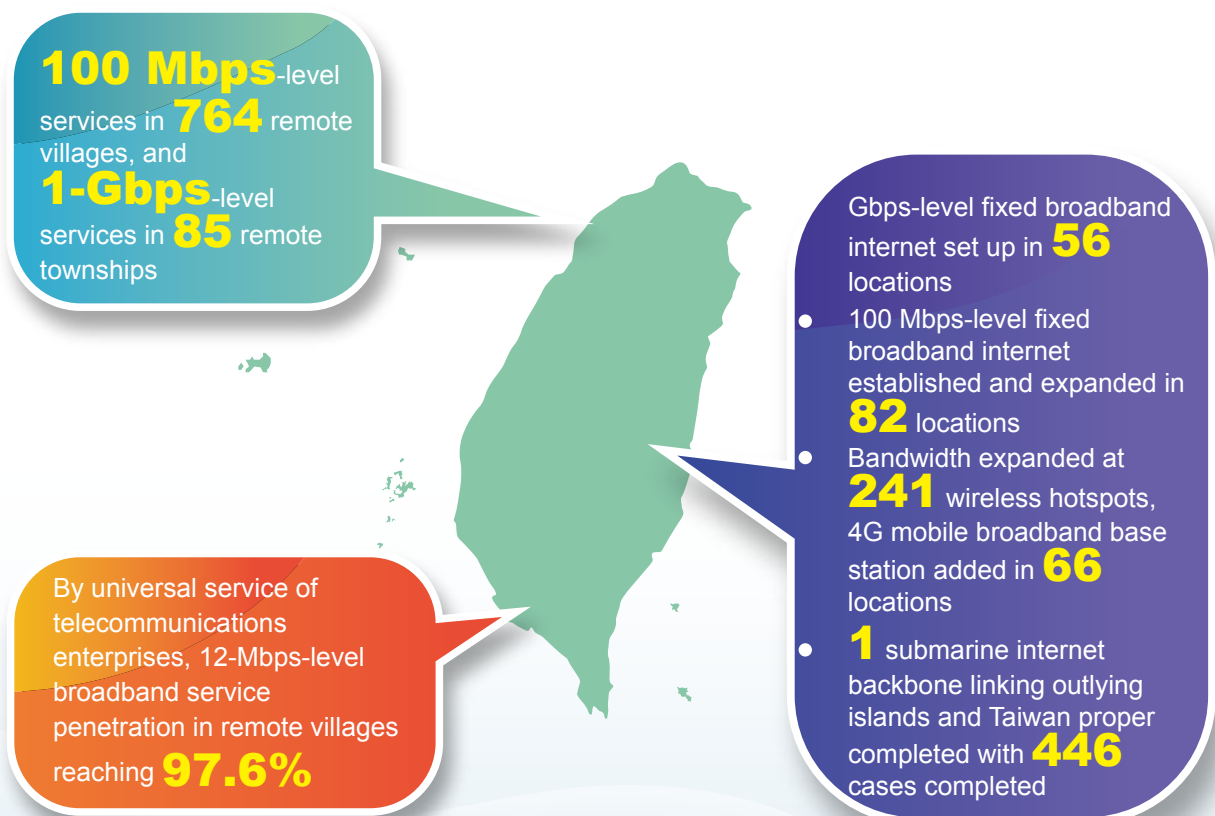


Figure 6 Broadband in Remote Areas  
Source: NCC



## Optimizing Mobile Coverage for Mass Transportation and in Mountains

As of the end of 2020, NCC had facilitated the enhancement of mobile communications coverage at 5 Taiwan Railways South Link Line sites and 5 mountain lodges – Jiujiu Hut, Tianchi Lodge, Kuaigu Hut, Xiangyang Cabin and Jiaming Lake Cabin – as well as nearby trails at 2 national parks – Mt. Cising Trail and Songxue Lodge at Mt. Hehuan. Mobile communications at 63 locations in the mountains, including 19 accident black spots (Figure 7) have also been optimized.

## Preparing Critical Communications Resources

Licenses for 5G were issued in February 2020, bringing Taiwan up to speed with developed countries, such as the US, Germany, Japan and South Korea. Two frequency bands became available: 3.5 GHz (270 MHz of bandwidth) and 28 GHz (1600 MHz) released with winning bids totaling NT\$142.19 billion; Chunghwa Telecom became the first operator in Taiwan to launch 5G operations and by October 22, 2020, the five mobile communications operators had all launched 5G operations.

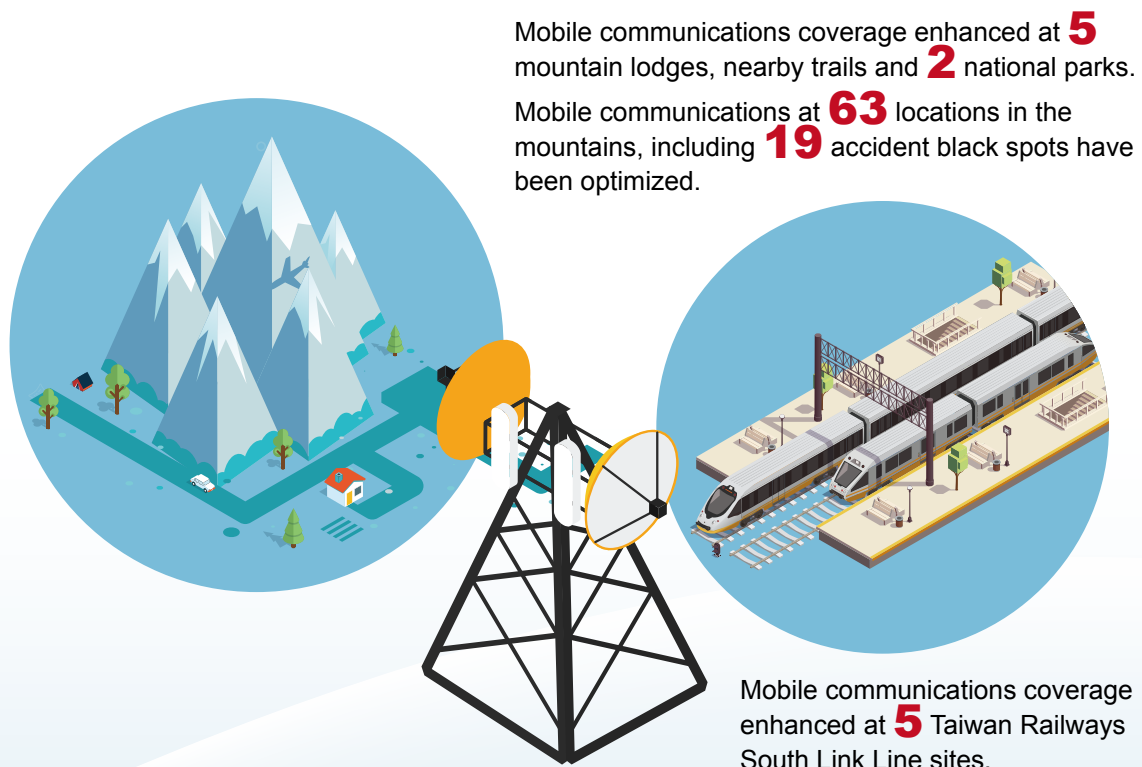
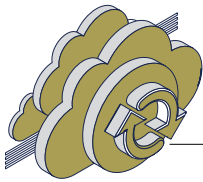


Figure 7 Mobile Coverage Improved in Mountains and for Mass Transportation

Source: NCC





Rate of IPv6 utilization in Taiwan reached **49.74%**,  
ranking **seventh** in the world.

