Asia-Pacific
Economic Cooperation

Facilitating Innovative Economic Development of "Internet + Service Industry" in APEC Region

APEC Telecommunications and Information Working Group

May 2017

APEC Project: TEL 01/2015A

Produced by
Wang Yue
China Academy of Telecommunication Research
Ministry of Industry and Information Technology
52 Hua Yuan Bei Road, Beijing, China 100191
Tel: (86 10) 6802 6124
Fax: (86 10) 6802 6830
Email: wangyue@catr.cn / wangyue@caict.ac.cn

For
Asia-Pacific Economic Cooperation Secretariat
35 Heng Mui Keng Terrace
Singapore 119616
Tel: (65) 68919 600
Fax: (65) 68919 690
Email: info@apec.org
Website: www.apec.org

APEC# 217-TC-01.1

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I. Executive Summary

1. Background

The Internet Economy is playing an increasingly significant role in promoting innovative development and empowering inclusive economic participation. Information and communications technologies have become integrated into many traditional industries, transforming how they do business and resulting in a new, more integrated economic ecosystem. Furthermore, this is has led to the development of new business models in many key service industries, including Health Care, Education, Transportation, and Financial Services.

In recognition of the growing importance of the Internet Economy to the region, the 22nd APEC Economic Leaders' Meeting (AELM) endorsed the APEC Initiative of Cooperation to promote the Internet Economy in 2014, and SOM established an Ad-Hoc Steering Group (AHSGIE) to guide the discussion on Internet Economy issues. In March 2015, the 10th APEC Telecommunications and Information Ministers (TELMIN10) emphasized the importance of promoting the Internet Economy in drawing up the APEC TEL 2016-2020 Strategic Action Plan. This project corresponds strongly with Rank 1 in the annual APEC Funding Criteria of "promoting regional economic integration via free and open trade and investment".

A workshop on Facilitating Innovative Economic Development of "Internet + Service Industry" was conducted in at the 53rd Meeting of the Telecommunications and Information Working Group (TEL53) by the People's Republic of China. The sponsoring economies included Australia; Brunei Darussalam; Hong Kong, China; Japan; New Zealand; Papua New Guinea; Russia; Chinese Taipei; and, Viet Nam.

Through this workshop, policy makers, regulators, private sector stakeholders and academia both from developed economies and developing economies had an opportunity to share their experiences on Facilitating Innovative Economic Development of "Internet + Service Industry".

This study report is one part of the project of Workshop on Facilitating Innovative Economic Development of “Internet + Service Industry”.

2. Objectives

The main objectives of this project are:

- To provide a platform for APEC members to discuss internet economy related issues, with a view to improving productivity in the traditional service sector by encouraging the greater adoption and use of ICTs. This objective is aimed at improving regional understanding of favourable regulatory policies, technological innovations, application frameworks, application development etc. which might help enable the adoption of ICTs by businesses in the service sector.
- To create a framework of the key elements needed to support the development of the “Internet + Service Industry”. This would include identifying the benefits that enable “Internet + Service” to deliver in APEC region. It would also include identifying the main problems and challenges APEC economies are facing in facilitating development of “Internet + Service Industry” in their own domestic service sectors. This objective is aimed at collecting materials to support the development of advice in Objective 3 (see below).
- To conduct case-studies and give advice to help economies recognize and capitalize on the benefits, and address the main problems and challenges identified in Objective 2 (see above). This would include recommendations on favourable regulatory and policy options. This objective is aimed at supporting policy capacity in developing countries, with a view to bridging the digital divide and achieving balanced development in the region.

3. Methods

- Gather and process information and perform analysis on the status and the trend of “Facilitating Innovative Economic Development of ‘Internet + Service Industry’” in the APEC region;

- By the study on the information and studies on Facilitating Innovative Economic

Development of “Internet + Service Industry”, prepare a speech material for the workshop;

- In coordination with Project Overseer, participate in the workshop to report on the key findings;

- As reference of the materials provided from the speeches and discussion in the workshop, formulate the final version study report;

- Submit a study report to TEL, provide an electronic copy to the APEC Secretariat, and identify other channels for dissemination of report.

4. Glossary

Internet of Things (IoT)：IoT is the network of physical objects or "things" embedded with electronics, software, sensors, and network connectivity, which enables these objects to collect and exchange data. The Internet of Things allows objects to be sensed and controlled remotely across existing network infrastructure, creating opportunities for more direct integration between the physical world and computer-based systems, and resulting in improved efficiency, accuracy and economic benefit.

Internet Economy：Internet economy refers to business conducted through markets whose infrastructure is based on the Internet and World Wide Web.

Big Data：Big data is a broad term for data sets so large or complex that traditional data processing applications are inadequate. Challenges include analysis, capture, data curation, search, sharing, storage, transfer, visualization, and information privacy. The term often refers simply to the use of predictive analytics or other certain advanced methods to extract value from data, and seldom to a particular size of data set. Accuracy in big data may lead to more confident decision making.

5. Executive Summary

- The development of “Internet + Service Industry” infrastructure will directly promote the connectivity of physical ICT infrastructure.
- The innovative service models will profoundly affect all aspects of social production, consumption and operation, and will significantly contribute to the institution and people-to-people connectivity in both urban and rural area.
- As an emerging Internet economy model, “Internet + Service Industry” plays an important role in boosting digital economic demand, driving the business transformation, encouraging the development of SMEs, etc.
- Governments needs to play a role in the development of “Internet + Service Industry”, not just to enact and execute on strong policies to foster innovation but also to strengthen the regional cooperation, such as establish the sustainable and cohesive policy frameworks that mandate cross-border collaboration for all policy, economic and social initiatives.

II. Background Information

1. The Basic Concept of “Internet +”

“Internet +” as a new type of business in the Internet development is a new form of economic and social development created in the evolution of the Internet. “Internet +” is the further practice of Internet thinking to promote the continuous evolution of economic form and stimulate the vitality of social and economic entities. It provides a broad network platform for reform, innovation and development. To put it simply, “Internet +” is “Internet + conventional industries”, but this does not mean to simply add up the two. It should be to achieve in-depth integration between the Internet and conventional industries by adopting ICT and the Internet platform so as to create a new form of development.

“Internet +” will have a huge impact on the life and production of mankind with the following six core characteristics. The first one is cross-industrial integration. “+” means cross-industrial reform and opening to reshape integration. There is a large span between conventional industries and the Internet, the integration of the two is an innovation. The integration between the industries can also be deemed as a process to transform customer consumption into investment to jointly participate in innovation. The second one is innovation-driven. The Internet thinking can be adopted to seek change and self-revolution, and this enables to more effectively exert the power of innovation. The third one is reshaping the structure. Information revolution, globalization and the Internet have broken the original social structure, economic structure, geographical structure and cultural structure. The power, rules of procedure and the right to speak are constantly changing. The fourth one is respecting for human nature. The glory of human nature is the most fundamental force to promote scientific and technological progress, economic growth, social progress and cultural prosperity, and the strong power of the Internet also originates from the greatest respect for human nature, the awe of human experience and the high value on the exertion of creativity. Such is the case with the sharing the economy. The fifth one is ecological openness. The ecology itself has the characteristic of openness. To promote “Internet +”, one of the important directions is to remove the links that restrict innovation in the past and connect the isolated innovation so that entrepreneurs may have the opportunity to realize their value. The sixth one is connecting everything. Connections are hierarchical, and connecting everything is the goal of “Internet +”.

2. The Development Significance of “Internet +”

The development process of “Internet +” in China:

In November 2014, Chinese Premier Li Keqiang stated at the first World Internet Conference that the Internet is a new tool for mass entrepreneurship and innovation. “Mass entrepreneurship and innovation” is an important theme in the government work report this year, and it is also dubbed as the “new engine” to improve the performance

of and upgrade China's economy. It is quite easy to see its important role.

In March 2015, at the NPC & CPPCC 2015 Annual Sessions, the NPC delegate Ma Huateng submitted the motion entitled *Proposal on Promoting China's Economic And Social Innovation and Development with "Internet +" as the Driving Force*, which expressed his proposals and views on economic and social innovation. Ma Huateng said that "Internet +" refers to the application of the internet platform and information and communication technology to combine the Internet with all industries including conventional industries so as to create a new ecology in new areas. He hoped that this ecological strategy can be adopted by the state and become a national strategy.

