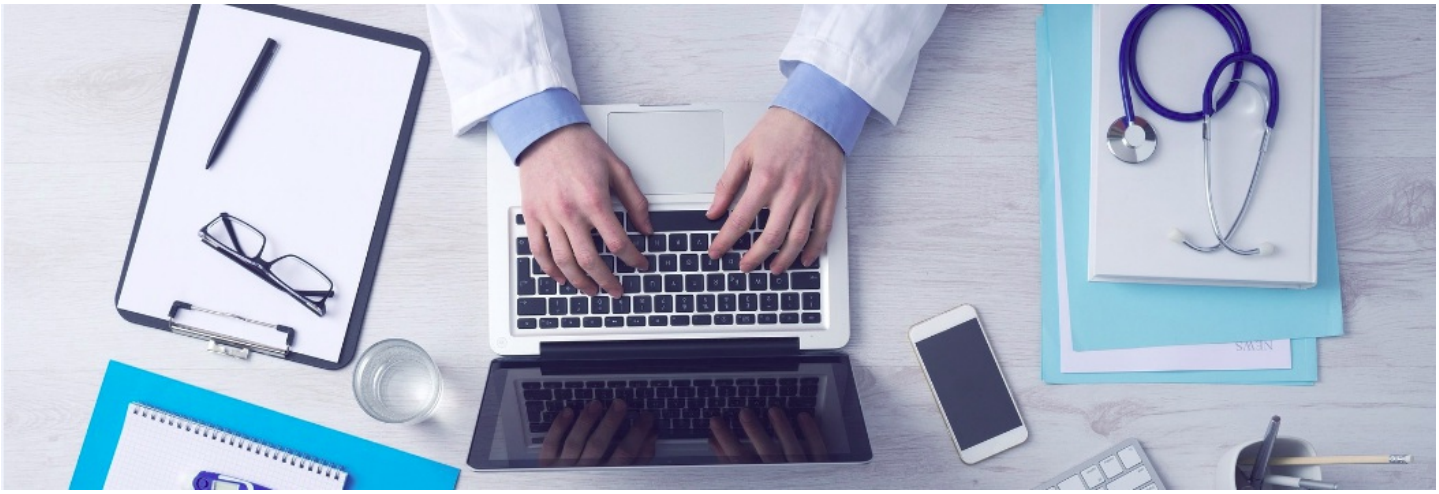
Research on Policies for building a digital nation in Recent Years (2016-2017)



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Recent years, the government has already made some proactive actions, including some policies and initiatives, to enable development in the digital economy and fulfill the vision of Digital Nation. Those actions are as follows:

1. CREATING THE "FOOD CLOUD" FOR FOOD SAFETY CONTROLS

Government agencies have joined forces to create an integrated "food cloud" application that quickly alerts authorities to food safety risks and allows for faster tracing of products and ingredients. The effort to create the cloud was spearheaded by the Executive Yuan's Office of Food Safety under the leadership of Vice Premier Chang San-cheng on January 12, 2016.

The "food cloud" application links five core systems (registration, tracing, reporting, testing, and inspection) from the Ministry of Health and Welfare (MOHW) with eight systems from the Ministry of Finance, Ministry of Economic Affairs, Ministry of Education (MOE), Council of Agriculture and Environmental Protection Administration.

The application gathers shares and analyzes information in a methodical and systematic manner by employing big data technology. To ensure the data can flow properly across different agencies, the Office of Food Safety came up with several products not intended for human consumption and had the MOHW simulate the flow of those products under import, sale and supply chain distribution scenarios. The interministerial interface successfully analyzed the data and generated lists of food risks to help investigators focus on suspicious companies.

Based on these simulation results, the MOHW on September 2, 2015, established a food and drug intelligence center as a mechanism for managing food safety risks and crises on the national level. The technologies for big data management and mega data analysis will enable authorities to better manage food sources and protect consumer health.

In addition, food cloud systems established by individual government agencies are producing early results. The MOE, for instance, rolled out a school food ingredient registration platform in 2014, and by 2015 had implemented the system across 22 countries and cities at 6,000 schools supplying lunches for 4.5 million students. This platform, which made school lunch ingredients completely transparent, received the 2015 eAsia Award as international recognition for the use of information technology in ensuring food safety.

2. REVISING DIGITAL CONVERGENCE ACTS

On 2016 May 5th, the Executive Yuan Council approved the National Communications Commission's (NCC) proposals, drafts of "Broadcasting Terrestrial and Channel Service Suppliers Administration Act", "Multichannel Cable Platform Service Administration Act", "Telecommunications Service Suppliers Act", "Telecommunications Infrastructure and Resources Administration Act", "Electronic Communications Act", also the five digital convergence laws. They will be sent to the Legislature for deliberation. But in the end, this version of five digital convergence bills did not pass by the Legislature.