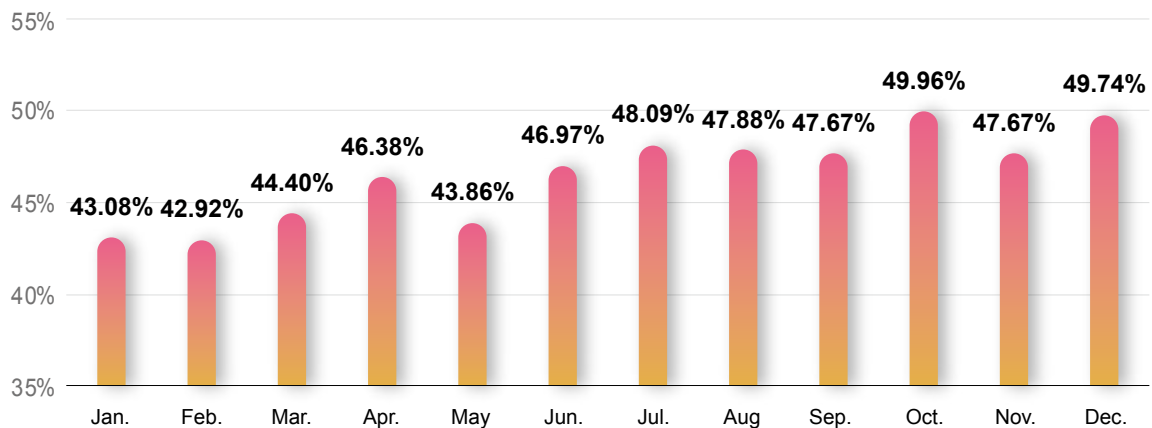


Figure 8 IPv6 Utilization

Sources: APNIC, compiled by TWNIC; graphic produced by NCC

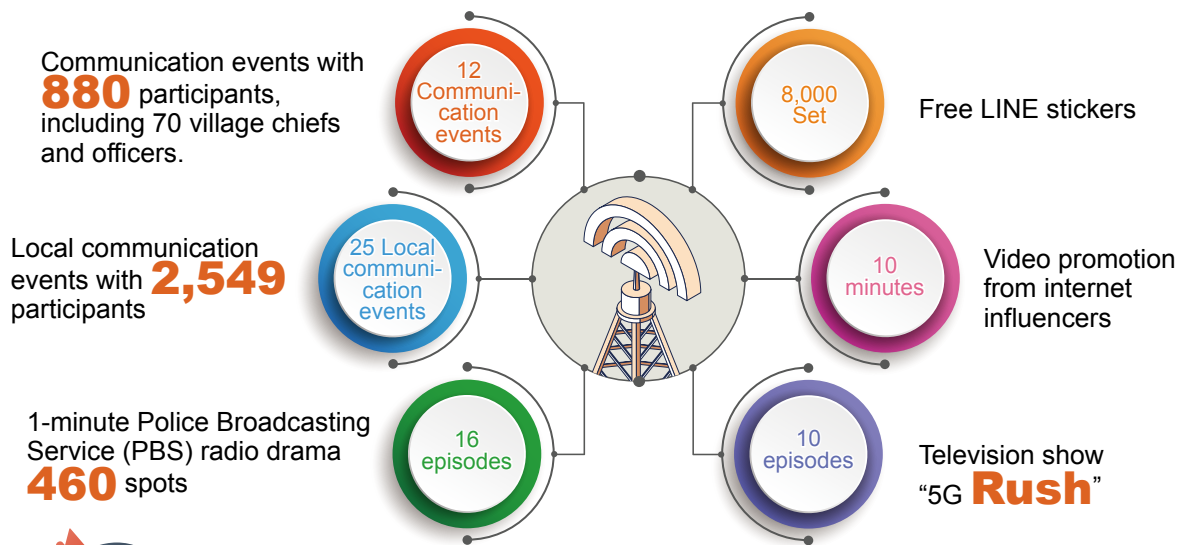
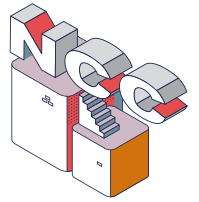
Note: Statistics of the eleventh day of every month.

In order to create an environment conducive to 5G internet and the IoT, NCC has been coordinating with various parties to improve IPv6 utilization, which rose from 28.81% at the end of 2018 to 49.74% at the end of 2020, ranking seventh in the world (Figure 8).

### Promoting the Safety of Electromagnetic Waves and 5G Infrastructure

During 2020, 12 events were organized by the commission to allay concerns of the risks from electromagnetic waves, involving experts and scholars, and 880 participants, including 70 village chiefs and officers. Another 25 local events were held by groups contracted by the commission, with 2,549 participating.

Between 2016 and 2020, a total of 501 such events had been held. NCC also utilized different medium, such as television, radio, internet influencers and free LINE stickers to deepen awareness. The effect has been reflected in the decreasing number of base station complaints received each year, dropping from 1,746 in 2016 to 1,115 in 2020, a decrease of 36% (Figure 9, 10).



Between 2016 and 2020, a total of **501** electromagnetic waves promotion events had been held by the Commission.

Base station complaints received each year, dropping from **1,746** in 2016 to **1,115** in 2020, a decrease of **36%.**