On March 5, 2015, at the Third Session of the 12th National People's Congress, Premier Li Keqiang first proposed the "Internet +" Action Plan in his government work report. Li Keqiang stated in the government work report that "We will develop the "Internet Plus" Action Plan to integrate the mobile Internet, cloud computing, big data, and the Internet of Things with modern manufacturing, to guide Internet-based companies to increase their presence in the international market."

Signed by Premier Li Keqiang on July 4, 2015, the State Council has recently issued the *Guiding Opinions of the State Council on Actively Promoting the "Internet Plus" Action*, which is an import move to promote the expansion of the Internet from the consumer sector to the production sector, accelerate the upgrading of industrial development level, enhance the innovation capacity of all industries and create new advantages and new growth drivers in economic and social development. The action plan covers not only manufacturing, agriculture, finance, energy and other specific industries, but also environment, pension, medical care and other aspects closely related to people's lives.

On December 16, 2015, the opening ceremony of the Second World Internet Conference was held in Wuzhen, Zhejiang. At the "Internet +" forum, jointly proposed by China Internet Development Foundation, Baidu, Alibaba and Tencent, "China Internet plus Union" was established.

The practices of “Internet +” are prevailing throughout China, greatly changing the economic and social outlook. Its inexhaustible power comes from three aspects:

First, the formation of new information infrastructure. The new infrastructure which “Internet +” relies on can be summarized as the three parts of “cloud, network and terminal”. “Cloud” refers to the infrastructure of cloud computing and big data. The innovation of business model depends on the ability to use data, while the infrastructure of cloud computing and big data, like water and electricity, make it possible for users to use computing resources conveniently and at low-costs. “Network” not only includes the existing “Internet”, but also extends to the “Internet of things”. The carrying capacity of network is increasingly improved, and new values continue to be excavated. “Terminal” refers to personal computers, mobile devices, wearable devices and sensors that user direct contact with and even the application of existence form of software. “Terminal” is the source of data and the interface to provide services.

Second, the relaxation of data resources. The activities of human society are directly related to the creation, transmission and use of information (data). The continuous breakthroughs in information technology have broken the tight coupling between data and other elements and enhanced their mobility so as to enhance the scope of use and value and ultimately improve the economic and social operation efficiency. The rapid development of information technology has contributed to the explosive growth of amount of data and processing capacity, the economic society of human beings has also entered the “age of big data”. The accumulation, exchange analysis and use of massive data in the economic field have generated unprecedented insight and knowledge, greatly promoting the improvement of production efficiency, providing an extraordinary force to fully tap the value of data elements.

Third, the changes in the form of division of labor caused by the previous two aspects. The construction and enhancement of the capacity of information infrastructure has accelerated the penetration of data elements in various industrial sectors and directly promoted the significant reduction in production and transaction costs, thus profoundly affecting the economic form. The new information infrastructure (“cloud, network and

terminal”), new production elements (big data) and new network of division of labor (new large-scale, socialized form of division of labor) provide inexhaustible driving force for releasing the energy “Internet +”.

3. Profound Significance of “Internet + Services”

With further implementation of the “Internet +” action plan, the full penetration of the Internet into all walks of life, especially the service sector has started to gather pace and gradually become a new engine for the development of the service sector. “Internet + services” has not only changed people's lives, but also changes the traditional service sector and promoted economic restructuring and upgrading. In the meanwhile, it has given birth to a number of quality enterprises in mobile Internet, Internet finance and other areas. These enterprises that rely on the Internet for survival provide a broad growth space for SMEs while achieving rapid self-growth.

“Internet + services” can not only create double engines for economic development, reshape economic structure, bring more increments for the economy and help to create core competitiveness, but also provide a more convenient channel for the government to address the employment issues and promote the service industries. On the one hand, “Internet + services” has constantly given birth to new businesses, new models and new forms, created the Internet-based new engines for economic development and promoted “mass entrepreneurship and innovation”. On the other hand, the conventional industries continue to be integrated with the Internet, the conventional industries and public services continue to be transformed and upgraded to provide the impetus for economic growth. The Internet as the infrastructure for and a tool to realize modern economic and social development is becoming increasingly important, and “Internet +” is expected to help address the information asymmetry and opaqueness and other problems in the original economic structure.

“Internet + services” provide a more convenient channel for the government to address the employment problems and encourage the development of services. Regardless of producer services or consumer services, the “outlet” of “Internet +”

provides the best opportunity for mass entrepreneurship and innovation. In particular, in this process, “Internet +” will have an impact on industrial transfer and thus change the relevance of employment and industrial transfer. With the increasing popularity of various intelligent terminals promotes the development of mobile Internet, which provides unprecedented opportunities for industrial transfer and employment, the emergence of micro-business and other new models has greatly reduced the entrepreneurship and employment thresholds, greatly enhanced the liquidity of labor market and created new approaches to address the structural unemployment problems.

“Internet + services” can help improve service quality. Accelerating the development of producer services can help promote stable economic growth. Giving full play to the important role of the Internet industry and information services in supporting all aspects of producer services will help seek a new growth point for productive services. We should vigorously strengthen the construction of information infrastructure, promote the formation of information sharing and competition mechanism, and drive the development of producer services under the support of information services. Through the establishment of a guiding fund and other measures, we should increase the investment in producer services, adjust and improve the price policies for producer services and change the differential treatment of producer services.

“Internet + services” can improve people's livelihood services and enhance people's well-being. Safeguarding the people's livelihood and improving people's livelihood is the essence for the rejuvenation of the nation. The innovation in integration of the Internet, public utilities and life services is conducive to optimizing the allocation of resources, enriching the contents of services and effectively improving the service level. “Internet + livelihood services” covers all important areas closely related to people's daily lives.

4. Related Foreign Policies and Practices

The US Internet Economy [1]:

The Internet economy of the US has become an important part of its society. If the Internet economy is considered an independent industry, it will also surpass education, construction and agriculture in the US. The Internet industry directly or indirectly benefits millions of netizens in the US and ensures the healthy functioning of the US economy, including GDP growth, industrial development, employment opportunities, consumer surplus, and improvement of income earning by practitioners. The results calculated previously have underestimated the economic value of the Internet industry.

The Internet industry has brought great value to the US economy. Particularly, its contribution to GDP is more than many conventional industries regarded as “economic engines”. In 2014, the Internet industry's total output value (966.2 billion US dollars) accounted for 6% of the US GDP, almost twice the proportion 7 years ago. In recent years, the contribution of the Internet industry in nominal GDP has outstripped many important areas such as construction, computer and electronics, broadcasting and telecommunications, accommodation and catering services.

The economic value of the Internet industry has increased significantly, reflecting its penetration and existence in every corner of the US economic life. The Internet industry consists of thousands of interactive networks, and those involved in operation and maintenance include service providers, private enterprises, universities, governments, and other institutions. Among the top five Internet companies in the world in terms of income level and number of employees, three are from the United States (statistics in 2014) which are Google, Facebook and Amazon. China’s Alibaba and Tencent ranked 3rd and 5th.

With the popularization of Internet activities and the development of the Internet industry, employment opportunities are increasing simultaneously. Network connection and dialogues among the industries, companies and people are increasing. Employees directly employed by Internet companies have grown significantly year after year. Compared with all other industries in the US, the proportion of Internet employees was 0.96% in 2007 and rose to 2.05%in 2012. In this period, the employees of many industries opted to leave construction, computer and electronics manufacturing,

transportation and warehousing, finance and insurance to join the Internet industry.

Russia's Electronic Economy & Trade Development [2].

In 2012, the Russian Government set a course to transfer economic and public activities in the electronic format, starting with E-government initiative. A series of measures undertaken by various federal authorities, aims to shift Russia's economy into an electronic format through the development of the necessary ICT infrastructure and platforms for e-commerce, government procurement, SME's export support etc.

Russian pays considerable attention to the following "physical" or offline aspects of the Internet trade as one of e-commerce's key elements:

- The universal access of the population to broadband and mobile Internet and television;
- Developed delivery system (it should be noted that the main delivery service in Russia is the Russian Post that has around 42 thousand offices in the Russian and has the widest coverage of the cities, towns and villages, involved in the net);
- Developed and trusted system of electronic payments (that is presented mainly by Yandex.Money, Qiwi wallet and online banking systems).