However, later on, November 16, 2017, The Executive Yuan approved the new drafts of "Digital Communication Act" and the "Telecommunication Service Management Act".

The "Digital Communication Act" and the "Telecommunication Service Management Act" focused summaries as follows:

1. The digital communication bill

A. Public consultation and participation.

B. The digital communication service provider ought to use internet resource reasonability and reveal network traffic control measures.

C. The digital communication service provider ought to reveal business information and Terms of Service.

D. The responsibility of the digital communication service provider.

2. The telecommunication service management bill

A. The telecommunication service management bill change to use registration system.

B. The general obligation of telecommunications to provide telecommunication service and the special obligation of Specific

telecommunications.

C. Investment, giving, receiving and merging rules of the telecommunication service.

Telecommunications are optimism of relaxing rules and regulations, and wish it would infuse new life and energy into the market. Premier Lai instructed the National Communications Commission and other agencies to elucidate the contents of the two communication bills to all sectors of society, and communicate closely with lawmakers of all parties to build support for a quick passage of the bills.

3. FOCUSING ON ICT SECURITY TO BUILD DIGITAL COUNTRIES

The development of ICT has brought convenience to life but often accompanied by the threat of illegal use, especially the crimes with the use of new technologies such as Internet techniques and has gradually become social security worries. Minor impacts may cause inconvenience to life while major impacts may lead to a breakdown of government functions and effects on national security. To enhance the capability of national security protection and to avoid the gap of national security, the Executive Yuan on August 1st 2016 has upgraded the Office of Information and Communication Security into the Agency of Information and Communication Security, a strategic center of R.O.C security work, integrating the mechanism of the whole government governance of information security, through specific responsibility, professionalism, designated persons and permanent organization to establish the security system, together with the relevant provisions of the law so that the country's information and communication security protection mechanism will become more complete. The efforts to the direction could be divided into three parts:

First, strengthening the cooperation of government and private sectors of information security: In a sound basis of legal system, the government plans to strengthen the government and some private sectors' information security protection abilities ,continue to study and modify the relevant amendments to the relevant provisions, strengthen public-private collaborative mechanism, deepen the training of human resources and enhance the protection of key information infrastructure of our country.

Second, improving the information and communication security professional capability: information and communication security business is divided into policy and technical aspects. While the government takes the responsibility for policy planning and coordination, the technical service lies in an outsourcing way. Based on a sound legal system, the government will establish institutionalized and long-term operation modes and plan appropriate organizational structures through the discussion of experts and scholars from all walks of life.

Third, formulating Information and Communication Safety Management Act and planning of the Fifth National Development Program for Information and Communication Security: The government is now actively promoting the Information and Communication Safety Management Act as the cornerstone for the development of the national digital security and information security industry. The main content of the Act provides that the applicable authorities should set up security protection plan at the core of risk management and the procedures of notification and contingency measures, and accept the relevant administrative check. Besides the vision of the Fifth National Development Program for Information and Communication Security which the government is planning now is to build a safe and reliable digital economy and establish a safe information and communication environment by completing the legal system of information and communication security environment, constructing joint defense system of the national Information and Communication security, pushing up the self-energy of the industries of information security and nurture high-quality human resources for elite talents for information security.

4. THE DIGITAL NATION AND INNOVATIVE ECONOMIC DEVELOPMENT PLAN

The Digital Nation and Innovative Economic Development Plan (2017-2025) known as "DIGI+" plan, approved by the Executive Yuan on November 24, 2016. The plan wants to grow nation's digital economy to NT $ 6.5 trillion (US$205.9 billion), improve the digital lifestyle services penetration rate to 80 %, increase broadband connections to 2 Gbps, ensure citizens' basic rights to have 25 Mbps broadband access, and put our nation among the top 10 information technology nations worldwide by 2025.

The plan contains several important development strategies: DIGI+ Infrastructure: Build infrastructure conducive to digital innovation. DIGI+ Talent: Cultivate digital innovation talent. DIGI+ Industry: Support cross-industry transformation through digital innovation. DIGI+ Rights: Make R.O.C. an advanced society that respects digital rights and supports open online communities. DIGI+ Cities: Build smart cities through cooperation among central and local governments and the industrial, academic and research sectors. DIGI+ Globalization: Boost nation's standing in the global digital service economy.

The plan also highlights few efforts:

First is to enrich "soft" factors and workforce to create an innovative environment for digital development. To construct this environment, the government will construct an innovation-friendly legal framework, cultivate interdisciplinary digital talent, strengthen research and develop advanced digital technologies.

Second is to enhance digital economy development. The government will incentivize innovative applications and optimize the environment for digital commerce.

Third, the government will develop an open application programming interface for government data and create demand-oriented, one-stop smart government cloud services.

Fourth, the government will ensure broadband access for the disadvantaged and citizens of the rural area, implement the participatory process, enhance different kinds of international cooperation, and construct a comprehensive humanitarian legal framework with digital development.