Figure 9 Results of Promoting Electromagnetic Waves Safety

Source: NCC

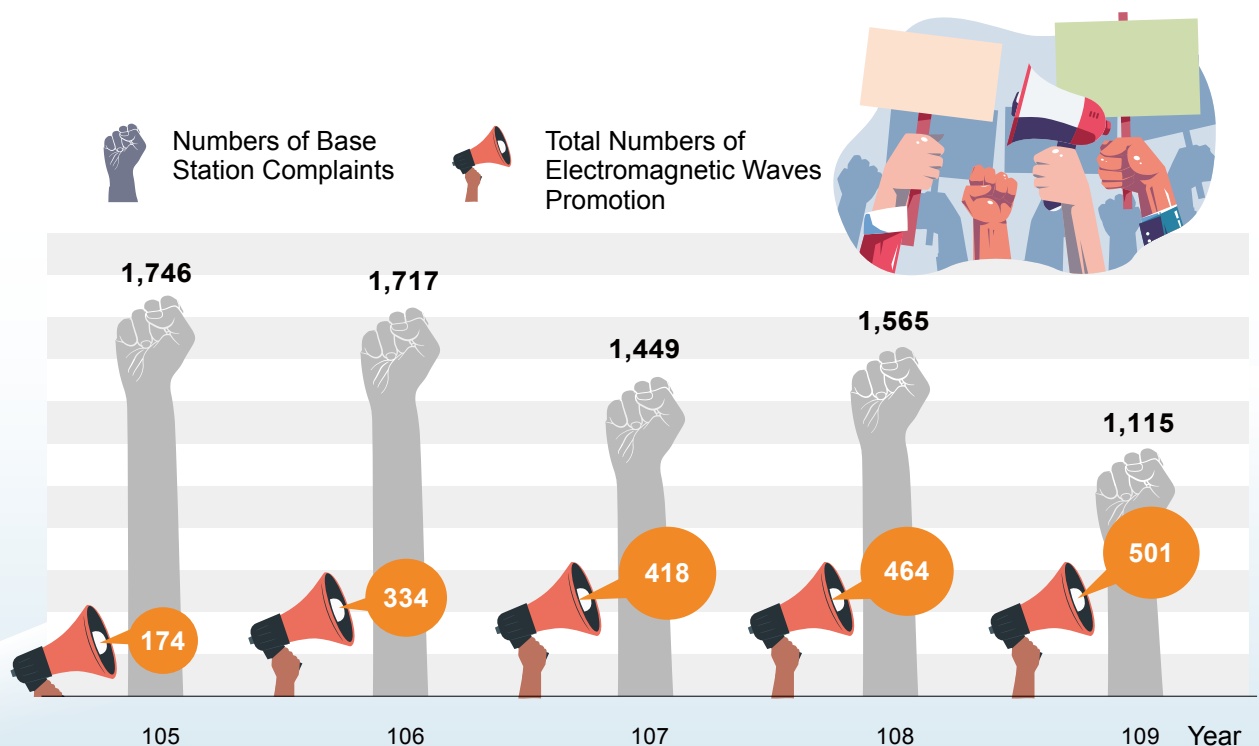
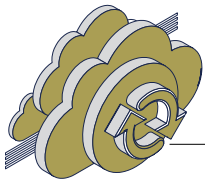


Figure 10 Complaints against and Promotion on Base Stations and Electromagnetic Waves

Source: NCC



## Enhanced Broadcasting Environment

### Looking to the Digital Convergence Era as Cable TV Fully Digitized

Between 2010 and 2020, NCC coordinated closely with ministries and local governments to urge cable television service providers to take on the digital transformation. In December 2019, 99.9% of Taiwan's cable television service providers had shifted to digital. When the service provided in Dongyin Township by Xiang Tong Ltd. Co., a service operator located in Lienchiang County, went digital, Taiwan became fully digitized (Figure 11). Similarly, penetration of digital set-top boxes, which had reached 99.99% by the end of 2019, rose to 100% in June 2020. As for the policy of upgrading cable TV channels to high definition (HD), as of the fourth quarter of 2020, on average 99.2% of the basic channels from all cable TV operators had shifted to HD.

### Conducting Effective Reviews of Broadcasting Licenses with View to Improved Audio-visual Services

In order to ensure the quality of audio-visual services and to facilitate a sound environment for the broadcasting businesses, the commission has adopted a mechanism of application for establishment, appraisal and license renewal. During 2020, 24 broadcasters were appraised and 59 licenses renewed; for the terrestrial television sector, three appraisals were undertaken: Taiwan Public Television Service Foundation, the Taiwan Television Enterprise and the Chinese Television System Corporation; as for satellite broadcasting

business, 16 establishment applications were processed, with 51 licenses renewed and 63 appraisals assessed.

### Enhancing Professional Literacy of Broadcasters

Throughout 2020, a total of 8 training sessions on broadcaster's professional literacy were conducted covering northern, central and southern Taiwan. These sessions covered the topics of the operations and development of a broadcaster, gender equality, communications regarding health and consumer protection. They also touched on issues including privacy protection of general public and victims, human rights, as well as the protection of minors and rights and interests of the disabled. The sessions were attended by a total of 746 participants with satisfaction rates exceeding 95%.

5 workshops were also conducted on fact-checking and fairness for those working in news channels or involved in news production and broadcasting. The agenda of the workshops covered reasons and means for fact-checking, principles of fair reporting, and fact-checking tools on international online platforms and their practical use. The events were attended by a total of 181 participants, with course satisfaction exceeding 97%.

With view to encouraging news production teams to take advantage of existing resources to jointly promote media literacy and improve public participation, NCC sponsored media literacy training events in partnership with 13 communications operators or groups. In all, 2,195 people participated in media literacy development, 1,989 joined the test for appropriate communications access or media literacy concept, the pass rate reached 99.95%, exceeding the annual goal of 92%.

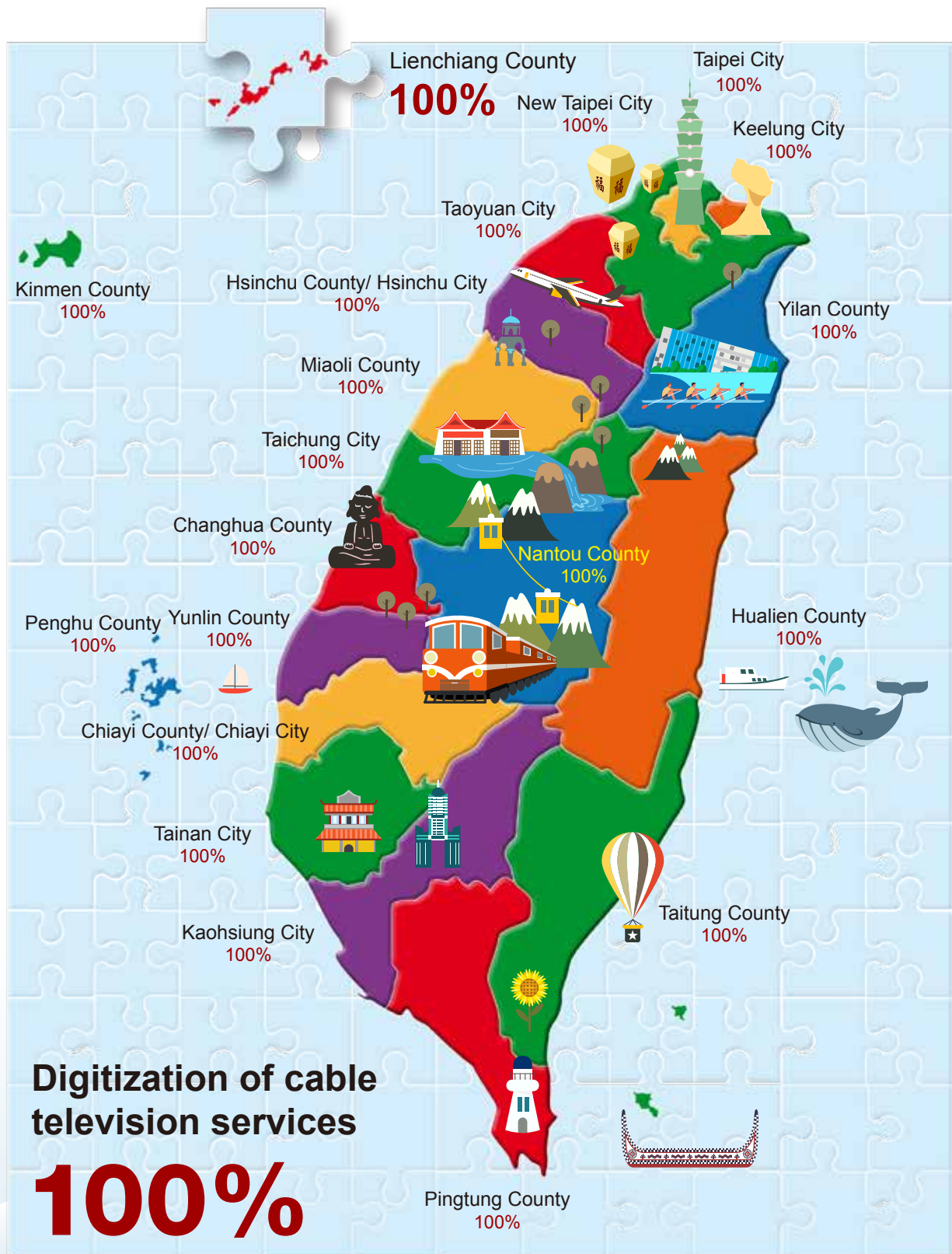
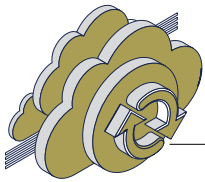