SME's export support is one of the most important factors for sustainable economy growth. Russia's Ministry of the Economic Development is implementing the initiative on the common favorable environment for export. It would include a wide range of services for the SMEs, which would like to export their products and services with the use of e-commerce mechanisms, namely promotion, customs support, logistics, access to information, development of secure payment systems, insurance and other services requires for e-commerce at the local and international levels. This work is conducted under the project "E-commerce as the driver for SME's activities in the local and international markets". The services will be developed by the Russian Export Center.

Russian presented in APEC the concept of Electronic Economy as the Russian vision of the global economic development. The concept brings together all the initiatives

taken in Russia and highlights the mission of the Electronic Economy as encouraging and enabling transparency of economic activities, inclusive growth, international economic cooperation, facilitation of labor engagement (including vulnerable groups), SMEs' participation in global economy, consideration of different levels of economic development and cultural diversity, immediate multilingual information sharing, facilitation of the GDP growth and increased efficiency of global economies.

The Australian Internet Economy[3]:

On 27 May 2015, the Government released the Telecommunications in New Developments policy. The aim of the policy is to ensure residents in new developments have ready access to modern telecommunications infrastructure. The policy seeks to achieve this goal as efficiently as possible by fostering effective competition between network providers. The Government consulted with the public and industry stakeholders on the policy. The Government continues to work with stakeholders to implement the policy.

Australia had published the Digital Transformation Agenda. The agenda pointed out that the Digital services are simpler, clearer and easier to use, and it is designed specifically to meet the needs and expectations of those people who will be using them. In addition, some exemplar projects are built, such as "Transforming Medicare enrolment with the Department of Human Services", "A citizenship appointment booking service with the Department of Immigration and Border Protection", "Simplifying international trade and imports with the Department of Immigration and Border Protection", "An outpatient appointment service with ACT Health", "Assisting Australians to start a business with the Department of Industry, Innovation and Science" and "Simplifying the retirement planning process for Queensland seniors with the Queensland Government". Furthermore, the Digital Transformation Agenda has created platforms for government. It's helpful to build blocks for other service, reduce duplication, make services more efficient and quicker to build, and consistent user experience.

The Australian Government announced the Digital Transformation Office (DTO) to deliver the Government's Digital Transformation Agenda. This agenda is a whole-of-government approach to government service delivery reform to maximise the potential of digital technology, to better meet the current and future needs of individuals and businesses interacting with government.

The DTO will be working to transform the design and delivery of government services so they are easy to find, simple to use and convenient to access in a safe and secure way. It will also reduce red tape and increase the efficiency of government service delivery.

The DTO was established as an Executive Agency on 1 July 2015 with Mr Paul Shetler appointed Chief Executive Officer for a term of 5 years following an international recruitment process conducted by the Department of Communications. The DTO will work with agencies to radically transform the design and delivery of government services so they are simpler, clearer, faster and more human.

The scope of this task covers all Government service delivery functions, across multiple agencies. It includes not only ensuring that all services are designed and delivered to allow a digital end-to-end experience, but also designing and implementing a consolidated approach to government service delivery face to face and by telephone. A critical component will also be delivering a strategy for assisting citizens who do not already fully utilise online methods for interacting with Government.

With a focus on citizen-centric models of service delivery, the tasks of the DTO will be closely scrutinised by citizens and businesses accessing government information online, and interacting with government agencies online.

Germany's Digital Economy[4]:

The German government is laying more emphasis on the digital economy. In the *2014 Annual Economic Report* issued by the Federal Ministry for Economic Affairs and Energy (BMWI), the word "digital" appeared 16 times. To promote the development of digital economy, the German government has launched the "Industry 4.0", "Digital Agenda (2014-2017)" and "Digital Strategy 2025". The Digital Strategy

2025 specifies the ideas of Germany in manufacturing transformation and construction of the future digital society at the national strategic level as well as the tools necessary for future digitalization.

The Digital Strategy 2025 for Germany introduced at the opening ceremony of the CeBIT in Hanover, Germany, is of great significance for Germany's development. As a guide to transforming the digital economy for the next decade, the strategy proposes ten steps towards the future: Creating a gigabit optical fiber network for Germany by 2025; launching the New Start-up Era: Assisting start-ups and encouraging cooperation between young companies and established companies; creating a regulatory framework for more investment and innovation; encouraging “smart networks” in key commercial infrastructure areas of our economy; strengthening data security and developing informational autonomy; enabling new business models for SMEs, the skilled craft sector and services; utilizing Industry 4.0 to modernize Germany as a production location; creating excellence in digital technology research, development and innovation; introducing digital education to all phases of life; and creating a Digital Agency as a modern center of excellence.

Cloud computing and big data technologies are bringing disruptive innovation, posing a threat to the status of traditional technology service providers. At present, the attitude of SMEs in Germany towards the digitalization in the commercial areas and internal process is too conservative. Most SMEs have underestimated the profound significance of digital reinvention, smaller enterprises often lay less emphasis on the use of digital technology. After the “Industry 4.0” proposed to deeply integrate information technology with industrial technology and improve productivity, many Germans are worried that this will lead to job losses, and digital reinvention also set higher requirements for the quality of workers.

Japan's Internet Economy:

Japan is actively promoting the application and international strategies of ICT. Japan's Internet started early and has high penetration rate. In 2015, Japan ranked 10^{th} in the world by Networked Readiness Index and 11^{th} in the world by Comprehensive

Communications Technology Development Index; The scale of Japan's ICT industry and overseas market is very large, especially the Internet games, animation, cartoon, music, social platform and other markets; communications and information giants are actively acquiring overseas enterprises and expanding overseas markets; Japan boasts sound Internet governance and rich experience in the aspects such as governance bodies, laws and industry self-discipline [5].

Japan has huge advantages in cloud services, e-commerce and other areas of the Internet. The cloud computing security rules joint designed and developed by Fujitsu, NEC, NTT and the telecom operator KDDI became the global security standards for cloud network services in 2014 and were considered critical to the bid data era in the future; Business Software Alliance (BSA), the world's largest organization in the information industry, evaluated Japan as the world's No. 1 country for 2 consecutive years by cloud computing technology and cloud application environment. Non-platform e-commerce website are very popular in Japan, many local brands will create their own independent B2C websites to independently support the entire commercial chain, including website design, network payment, logistics, warehousing and manufacturing [6].

The British Information Economy[7]:

The robust and sustained growth of the UK economy is attributed to the booming information economy. New approaches have been created for providing education, commercial and health services, and urban and architectural design has been optimized. Britain is well prepared for making use of the information economy to enhance its national comprehensive strength and optimize the welfare of citizens. In addition, the UK has a political and regulatory environment conducive to the development of the information economy, and information technology is widely used in social, business and government development.

The UK has advantages in data sciences. On the one hand, the UK has made great strides in computing algorithms, and universities have top-notch researchers in computer science. On the other hand, the UK has enormous historical data sets that are most complete in the world. In addition, the UK is leading the world in data openness,

and the benefits brought by open data include higher transparency and accountability, innovation in data connectivity and creation of economic value.

In terms of e-commerce, the UK has one of the world's most complex and competitive online markets. In all organizations and countries in the world, the UK has the highest personal purchase rate of online goods and services. The online market in the UK is most developed among the EU countries, accounting for more than a third of the total EU online markets.

Viet Nam's Internet Economy[8]:

The Internet industry has an important role of not only over the world but also in Viet Nam. There are a great of Internet services and applications via Internet industry, which has impacted greatly on Viet Nam economy. The Internet industry directly or indirectly gives effective benefits for other industries, such as business, technology, agriculture, information and telecommunications, heathy and so on. As a result, Viet Nam's Internet industry contributes to GDP growth and improves the value of Vietnamese lives.

The development of Viet Nam Internet resources impacts on increase of Internet connection of other fields, which improves the relationship between provinces together, individuals and companies, providers and customers etc. All most impacts of the Viet Nam Internet development contribute Viet Nam's GDP. The Viet Nam Internet has been developed for nearly 20 years. Up to now, Viet Nam has 45.5 million Internet users (52% of population); 28 million social network users are (31% of population). Viet Nam has more than one hundred and twenty eight millions mobile subscribers, more than thirty six million Mobile broadband Internets. Averaging thirty percent of population uses the internet to find products, services; twenty four percent buy products and services via the Internet.

All in all, Internet economy pays an important role in Viet Nam economy. The result of Internet development promotes Viet Nam economy and improves the quality of the services, reduces cost, reduces advertisement cost and other costs in other areas. The development of internet helps matching supply and demand, increases competitiveness

and stimulates demand. For example, E-commerce revenue was about four billions in 2015, increasing 37% more than the number in 2014. Consequently, Internet development raises the benefits and values of people's lives, supports millions jobs and contributes greatly on Viet Nam GDP.