Five is to build a sustainable smart country. The government will use smart network technology to build a better living environment, promote smart urban and rural area connective governance and construction and use on-site research and industries innovation ecosystem to assist local government plan and promote construction of the smart country.

In order to achieve the overall effectiveness of the DIGI + program, interdisciplinary, inter-ministerial, inter-departmental and inter-departmental efforts will be required to collaborate with the newly launched Digital National Innovation Economy (DIGI +) Promotion Team.

5. ARTIFICIAL INTELLIGENCE SCIENTIFIC RESEARCH STRATEGY

The Ministry of Science and Technology (MOST) reported strategy plan for artificial intelligence (AI) scientific research at Cabinet meeting on August 24, 2017. Artificial intelligence is a powerful and inevitable trend, and it will be critical to R.O.C.'s competitiveness for the next 30 years.

The ministry will devote NT$16 billion over the next five years to building an AI innovation ecosystem in R.O.C. According to MOST, the plan will promote five strategies:

1. Creating an AI platform to provide R&D services

MOST will devote NT$5 billion over the next four years to build a platform, integrating the resources, providing a shared high-speed computing environment and nurturing emerging AI industries and applications.

2. Establishing an AI innovative research center

MOST will four artificial intelligence innovation research centers across R.O.C. as part of government efforts to enhance the nation's competitiveness in AI technology. The centers will support the development of new AI in the realms of financial technology, smart manufacturing, smart healthcare and intelligent transportation systems.

3. Setting up AI robot maker spaces

An NT$2 billion, four-year project assisting industry to develop the hardware-software integration of robots and innovative applications was announced by the Ministry of Science and Technology.

4. Subsidizing a semiconductor "moonshot" program to explore ambitious and groundbreaking smart technologies

This program will invest NT$4 billion from 2018 through 2021 into developing semiconductors and chip systems for edge devices as well as integrating the academic sector's R&D capabilities and resources. the project encompasses cognitive computing and AI processor chips; next-generation memory designs; process technologies and materials for key components of sensing devices; unmanned vehicles, AR and VR; IoT systems and security.

5. Organizing Formosa Grand Challenge competitions

The program is held in competitions to engage young people in the development of AI applications.

The government hopes to extend R.O.C.'s industrial advantages and bolster the country's international competitiveness, giving R.O.C. the confidence to usher in the era of AI applications. All of these efforts will weave people, technologies, facilities, and businesses into a broader AI innovation ecosystem.

6. INTELLIGENT TRANSPORTATION SYSTEM PLANS

Ministry of Transportation and Communications (MOTC) launched plans to develop intelligent transportation systems at March 7th in 2017. MOTC integrates transportation and information and communications technology through these plans to improve the convenience and reduce the congestion of the transportation. These plans combine traffic management systems for highways, freeways and urban roads, a multi-lane free-flow electronic toll collection system, bus information system that provides timely integrated traffic information services, and public transportation fare card readers to reduce transport accidence losses, inconvenience of rural area, congestion of main traffic arteries and improve accessibility of public transportation.

There are six plans are included: 1. Intelligent transportation safety plan; 2. Relieve congestion on major traffic arteries; 3. Make transportation more convenient in Eastern Taiwan and remote areas; 4. Integrate and share transportation resources; 5. Develop "internet-of-vehicles" technology applications; and 6. Fundamental R&D for smart transportation technology.

These plans promote research and development of smart vehicles and safety intersections, develop timely bus and traffic information tracking system, build a safe system of shared, safe and green-energy smart system, and subsidize the large vehicles to install the vision enhancement cameras to improve the safety of transportation. These plans also use eTag readers, vehicle sensors and info communication technologies to gather the traffic information and provide timely traffic guidance, reduce the congestion of the traffic flow. These plans try to use demand-responsive transit system with some measures such as combine public transportation and taxi, to improve the flexibility of the public traffic service and help the basic transportation needs of residents in eastern Taiwan and rural areas to be fulfilled. A mobile transport service interface and a platform that integrating booking and payment processes are also expected to be established to provide door-to-door transportation services and to integrate transportation resources. And develop demonstration projects of speed coordination of passenger coach fleets, vehicle-road interaction technology, and self-driving car to investigate and verify the issues in technological, operational, industrial, legal environments of internet-of-vehicles applications in our country. Last but not least, research and development on signal control systems that can be used in both two and four-wheeled vehicles, and deploy an internet-of-vehicles prototype platform and develop drones traffic applications.

These plans are expected to reduce 25% traffic congestion, 20% of motor vehicle incidence, leverage 10% using rate of public transportation, raise 20% public transportation service accessibility of rural area and create NT$30 billion production value. After accomplishing these targets, the government can establish a comprehensive transportation system and guide industry development of relating technology areas.

Through the aforementioned initiatives, programs, and plans, the government wants to construct the robust legal framework and policy environment for digital innovation development, and facilitate the quality of citizens in our society.

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