Figure 11 Digital Cable TV Penetration Reached 100% in June 2020

Source: NCC



## Allowing Longer Advertisement Breaks to Promote Measures During the Pandemic

During the COVID-19 pandemic, the commission required broadcasters to broadcast pandemic-related messages from the Central Epidemic Command Center (CECC) in accordance with the law. To protect the public's viewing rights and public interests and prevent the industry from being overburdened, NCC amended and declared the interpretation of Article 10 of the Special Relief and Revitalization Measures for Severe Pneumonia with Novel Pathogens to allow the private broadcasters to have extended advertisement breaks, starting August 7, 2020, based on the principle of equality. As of December 31, 2020, the interpretation had been applied to a total of 213 television channels and 175 broadcasters, with advertisement breaks extended on 40 television channels. This way, the impact on people's rights and business operations was reduced.

## Protecting Intellectual Property Rights

During 2020, NCC undertook random inspections on 90 wireless multimedia set-top boxes, of which 57 failed the inspection with their verification abolished in accordance with the law. Meanwhile, the commission required operators, online platforms and physical channel operators to gather all illegal products and remove them from the shelves (Figure 12).

## Information Security

### Enhancing Cybersecurity Platforms

The National Communications and Cyber Security Center (NCCSC) was launched in 2018 by NCC in order to ensure the information security of various activities on the internet through a platform of network management and information security

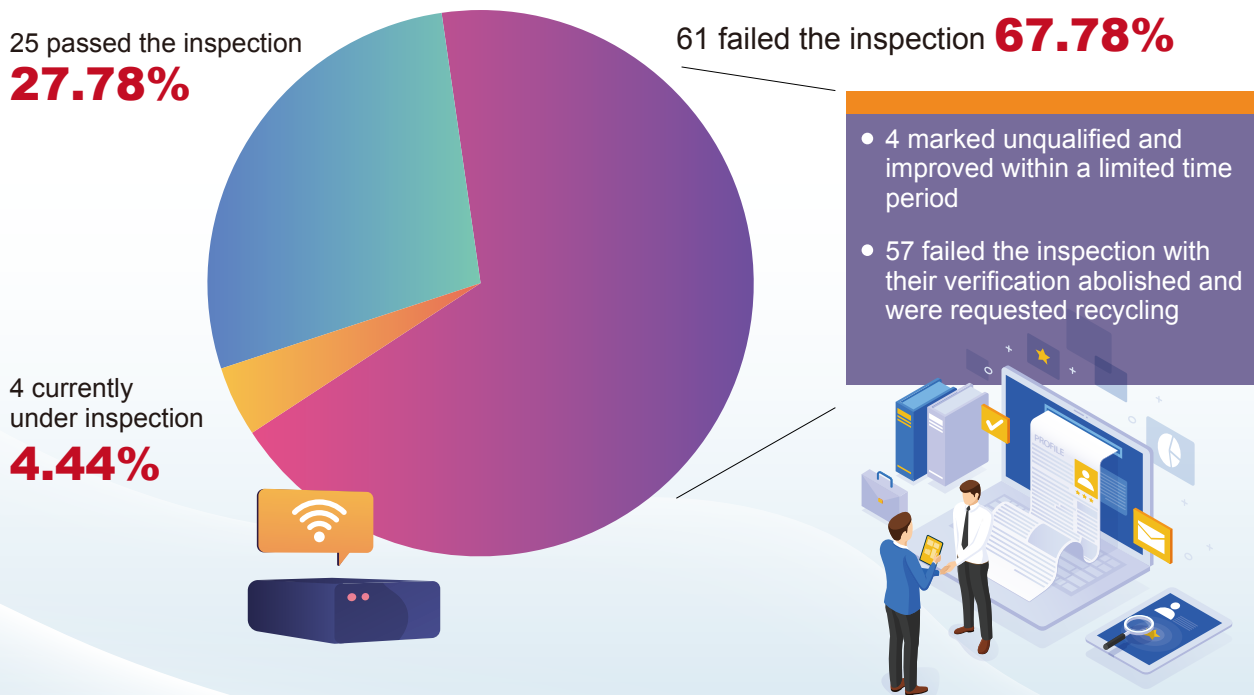
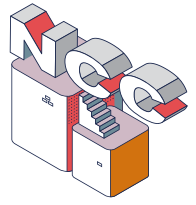


Figure 12 Results of Wireless Multimedia Set-top Box Inspections

Source: NCC





analysis. During 2020, platforms of network management was expanded to include terrestrial TV and broadcasting, platforms of information security analysis was expanded to include internet access providers and critical communications and internet infrastructure providers.

### Improving Capacity of Information Security

Between August 31 and October 8, 2020, NCC held 4 training events to provide information and communications security training for operators to 2 specific non-government agencies under the commission and 95 critical communications infrastructure providers (Figure 13). Furthermore, with the aim of enhancing operators' information and communications security protection capacity and ensuring operators implement information security protection and protect consumer communication rights, it audited the implementation of the Information and Communications Security Maintenance Program at the Taiwan Network Information Center (TWNIC) and Telecom Technology Center

(TTC) on September 15 and November 17, 2020 respectively

### Supervising Basic Information Security Protection in the Telecom Industry

In order to implement security management at telecommunications facilities of operators and reduce the likelihood of information security incidents, NCC carried out random physical inspections at the telecommunication facilities of telecommunications operators. Those found with improper protection were required to put forward corrective measures to reinforce cybersecurity and protection mechanisms and improve the security of Taiwan's telecommunications facilities. 20 inspections of telecommunications facilities of 5 mobile broadband operators were conducted during 2020, with all passing inspections.