III. The Status and Trends

1. The Status of "Internet +"

With the continuous advancement of ICT technology, Internet applications are gradually transforming from the consumer Internet to the industry Internet/Internet +. Since the last century, the Internet industry has experienced the development process from the PC Internet, mobile Internet to the current "Internet +". The purposes of application have also changed from academic research and life services to the current producer services. Through integration of on-line and off-line and the combination with soft and hard, the Internet is reconstructing information organization form, reshaping the ICT industry and guiding the pattern of economic development. On the one hand, the consumer Internet market has become stable and mature, the Internet industry is now in the era of consumer Internet in which the traditional ICT giants are controlling the main lifeline. By relying on strong information and data processing capabilities and diversified development of mobile terminals, the consumer Internet enterprises are expanding rapidly and tend to realize large-scale development in e-commerce, social networking, search engines and other industries, forming their respective eco-circles and laying a stable pattern of industrial development. On the other hand, enterprises that have a full control over physical resources have begun to try to integrate with the mobile Internet, promoting the Internet industry to enter the era of "Internet +". With the gradual shift of the virtualization process from individuals to enterprises, the industrial Internet with value economy as the main profit model are gradually emerging, and this also means that the Internetization process in various industries such as manufacturing, medical care, agriculture, communication,

transportation education and tourism will continue to accelerate. For example, Ctrip is originated in the traditional ticket and hotel agent. However, Ctrip on the one hand deepen the solid foundation of product line. On the other hand, it has invested, bought shares, made the acquisition of all types of online tourism resources. With just a few years it completed the layout from offline product barriers construction to the online industrial ecology. The “Internet+”, as a business model of integration between the conventional enterprises and the Internet, is seeking new management and service models to provide consumers with a better service experience and create the industry form with higher value beyond traffic.

“Internet +” has become an important new stage for the rapid and comprehensive evolution of the Internet industry. Under the general trend of people-people interconnection, people-thing interconnection and thing-thing interconnection, “Internet +” is actively merging with the primary, secondary and tertiary industries on the basis of the new generation of ICT technologies such as deep mining and intelligent processing. Specific reflections include: first, the basic service attribute of the Internet continues to enhance. In the context of “Internet +”, the Internet has gradually become the dominant platform that is actively exerting the role of promoting industrial restructuring and upgrading and deep integration of informationization and industrialization and will gradually become the infrastructure resources like water, electricity and gas. Second, there is a strong trend of integration between the conventional industries and the Internet. In the context of “Internet +”, the innovation outcomes of the Internet have been deeply integrated with various economic and social fields, and the trend of integration of the Internet and various fields such as manufacturing, transportation, education, medical care, health and finance is irresistible. For example, Uber as a technology enterprises currently covers 450 cities in 73 countries and regions in the world. The total orders have exceeded 2 billon. Third, the level of information technology continues to improve, guiding the development of the industries. The integration between the conventional industries and the Internet is increasing the demands for new technologies and new applications, and it has become

an urgent need to rapidly improve the level of information technologies such as cloud computing, big data, enhanced/virtual reality, mobile Internet and other key ICT technologies. For example, IBM build an open PaaS platform called Bluemix which provide services based on data management and analysis software; SAP launched HANA platform to provide high-speed mass data analysis services; SIEMENS launched Sinalytic platform to provide remote analysis and maintenance services.

In the context of explosive growth of the Internet, new "Internet +" models and new forms are emerging one after another. In the context of rapid development of the Internet worldwide, China is making use of its advantages such as the world's largest Internet network and Internet-using population, the world's leading terminal and application market and the Internet enterprises with increasingly stronger growing international competitiveness to promote the explosive growth of the Internet economy. In addition, many special economic phenomena have appeared in the Internet era, these economic phenomena have appeared in different areas and focus on different contents, their impacts are also different, and the industrial circles have different interpretations on these economic phenomena. For example, the sharing economy has appeared, and Airbnb proposed to lease personal vacant housings to get extra income, which has successfully impacted the traditional hotel industry. Airbnb is currently valued at 25.5 billion US dollars and has overtaken the world's largest hotel group Hilton (24 billion US dollars). In the context of economic innovation with Internet thinking, the traditional economic and industrial patterns have undergone disruptive changes: the largest business travel accommodation service enterprises do not have their own hotel properties, the largest logistics enterprises do not have their own warehousing and transportation facilities, and the largest manufacturing enterprises do not have their own production workshops --- services lead manufacturing.