In alignment with the requirements of the Office of Homeland Security, Executive Yuan, during 2020, NCC conducted a designated drill for one operator, organized critical infrastructure protection drills at another, and guided 2 operators



Figure 13 Information and Communications Security Training for Operators

Source: NCC

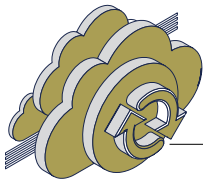


Figure 14 National Critical Infrastructure Protection Drills

Source: NCC

to carry out protection drills, with 65 external units, 466 people and 2,043 participants mobilized, and 59 meetings held (Figure 14), effectively improving business continuity of those involved.

### Promoting the Information Security Verification Mechanism for Connected Equipment

With reference to relevant information security protection guidelines both domestically and abroad, the commission has published technical guidelines or industrial standards for the software built in smartphone systems, wireless IP cameras,

Wi-Fi apps, wireless routers, cable TV set-top boxes, built-in software in smartphones and smart speakers, as a basis for industry to test the information security of connected equipment. On December 1, 2020, NCC organized the Internet of Things (IoT) Cybersecurity Mark Presentation, in collaboration with the Ministry of Economic Affairs, to present certificates to manufacturers whose products were certified for IoT cybersecurity (Figure 15).

## Convergence Regulations

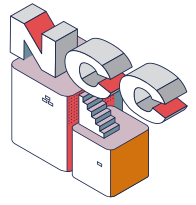
### Promulgating Subordinate Legislation of the Telecommunications Management Act

Taking effect since July 1, 2020, the aim of the Telecommunications Management Act is fourfold: (1) introduce hierarchical management and behavior management, reducing entry threshold and control so as to promote a free and open market with innovation and fair competition, (2) build safe and reliable public telecommunication networks so as to ensure their security and



Figure 15 The Internet of Things (IoT) Cybersecurity Mark Presentation in Collaboration with the Ministry of Economic Affairs on December 1, 2020

Source: NCC



quality, (3) relax regulations on radio frequency, network sharing and leasing, maximizing benefits brought by frequency spectrum resources and (4) promote and popularize services and infrastructure with view to eliminating the digital divide. Subsequently, the commission has also completed 81 amendments to subordinate laws. (Figure 16).

### Drafting the Over the Top TV Act

Commissioned in September 2019 by the Executive Yuan to regulate OTT TV, NCC began work on the draft of the Over the Top TV Act compiling public feedback on the matter between July and October 2020. Since July 22, 2020, the commission compiled a range of opinions through the Public Policy Network Participation Platform, and organized the first and second public hearings on September 3, 2020 and October 8, 2020 respectively; it also consulted with other agencies to seek opinions from all groups with view to protecting viewing rights of the public and safeguarding cultural diversity in Taiwan.

### Drafting the Digital Communications Act

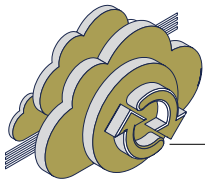
After being drawn up by the commission in 2016, the draft of the Digital Communications Act was submitted to the Ministry of Transportation at the legislature for review, which was completed in May 2018. However, the legislation was not completed within the legislative term, meaning that when the new legislative term began in February 2020, such unfinished legislation was discarded automatically. As a result, the circumstances provided further opportunities for the NCC to continue to review the draft. Meanwhile, the Executive Yuan underwent an organizational reform; consequently, after the commission's Organizational Act is amended and passed, NCC will be responsible for overseeing internet broadcasting policy and the development and implementation of its legislation. In this light, the draft of the Digital Communications Act focuses on how to manage illegal content and how the administration of various laws and ministries can



Figure 16 Subordinate Regulations of the Telecommunications Management Act

Source: NCC





be aligned to include the same principles of self-discipline, heteronomy and law. In the meantime, NCC continues to expect transparency and accountability of online platform operators.

## Consumer Rights and a Digitally Inclusive Society

### Establishing Content Protection Mechanisms to Safeguard Minors

The NCC, alongside the Ministry of Health and Welfare, the Ministry of Interior, the Ministry of Education, the Ministry of Culture and the Ministry of Economic Affairs, contracted the private sector to establish the Institute of Watch Internet Network (iWIN) in order to encourage self-regulation of the media and undertake effective and necessary action to ensure the safety of children and adolescents online.

During 2020, iWIN regularly provided a variety of free domestic and foreign filter software applications through its website, such as filters for pornographic content, as well as information on filtering services on domestic internet access



Figure 17 iWIN Promoting Cybersecurity for Minors During Taipei IT Month

Source: NCC

providers. It also actively promoted online safety to minors through a range of activities, even directly at campuses. Throughout 2020, such information was shared to 10,585 people at 47 schools; a total of 3,878 complaints submitted from the public were received, of which 1,928 were related to children and adolescent protection laws. Moreover, five large-scale events promoting cybersecurity to the public were held in Taipei, Taichung, Kaohsiung and Hualien throughout the year, with a total of 30,389 participants (Figure 17).

### Assisting the Visually Impaired to Access Media, Promoting Digital Equality

With view to encouraging television broadcasters to provide audio descriptions with programs, the commission began accepting applications for subsidies for programs with audio descriptions. Such programs included TTV's A Boy Named Flora A. Besides being made available online, the program also became available on DVD and was given to 74 institutes, including life rehabilitation centers for the visually impaired in all counties and cities, libraries, special education schools and disabled groups, for use within the permitted scope (Figure 18).



Figure 18 Advertisement for Program with Audio Descriptions

Source: NCC

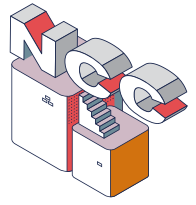


Figure 19 NCC and AIT Jointly Issued the Taiwan-US Joint Declaration on 5G Security on August 26, 2020

Source: NCC

## Promoting Web Accessibility Testing and Certification

With view to raising public awareness of web accessibility and promoting accessibility of information, NCC undertook web accessibility testing and certification in the public sector by selecting 200 popular private enterprise websites for website accessibility assessment and testing.

## International Exchanges and Cooperation

### Safeguarding 5G Cybersecurity and National Security

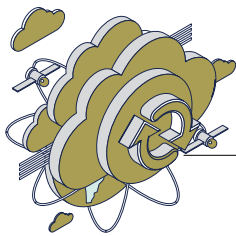
To demonstrate the determination to protect network security, NCC Chairperson Yaw-shyang Chen, former American Institute in Taiwan (AIT) Director William Brent Christensen, and Minister of Foreign Affairs Jaushieh Joseph Wu, on August 26, 2020, jointly issued the Declaration

on 5G Security with the aim of providing a secure, resilient and reliable 5G mobile communications network ecosystem (Figure 19). On the same day, Commissioner Yeali S. Sun hosted the 5G Policy and Democratic Internet Governance forum, emphasizing the critical nature of information security in the 5G era and the commission's role in assisting industry in establishing information security capabilities while also maintaining personal information security.

On September 23 and 24, 2020, Commissioner Yeali S. Sun was invited to share Taiwan's 5G information security policies and precautionary actions at the Innovation and R&D in 5G session of the second Prague 5G Security Conference, which was held online at the NÚKIB event in the Czech Republic.