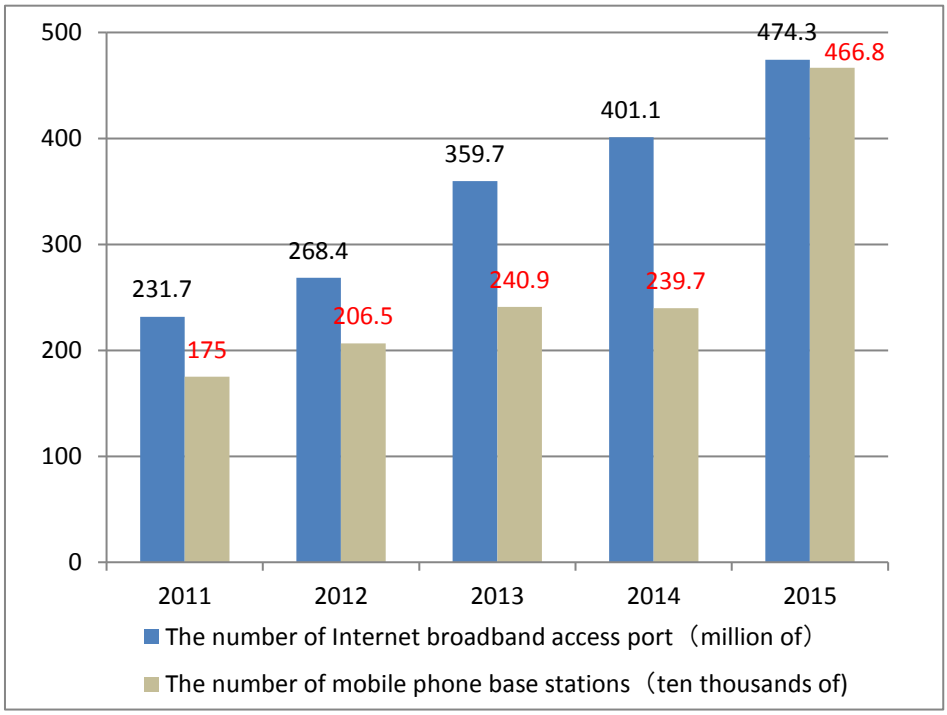


Figure: Scale of fixed and mobile Internet in China

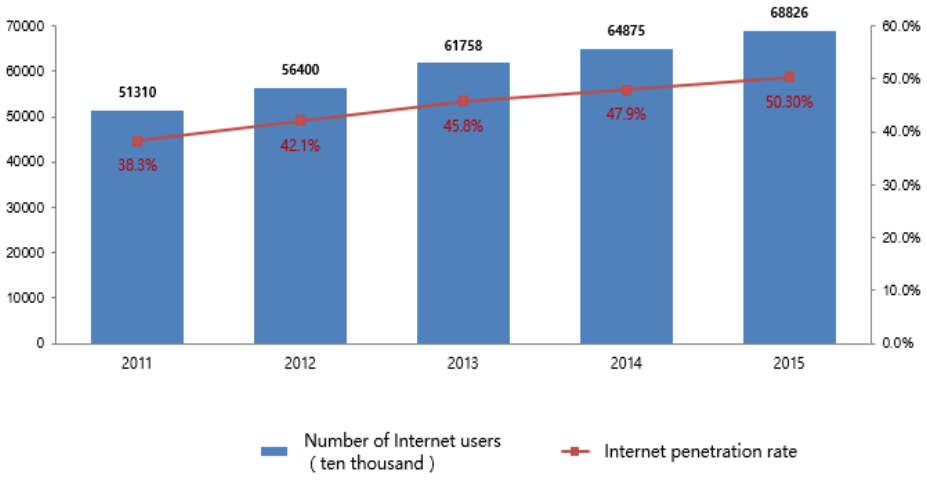


Figure: Number of Internet users in China

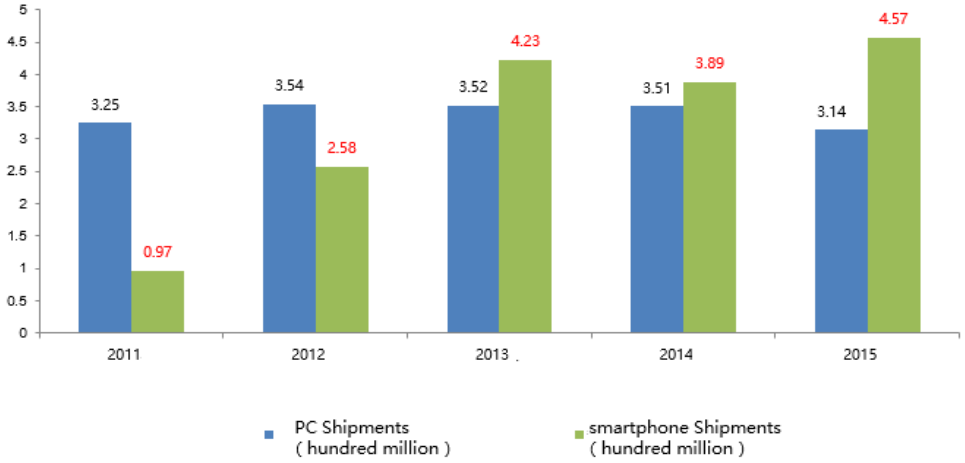


Figure: Shipments of smart mobile terminals in China

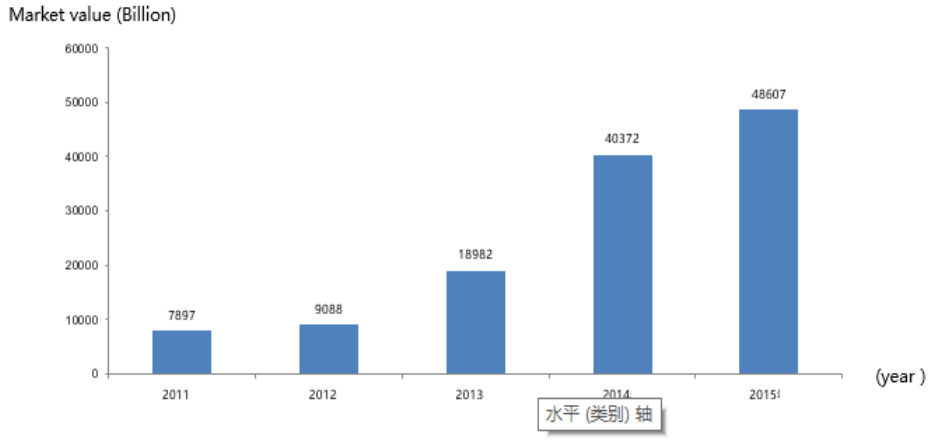


Figure: Total market value of Internet enterprises in China

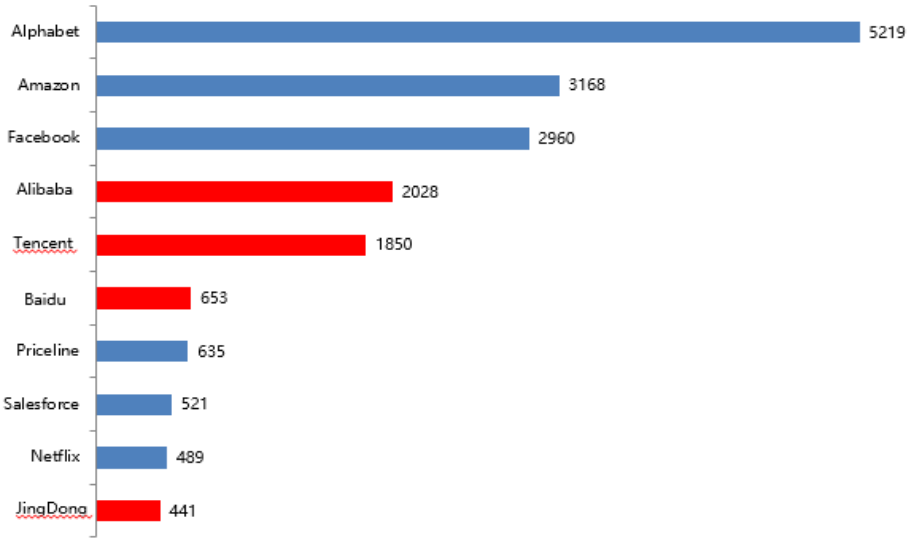


Figure: The market value of TOP10 global Internet enterprises in 2015

In the meanwhile, the innovation of pattern stimulated by the Internet has become a state of new normal in economic and social life. In terms of corporate production, the Internet has become the strategic infrastructure for economic and social development and is the foundation of interconnection of all things. **In terms of corporate organization**, the rapid development and popularization of Internet technology is gradually changing the organizational structure of enterprises, and corporate organization is showing an obvious trend of transforming from independence to synergy, from multi-level to flatness, from division to distribution, from exchange to sharing and from employment to maker. **In terms of corporate innovation**, "Internet +" will help traditional enterprises to gradually get rid of the short boards such as research by single means, lagging user feedback and long development cycle so that enterprises can be endowed with the advantages and characteristics such as user participation in real-time interaction, customized development according to individual needs, rapid iterative innovation and flexible manufacturing. **In terms of user participation**, the innovative skills of consumers are constantly improved. There are more convenient and diversified means to participate in R&D, manufacturing, marketing and other production processes. The boundary between consumers and producers is gradually disappearing, and prosumers are emerging and booming rapidly. **In terms of government governance**, the traditional model in which the governments and professionals are the main bodies of governance will be transformed to the multi-party participation model in which the governments, professionals and the public are the main bodies of governance, and the hierarchical organizational structure will be simplified into a flat structure.

2. Characteristics of "Internet +" Development

In the context of development of "Internet +", the expenses and costs of the production side, the demand side, the market side and the public service side have

significantly declined. **In terms of the production side**, the “Internet +” has helped significantly reduce enterprises’ costs in procurement, management, human resources and other aspects and enable enterprises to gradually realize the goals of fine management, convenient operation, quantitative evaluation and business mobility. **In terms of the** demand side, “Internet +” has effectively reduced the costs of consumers to search for products and services so that consumption is not restricted by time, space, qualification and so on, greatly enriching the type and quality products and services consumed and enhancing user experience. From the market side, “Internet +” to achieve a precise match between supply and demand, significantly reducing the cost of intermediate links, the depth of potential customers to tap, improve conversion rate, expand the scope of resource matching. For example, Adworks of AT&T used the Internet to achieve accurate advertising push; Verizon helped NBA team to find the scope of the fans; Sprint used the Internet to provide industry and market insight, seasonal analysis and so on. From the public service side, “Internet +” effectively reduces the social management costs and public service costs, simplify public service processes, improve public access to service efficiency. For example, JCPenny, a clothing company in USA used the Internet to enhance the internal business processes. It integrated the organization of supply, pricing optimization and supply chain together. The profit achieved two digit growth.

“Internet +” makes it possible to significantly accelerate and continuously deepen specialized division of labor and networked synergy. The division of labor of network is a dynamic development process, and its essence is to promote the horizontal and longitudinal development in related fields and to form comparative market advantages in the fields that are not related through specialized division of labor and get benefits from the exchange. This has not only broken the original boundary of production capacity, but also promoted the industrial integration under the application of new technologies, improving the production efficiency and thereby promoting income growth and forming the positive economic cycle. **In terms of specialized division of labor**, Internet technologies help enterprises to achieve professional

operation and improve operational efficiency. For example, after Autonavi Navigation moves the infrastructure above the cloud, the availability of application services of amap.com has risen to 99.99%, a 5-fold increase over the availability of services previously provided by seven small machine rooms. **In terms of networked synergy**, diversified demands have promoted the formation of a new synergic network. Network provides a necessary, inexpensive and efficient information tool for synergy and has also changed the information capacity of consumers. The diversified demands that have been laid aside have been stimulated, resulting in a significant change in the market environment. In addition, when the enterprise-centered pattern of production and consumption is shifted into a new consumer-centered pattern, customer-oriented and demand-centered business strategies will force the organizational framework of enterprises to undergo the corresponding changes. That is, new forms of division of labor have started to emerge.