### Updating the Regulatory Framework

At the 2020 ECCT EU-Taiwan Telecom Forum, held by the European Chamber of Commerce Taiwan (ECCT) on September 8, 2020, NCC



Chairperson Yaw-shyang Chen gave a speech on the Telecommunications Management Act and the development of the 5G industry, emphasizing that NCC has always been transparent. The chairperson also underscored the value of interconnection and innovation, as well as the spirit of the law within the act, and outlined the commission's aims to actively work with all groups to seize the critical opportunities for digital development (Figure 20).

In a policy round table forum held on November 4, 2020 by the Asia Video Industry Association (AVIA) discussing how governments of various countries could separate the legislation and policies on OTT TV services from those on traditional media like radio and television, NCC Commissioner Lih-yun Lin presented the latest viewing habits in Taiwan, and outlined the focus of the draft of the Over the Top TV Act and a policy vision that is conducive to the development of OTT TV industry in Taiwan.

## Fighting Disinformation and Promoting Digital Governance

In a webinar entitled, Challenges of the Technological Revolution to the Regional Order in East Asia, co-held by Taipei Representative Office in France and the French Institut Français des Relations Internationales (IFRI), from November 24 to 30, 2020, NCC Commissioner Yeali S. Sun shared the experience of Taiwan in digital technology development and democracy under the topic Digital Technology and Democracy in Taiwan.

On November 26, 2020, NCC Commissioner Yeali S. Sun was also invited to the international conference Fighting COVID-19 Disinformation, hosted by the Korea Communications Standards Commission (KCSC), giving a presentation entitled, How Taiwan Stops the Spread of Disinformation Related to COVID-19, sharing how Taiwan, by means of policies and regulations, media publicity and support from non-governmental organizations, has been combating disinformation on COVID-19.

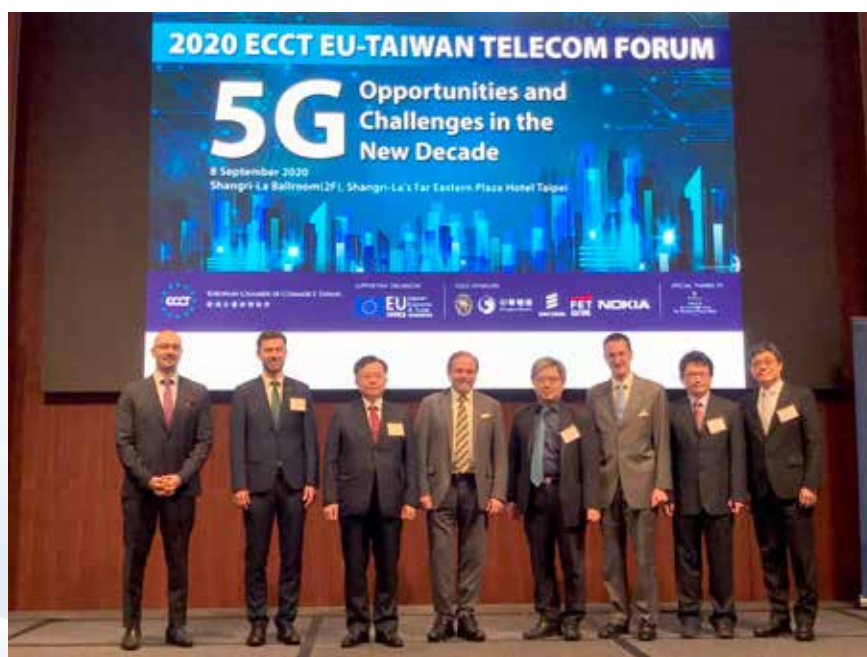
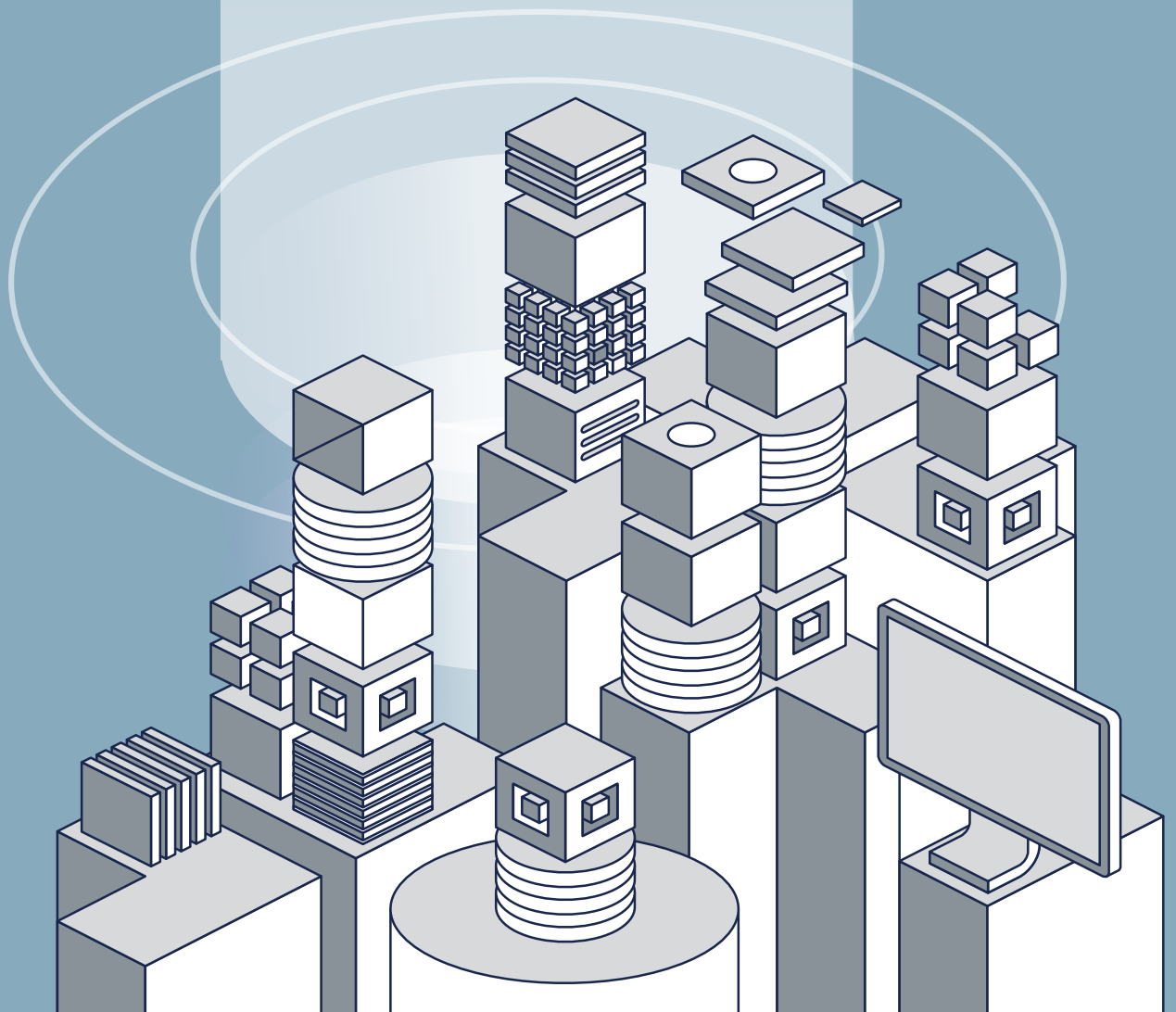
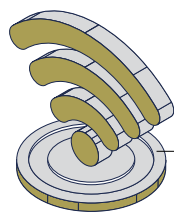


Figure 20 2020 ECCT EU-Taiwan Telecom Forum on September 8, 2020  
Source: NCC

# Outlook and Vision







## Digital Infrastructure

As a member of the Infrastructure group under the Digital Nation & Innovative Economic Development Program (DIGI+) (2017-2025), the commission coordinates with relevant ministries aiming to enhance broadband infrastructure, frequency planning, and regulatory amendments. Part of its mission has already been completed. In 2021, the program was revised by the Executive Yuan to include the Smart Nation Program (2021-2025), which has begun promoting the digital transformation nationwide with the goal of achieving an innovative, inclusive, and sustainable smart country by 2030. As the lead agency of the Digital Infrastructure group, NCC facilitates various projects in the Forward-looking Infrastructure Development Program with 5G with view to facilitating the best possible digital infrastructure and ensuring it is universally accessible.

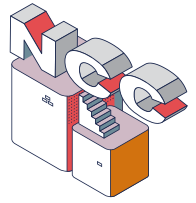
It has become commonplace for the people to shop and pay electronically; moreover, during the pandemic, even more people have turned to electronic payments and have also been required to register with their real names to enter many places. All these activities, of course, rely on mobile communications and are based on the transmission of frequency resources. In that light, maximizing benefits of limited frequency resources has become and even more critical issue for regulators worldwide when new batches of frequency are released. The first batch of 5G licenses in Taiwan was released in February 2020; meanwhile, NCC continues to observe the practices of various developed nations in their preparations for the 5G network, ecosystems and technological developments and maturity with view to preparing frequency resources and frequency management policies. It has also begun accepting applications for the establishment of telecommunications networks

for technological experiments and research and development allowing industry the choice of developing 5G vertical field applications to fit its own needs.

The work of the commission has already made mobile communications in our daily lives a lot easier. NCC has long facilitated the fixed broadband infrastructure so that people in Taiwan can benefit from and enjoy broadband applications, such as ultra-high-quality videos, IoT, smart homes and cloud technology, regardless of time and place. It has also been promoting digital access in remote areas and among the underprivileged so they too can benefit from high-speed broadband networks at a fair and reasonable price.

Furthermore, over the past few years, NCC has achieved remarkable results in establishing communications platforms for disaster prevention and relief operations and continues to assess where enhanced mobile communication infrastructure is urgently needed with a focus on potential disaster areas and remote areas in order to respond to even more complex emergency situations, ultimately protecting lives and property. The commission is also aiming to improve mobile communications and signal coverage along major hiking trails, primarily in the mountains at mountain lodges and at accident black spots so as to enhance communications capabilities during emergency rescues. Moreover, NCC is cooperating with other related parties improving the quality of broadband signals on mass transportation with the vision of people enjoying quality internet experience regardless of physical limitations.

As emerging information and communications technologies advance, information security protection has already become an indispensable aspect of digital infrastructure. In that light, NCC promotes information security management among non-government agencies



in communications, strengthens the information security protection capacity of communications businesses, and ensures that operators implement security protection at critical infrastructure, such as equipment rooms, enhancing the capacity of the NCCSC. In terms of the security of connected devices, the commission promotes the testing of IoT equipment for information security with view to protecting the rights and interests of consumers and enhancing the international competitiveness of the domestic manufacturing industry.

In light of the significant digital business opportunities brought by 5G and the resulting development of the internet society, NCC has formulated the Telecommunications Management Act, which was promulgated by the Executive Yuan for enactment in July 2020. The act abandons the tight controls used in the franchise system by adopting a hierarchical control structure, requiring telecommunications operators to register for a business license, easing restrictions on setting up and using telecommunications networks, and introducing a flexible frequency application mechanism.

## Development of the Communications Industry

The communications industry is where a nation demonstrates its technological strengths, as well as its culture; hence, NCC is committed to facilitating an environment with high-quality communications to strengthen communications industry further.

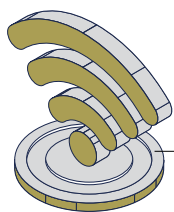
With view to ensuring all people in Taiwan can enjoy high-quality, low-cost, diverse and innovative services, the commission reviews and adjusts wholesale prices of telecommunications products and mobile internet access fees on an

ongoing basis. By reducing wholesale prices, NCC can align with global trends of wholesale prices and encourage greater innovation and competition. Reduced mobile internet access charge boosts investment in the latest and most cost-effective networks so as to provide more effective, diverse and innovative services.

With the advent of the digital era, it has become necessary for the television industry to adapt to changes. NCC has been promoting increased high-definition of cable television channels and through administrative measures, encourages cable television operators to produce and broadcast programs with high-definition (HD) technologies; the commission plans to continue implementing this policy into the future.

According to the Fundamental Communications Act and the NCC Organization Act, the commission is obligated to facilitate the sound development of communications, protect the professionalism and autonomy of the media and promote the development of cultural diversity. As such, it conducts training activities with the objective of enhancing professionalism of the broadcast industry, while enhancing internal control and self-regulation mechanisms to fulfill their social responsibilities, ultimately improving quality of the media content production.

We can note that improving media literacy education is an issue most countries agree on. Various nations, such as the US and UK for example, aim to deepen public understanding and interpretation of media and its credibility with the aim of preventing the spread of disinformation. NCC facilitates the connection of content broadcasting production teams with civic groups and audiences, improving the awareness of related literacy among broadcasters and audiences and creating a healthier media environment.



## Digital Equality

Taiwan is actively promoting digital infrastructure and a sound communications environment; meanwhile, it needs to take into account the different communication needs of people to ensure everyone can access various services, regardless of place or physical or mental condition.

Participating in the Forward-looking Infrastructure Development Program, NCC coordinates with various ministries and civic groups to implement the Digital Equality Promotion Program, bringing Gbps-level fixed broadband internet to remote areas to ensuring accessibility to those in remote areas.

In terms of internet accessibility, the commission actively promotes web accessibility testing and certification marks within the public sector. During 2020, it selected 200 popular private enterprise websites for website accessibility assessment and testing and plans to train more accessibility testing personnel and increase the number of outsourced testing institutes for the development of information equality.