"Internet +" promotes the externality theory of network to play a role and lead the economic patterns. Internet technology resources as an infrastructure are not targeted to address specific problems, but to empower to achieve improvement and openness in other areas. This innovation has magnified the impact of generic-purpose technologies and enabled them to spread throughout the entire national economy with the support of technological changes in other areas. According to the research findings of the consulting institution Crafts, all previous infrastructure-related technological changes and upgrades have contributed significantly to economic growth, which is mainly reflected in: the contribution of the production sector of new technology to itself and the contribution of diffusion and application of new technologies in the economy capital deepening). Thus it can be seen that the impact of the Internet as infrastructure and resources on economic growth is showing a significant accelerating trend.

Under the general trend of "Internet +", the phenomenon of separation of property rights represented by separation of ownership and right to use is emerging. The Internet has enabled the spread of the phenomenon of **separation of property rights** from the production area to various economic and social fields. The

form of sharing economy emerging the era of “Internet +” integrate and maximize the use of resources and enables to share the right to use social individual assets, skills and services when they are laid idle with those who need them through the Internet platform and get a certain income. In addition, the global expansion of the sharing economy will continue, and the development model and philosophy will accelerate to penetrate into more areas. According to estimation of PWC, the size of this market is expected to increase to $335 billion by 2025, equal to the size of the traditional rental economy. Taking the Uber model of private car sharing for example, an additional 60,000 yuan cash flow will be brought to the owner each year. Compared with only self use, in the 10-year vehicle use period, the net present value brought by car sharing is 369,000 yuan. For a passenger on the demand side, the prices of car sharing are cheaper than taxi, so 30,000 yuan can be saved each year.

3. Scope and Models of Innovation of “Internet + Services”

“Internet + services” has promoted widespread integration of information technology with the service industry and created the people-centered three-dimensional services. On the one hand, “Internet + services” involves a wide range of areas, has a huge market and a full range of online and offline life services can be provided, forming a complete ecological circle. The greatest impact of the mobile era in the field of life services lies in that the blind sports that could hardly be covered by IT application in the past will be covered to the greatest extent, and online data and offline services will be effectively connected to build a complete eco-circle covering services to people, cash flow and information flow. On the other hand, “Internet + services” will help to realize the transformation of services from online to offline, from soft to hard and from virtual to reality, and ultimately, the online Internet will return to local life services. In the past, the PC Internet was the era of information scarcity, users were directed by the development of terminals, and the acts of users were centering on information and PC; while the mobile Internet is an era of information overload, the evolution of terminal is directed by the needs of users, and the generation of information

depends on users' habits. That is, various living behaviors are generated with people at the center. Therefore, "Internet + services" is bound to come into being under this macro environment and is extensively integrated with more areas, completing the mapping from bit to atom.

"Internet + services" that combines the platform with a new type of business is changing the traditional economic form. With the acceleration of the information technology revolution, the information technologies represented by the Internet are being widely applied in various industries and fields and have and will continue to create a large number of new types of businesses. The Internet as a new type of business has become an important force to promote economic recovery and drive the economic growth in the post-financial crisis era. Presently, a large number of relevant new types of business have been emerging. For example, Chinese ride-hailing giant Didi Chuxing has more than 5 million taxis and ride-sharing car drivers and provide services to more than 10 million person-times per day; Jingdong Daojia has been on line for only 1 month, it has complete more than 500,000 rides a day, involving 100,000 persons; 58 Daojia has more than 30,000 contracted workers, with daily handling over 40,000 orders. Therefore, we should seize the development opportunity of "Internet +" for the service industry, make use of the ICT and Internet platforms to achieve deep integration between the Internet and the conventional industries, and give full play to the role of the Internet in optimizing and integrating social resource allocation. We should deeply integrate the achievements in the service industry in various economic and social fields, enhance the innovation capacity and productivity of the whole society, and form a broader new pattern of economic development with the Internet as the infrastructure and realization tool.

IV. Impact on the Traditional Economy

1. Promising Development Prospect of "Internet + Services"

"Internet +" helps to build a new economy, promote the rapid development of information economy and create a new blue ocean of economic restructuring. The information economy will lead the new trend of economic innovation and development. The new integrated industries will become new pillars of the national economy. The information economy has become the strategic economic resources that can be exploited. The information economy will create new thinking and new system of economic and social development. The ratio of the Internet-based information economy to GDP is increasing. Taking China for example, the size of China's information economy reached 18.6 trillion yuan in 2015, accounting for 27.5% of the GDP, an increase of 17.2% from 10.3% in 2002. The Internet-based information economy is an important driving force to ensure steady growth and promote economic transformation. "Internet +" aims to accelerate the upgrading of the efficiency, quality and innovation, cooperation and marketing capacities of the manufacturing industry in relatively backward developing economies (countries) with the relatively high quality and internationally advanced power of the Internet so as to drive the material flow by information flow.

With the advent of the knowledge society, apart from the ubiquitous networks, ubiquitous computing, data and knowledge are also the driving forces for today's social transformation. "Internet +" not only means that the Internet is mobile and ubiquitous or the Internet is applied to a conventional industry. More importantly, "Internet +" is integrated with ubiquitous computing, data, knowledge, creating a ubiquitous innovation, and promoting user innovation, open innovation, mass innovation and collaborative innovation in the knowledge society. "Internet +" may be integrated with education, health care and community and may also integrated with finance, logistics, transportation and so on. Its integration with each of the specific sub-

industries will bring greater development potential and more application scenarios for the Internet. With the increase in the number of Internet users in China, the habits of using the Internet, mobile payment and other new concepts are becoming more acceptable, and the Internet industry will be closer to the general public, enter the daily life of people and become a necessary match in the basic necessities of life. For example, rookie network, a logistics network with Internet, focused on the construction of logistics nodes to create a warehousing logistics Internet. Rookie will analyze consumers' preferences based on historical data of the Internet which created the electricity supplier early warning with a forecast accuracy of more than 90%.

2. "Internet +"Has Triggered Practical Reform on Industries

In a new round of industrial change, developed countries are stepping up their strategic layout and strive to control the commanding height, and this has won a positive response from enterprises. In 2013, the US NIST proposed the framework of industrial Internet standards. In March 2014, GE, Cisco, IBM, AT & T and Intel announced the establishment of industrial Internet Consortium, the government and industries are interacting frequently and cooperating closely. Germany is actively deploying the Industry 4.0, emphasizing intelligent manufacturing and using CPS to achieve horizontal, vertical and end-to-end integrations between smart devices, manufacturing systems and collaboration enterprises to optimize production organization.

At the micro level, "Internet +" has not only changed the development concept but also changed the organizational mode. The mode of practice of "Internet +" will lead to profound changes in human thinking, form the "Internet +" practical thinking with the characteristics of the times. In addition, the implementation of "Internet +" can't be separated from the profound changes in the way of thinking. The practice thinking of "Internet +" has broken the traditional media of human thinking activities, and it is based on the modern Internet information technology. The essence of Internet information technology is to quickly and instantly spread and transmit information on

things through modern Internet information technologies, thus breaking the self-enclosing boundary of information on things and realizing the cross-boundary spread and communication of information on things. “Internet +” aims to develop what is useful or healthy and discard what is not in traditional thinking, ways of thinking, management processes and operation modes, constantly change the perspectives of thinking and reconsider the social practices from a new perspective and direction of thinking. In terms of organization mode, “Internet +” requires that enterprises should no longer confine their advantages within the enterprises but should actively expand outward, and enterprises should focus on building a cooperative and efficient organizational structure and an excellent resource structure.

3. Information Technology Has Become the Third Largest Factor of Production except for Workforce and Capital

The expansion and penetration of information technology in the whole society is tantamount to the “second industrial revolution”. Information technology has penetrated into the technical and management innovation in various sectors. Information technology is likely to give birth to a new economy, and for enterprises and industries, the integration and penetration of information technology will help to promote the upgrading of traditional industries. Information technology has widely penetrated into products, and information technology is playing in increasingly important role in the automotive industry, including the Internet of Vehicles in the current hot areas. Information technology has helped achieve control automation and standardized operation in the production process, and this has fully guaranteed the quality of products, reduced production costs and improved production efficiency. Information technology has also penetrated into corporate management, including human resource management and ERP management, and IT-based means have improved the efficiency of management, reduced product inventory and speeded up the flow of funds. It is an important task of modernization to accelerate the development of information industry, promote the process of economic informatization and drive

industrialization through informationization. This will strengthen the priority position of technological progress and innovation in economic development and promote wider and higher-level application of information technology in economic and technological globalization at higher level. Information technology has become the driving force and source of economic growth. The development of information technology has greatly improved the ability of knowledge innovation and technology innovation, accelerated the speed of information dissemination and driven the continuous growth of the global economy.