When it comes to protecting the rights of the physically and mentally disabled, the commission allows broadcasters to adopt self-regulation mechanisms and determines various regulations on the production and broadcasting for the industry to refer to when they formulate self-regulation or rules on production and broadcasting. Should discriminatory remarks or descriptions occur in media content, NCC deals with the matter in accordance with the law and requests the broadcaster in question to undertake corrective measures. In addition, the commission attaches great importance to reporting and spreading emergency information properly; hence, to protect the rights and interests of the disabled, it

urges broadcasters to include a complete image of a sign language interpreter when imparting important messages. In the future, the commission shall continue to use the license renewal review / assessment mechanism to encourage broadcasters to safeguard digital equality and fulfill social responsibilities.

Digital equality is one of the core values that pushes modern technology to drive paradigm shifts; as such, access to the internet has become a civil right. In the face of the COVID-19 pandemic, the government has greatly depended on television, radio and smartphone devices to deliver accurate information, such as awareness and information on vaccines, relief measures, and tackling disinformation demonstrating the importance of digital equality. NCC remains committed to increasing digital opportunities, reducing the digital divide and protecting the civil rights of different ethnic groups and the disadvantaged or disabled.

## Future Legislation

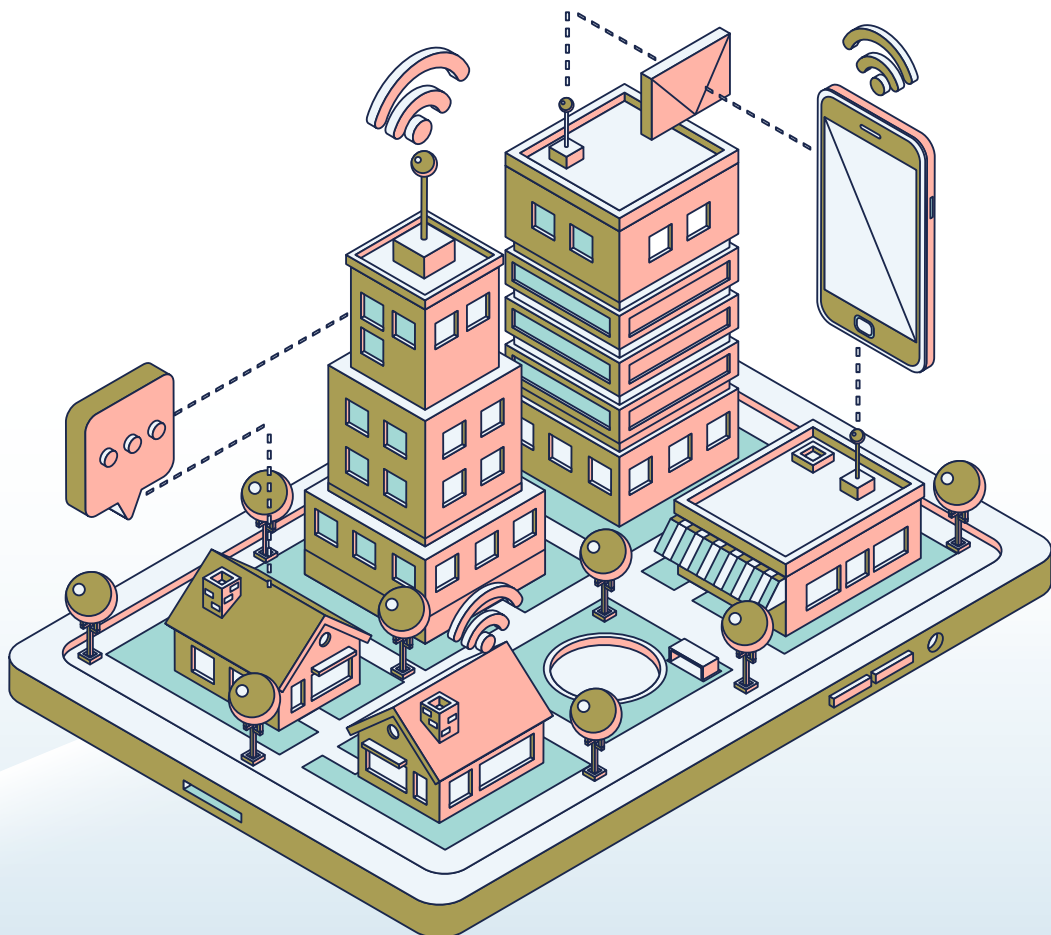
The Communications White Paper published by NCC conducted research and analysis on the issues encountered undertaking amendments to regulations concerning the Radio and Television Act, the Cable Radio and Television Act and the Satellite Broadcasting Act, as well as civil rights-related regulations. A comprehensive understanding of the three radio and television-related acts, as well as the enforcement rules under them and relevant executive orders, has been acquired as part of preparations for communications and convergence legislation.

In addition, advances in communications technology have led to rapid changes in the global audio-visual industry, especially OTT TV. Its ability to cross industries and borders has brought

new challenges to management and regulatory thinking. Many nations have been discussing how this situation can be properly managed so as to protect both the OTT TV viewing rights of the public and the cultural rights of the country. Therefore, with the aim of promoting OTT TV development, protecting viewing rights and safeguarding culture, the commission is drafting the Over-the-Top TV Act with a focus of control of the large issues but allowing the small with a light-touch approach, with the hope of being conducive to the development of OTT TV industry in Taiwan.

Faced with the development of the communications industry that is driven by

broadband networks and complete digitization, the NCC-proposed draft Digital Communications Act introduces the concepts of internet governance and innovative application to actively respond to the needs of the times. The commission shall continue soliciting feedback on the draft Digital Communications Act from all social groups with the aim of establishing a basic framework for internet use, protecting the rights and interests of internet users and establishing an environment beneficial to the development of the future digital economy.





## **NCC Performance Report 2020**

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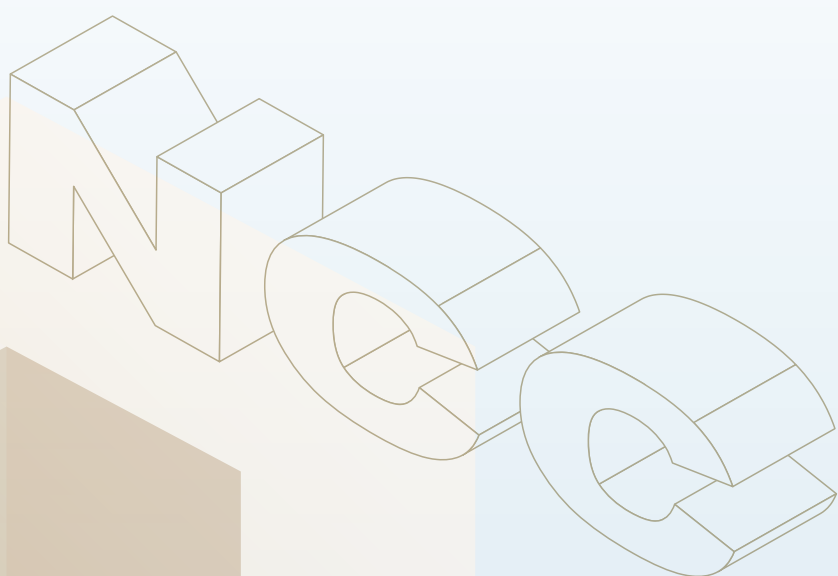
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