4. "Internet +" Promotes the Changes in the Form of Business

"Internet +" will promote effective docking between supply and demand, optimize the allocation of resources give birth to the sharing economy, crowdsourcing and other new business modes, and profoundly reform the traditional forms of business. When the traditional enterprises are still reaching consumers through distributors, stores and other nodes, e-commerce platforms in the Internet era are turning consumers into their fans via social media so that consumers can participate in their product development and production. They are impacting the traditional business channels with the prices close to the costs or even lower than the costs and changing the traditional business forms through the business modes with the online, fragmented, personalized characteristics. Online business modes, including online work, have great impact on the traditional enterprises, and network-type information transmission has replaced the traditional hierarchical information transmission; online marketing has impacted the sales channels of entities, and social marketing has become an important marketing mode; on-line technical development, crowdfunding, crowdsourcing and other emerging technical development modes have replaced the mode of laboratory development. Fragmentation is influencing the traditional enterprises and emerging enterprises relying on PC Internet, and the emergence of customized products enable the traditional enterprises to bring the compliance with diversified requirements on the agenda; diversified production highlights the importance of lean management and flexible

production; personalized demands have led to the booming of R&D modes that are targeted to sub-groups and sub-culture such as maker experiment and community co-research and development. “Internet +” can not only be personalized, but also has more powerful services and experience capabilities beyond the Internet enterprises in combination with the capacity of the real economy.

With the maturity of information technology, especially the mobile Internet, “Internet +” has a revolutionary impact in all walks of life. The sharing economy has come into being and becomes booming in such context. Point-to-point car rental, goods sharing and service transactions based on social networks and other new types of business are emerging one after another. The sharing economy is a new economic model originating from time, and the concept of sharing has rapidly become a massive social practice in the United States, Europe, China and other technologically developed countries. The sharing economy that has been bred and borne in the background of “Internet +” is showing a strong development trend and potential. The sharing economy has brought the new modes of production, consumption and corporate operation and become the future global economic development trend that can’t be ignored. The traditional business mode is: workers - enterprises – consumers, while the mode of the sharing economy is: workers - sharing platforms - consumers. Regardless of from the perspective of life or economy, the sharing economy liberates many “free people” so that both supply and demand sides can make choices more freely to promote the bottom-up institutional change and improve the efficiency of economic operation. The reason for the existence of the Internet is to optimize social operation and thus minimize the wastage in all business and work modes. The core way of allocating resources of the Internet is sharing, and its resource allocation efficiency is much higher than the market. The Internet provides an operating mechanism that solves the unduplicatedness of resources via rental instead of buy and reduces the information asymmetry so that the rental translations that were impossible in the past become possible.

V. Impact on the Conventional Industries

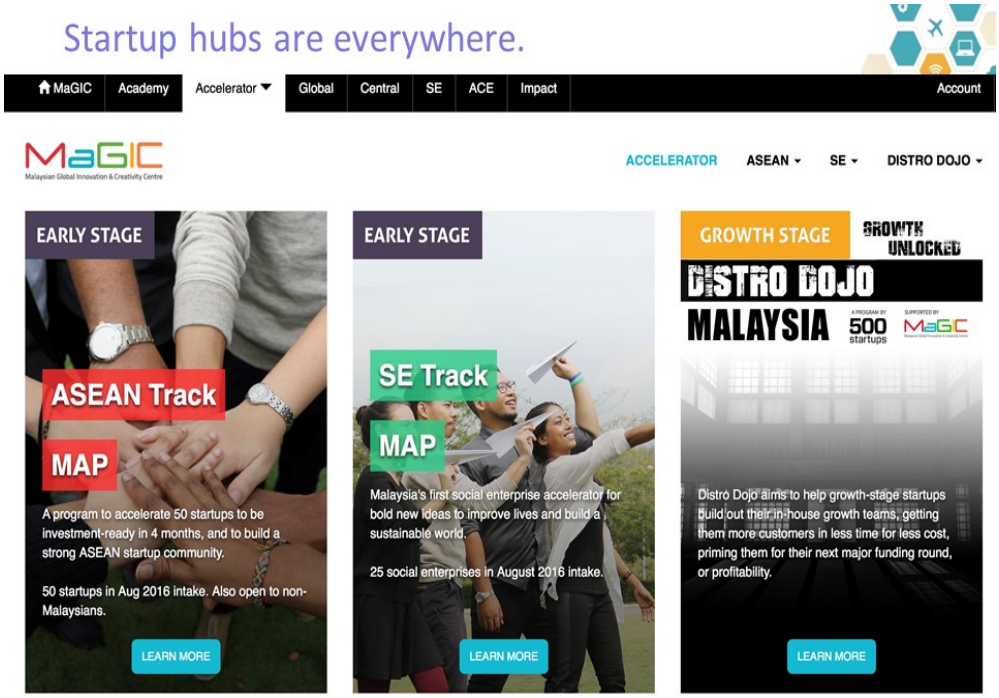
1. Overall Development Trend

"Internet +" has promoted rapid development of the public service industry. In the past forms of services, users often passively accept services, and service providers unilaterally provide services to meet the demands. This kind of services is costly. In the era of "Internet + services", due to the shortened information gap, users can start to seek the services they want, and service providers can also be more direct and more efficient, services they want, while service providers can also positively find the pain points of users in a more direct and interactive way and make improvements timely to improve the quality and convenience of services. In this context, "Internet +" has greatly promoted the rapid development of related services.

The meaning behind "Internet + conventional industries" is that the Internetization of enterprises means that the changes of business mode, which can give birth to many entrepreneurs and start-ups and create many new jobs. "Internet +" can be seen as a topic proposed by the government, and there will be a large number of professionals who will be devoted to the tasks centering on this topic. Through continuous research, analysis and practice, the results can be applied to more quickly in all areas of society to achieve upgrading and transformation of the whole industry.

With the rapid development of the society, the need for "Internet+" is everywhere. Based on the reality, that 70% of the world's population will live in cities by 2050; 90% of the data in the world today has been created in the last two years; $93 billion was lost by retailers because the right products weren't in stock; 1.5 million people in the U.S. are harmed every year due to medical prescription errors, the era of cognitive computing accelerates transformation in all types of businesses. "Internet +" offer a transformative business opportunity driving innovation and stimulating economic growth which also means the integration between the Internet and conventional industries. The fields can cover all professions and trades including smarter roads,

smarter oils & gas, smarter food, smarter healthcare, smarter utilities, smarter retail, smarter supply chains, smarter public safety, smarter money, smarter transportation, smarter cities, smarter products and so on. More and more venture capitalists fund startups that use Internet to stimulate conventional businesses. Startups create change in many sectors including health and wellness, smart cities and infrastructures, precision agriculture, financial service and more. Governments support startups around the world through public-private partnerships. Startup hubs are everywhere. More and more accelerators are going global and focusing on specific industries. The increasing of startups will not only promote the application of Internet, new technologies in different fields, but also stimulate the transformation and reform of conventional industries especially the service industry.



2. Internet + Transportation

The implementation of “Internet +” in the field of transportation is to make use of the Internet, cloud computing, data, IOT and other advanced technologies and ideas to promote the development of smart transportation services via information platform construction with emphasis on resource integration and open sharing. Priority will be

given to achieving efficient interconnection and best match among all elements of transport activities such as passengers, goods, transport in hand, hubs and transport practitioners in the process of moving so as to better meet the needs for travel and transport services and effectively solve traffic congestions, traffic accidents, vehicle parking and other problems, so it is an important means to enhance the level of transport services.

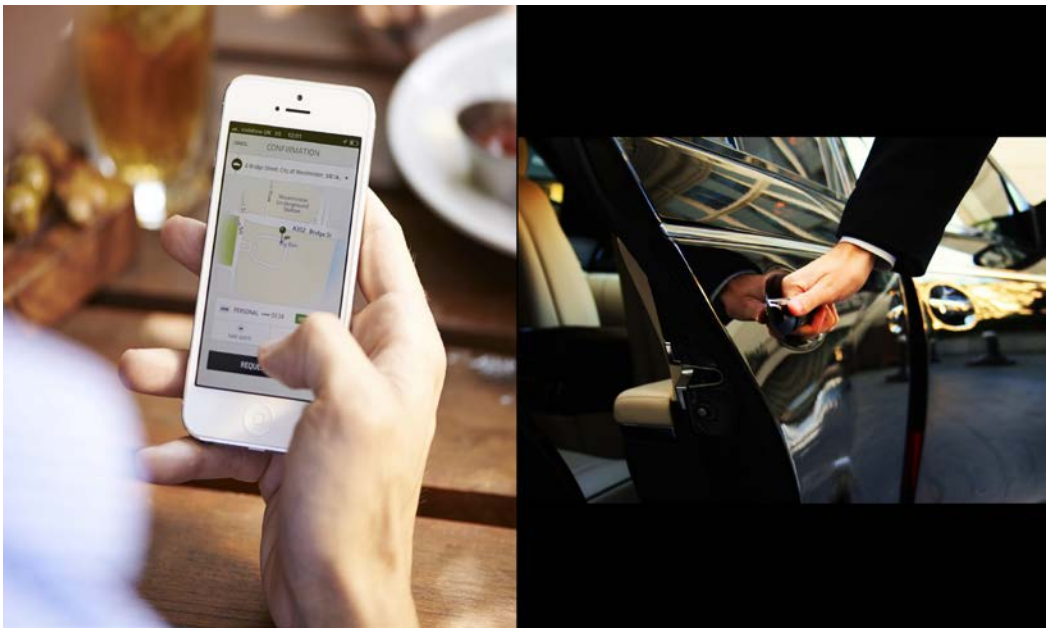
The implementation of the "Internet + convenient transportation" is to meet the finger tip consumer demand in the Internet era and make it more convenient for the public to travel. The Internet will promote the development of new modes of services, such as customized bus and ride sharing. The development of app-based ride-hailing, ride-sourcing and other new types of services can reduce passengers' waiting time for a taxi and deadhead kilometres of existing taxis, shorten driver's working hours, reduce labor intensity and ease traffic jams in cities.

Ridesharing in the field of personal transportation is the typical application of "Internet + transportation". The Internet has facilitated the creation of social media platforms designed to connect service providers with clients. Ride-sharing Internet platforms enable drivers to connect with passengers in their vicinity. All users can rate each other, creating a self-regulation mechanism by incentivizing avoidance of low-rated matches. There is no denying that problems will exist. There are no national regulations regarding personal transportation. The regulation will ensure that driver wages are sufficient to earn a living and reduce traffic congestion by restricting the number of operating licenses in a given market. The regulation will also ensure passenger safety and generate tax revenue.

Local governments have found that the existing body of regulations is difficult to apply to ride-sharing services, due to differences in the Internet-based business model. In order to solve the problem, many state government introduced relevant regulations to ensure passenger safety for example Austin requires fingerprint screenings; Virginia requires ride-sharing drivers to undergo background checks, be licensed to drive, and not use drugs or alcohol; Chicago requires that drivers must pass city vehicle safety

inspections, undergo a background check and fingerprinting, and obtain a chauffeur's license.

Uber as the product of "Internet + transportation", helps to cut congestions and pollution, create jobs and bring economy growth. More and more people start to use the service and begin to realize the inefficiencies in the transportation system. The traffic problem will make people waste time, lose productivity, lead to pollution. The ridesharing apps like Uber become a compliment to public transportation supplementing the existing infrastructure. Uber would like to use Internet and their technology to change the city and make it better and better.



Based on the status and development of "Internet + transportation", it is quite important to formulate policy to promote the development of "Internet + transportation" and to enhance the supply capacity of "Internet + transportation", foster the "Internet + transportation" application market and create the development environment of "Internet + transportation".

3. Internet + Medical & Health

"Internet + medical & health" is a new type of medical and health services which is formed by deeply integrating the Internet with traditional medical and health services

through the means of information technology (including communication/mobile technology, cloud computing, Internet of Things and big data etc.). Internet medical services are a new application of the Internet in the medical industry. It includes Internet-based health education, medical information inquiry, electronic health record, disease risk assessment, online disease consultation, electronic prescription, teleconsultation, telemedicine, rehabilitation and other forms of health butler services.

"Internet + medical" will become one of the major development trends of the industry in the next few years. More and more innovative enterprises and technologies have been carrying out exploration and practice in the field. Digitalization, mobilization and big data application in medical services will release huge vitality and has a very positive significance for the country, society and individuals. The core of the spirit of the Internet is "to optimize resources and improve efficiency". The establishment of medical information sharing platform not only can improve the efficiency of medical services, but also can promote the development of scientific research, so it is an important way of optimization and improvement and an inevitable trend.

"Internet + medical & health" as a new mode of medical services that serves as a symbolic turning point in the traditional medical sector will bring enormous development potential. In the future, the medical sector will achieve fast development in the following five directions with the help of "Internet +": first, the medical information sharing service platform. It will support third-party institutions to build medical images, health records, inspection reports, electronic medical records and other medical information sharing service platforms and gradually establish a cross-hospital medical data sharing and exchange standard system. Second, convenient services. It will actively make use of mobile Internet to provide online appointment services for diagnosis and treatment, waiting reminders, pricing and payment, medical report inquiry, drug distribution and other convenient services. Third, telemedicine. It will guide medical institutions to carry out examination at the grassroots level, diagnosis at a higher level and other remote medical services targeted to small and medium-sized cities and rural areas. Fourth, public health services. Internet companies are encouraged

to jointly establish medical network information platforms with medical institutions to strengthen the integration of regional medical and health services resources and make full use of the Internet, big data and other means to improve the ability of prevention and control of major diseases and public health incidents. Fifth, the new health services. We should actively explore to extend the Internet to doctor's orders, electronic prescription and other online health service applications. We should encourage qualified medical inspection agencies and medical service agencies to cooperate with Internet companies to e develop genetic testing, disease prevention and control and other modes of health services. As genetic testing's special and important, it is recommended to conduct clinical assessment before performing genetic testing and provide genetic counselling by trained healthcare professionals to explain the genetic test result. In addition, to be clear, any development in future would comply with relevant rules and regulations under individual APEC members' jurisdictions.

The integration and innovation of "Internet + medical" in China will bring great convenience to people's lives. The tentacles of "Internet +" in China have deeply extended into the medical sector, including Chunyu doctor, Dingxiang doctor, Pingan doctor and other health apps as well as virtual cloud hospitals integrating medical resources, such as Ali Cloud Hospital and Baidu Cloud Hospital. Ali Cloud Hospital is an innovative whole industry chain service platform, which not only provides convenient services such as medical advice, first contact and triage, but also introduces offline examination and inspection services. It carries out standardized operations and provides professional medicinal distribution and management services. In the future, Ali Cloud Hospital will also integrate with intelligent medical equipment to achieve accurate medical services so that each user has private customized services. This platform has fully integrated online and offline resources and is indeed the deep integration and reconstruction of the existing medical system.

Chinese Taipei has already made achievements in the field of "Internet + healthcare". The combination of Internet and healthcare is showed as remote monitoring, and patient-centered and innovation-oriented intelligent hospital. With Internet patients'

data are collected, tracked, monitored, analyzed and converted into useful medical information through fitness devices, health bands and remote monitoring. In addition, the intelligent hospital will minimize human errors, increase service efficiency, create convenience and comfort and improve patient experience.

As" Internet +" has incorporate into people's lives, some challenges and problems has come out. Therefore regulatory policy will play a significant role in solving and limiting the existence of problems. The optimization of "Internet +" management system including regulation and coordinated supervision and emphasis on platform management will be indispensable.

4. Internet + Finance

Internet finance is a new type of financial business in which traditional financial institutions and Internet enterprises (hereinafter referred to as practitioners) make use of Internet technology and ICT to realize financial intermediation, payment, investment and information intermediary services. In-depth integration between the Internet and finance is an inevitable trend, which will have a profound impact on financial products, businesses, organization and services. Internet finance has played an active role that can hardly be replaced by the existing financial institutions in promoting the development of small and micro enterprises, expanded employment and opened the door for mass entrepreneurship and innovation. Promoting the healthy development of Internet finance will help improve the quality and efficiency of financial services, deepen the financial reform, promote the development of financial innovation, urge the financial industry to open to the outside world and build a multi-level financial system.

Internet finance will help to develop the inclusive finance, make up for the shortage in traditional financial services, help to exert the role of private capital and guide private finance to achieve standardization. The market positioning of Internet finance is mainly at the "small-micro" level has the characteristics of "large

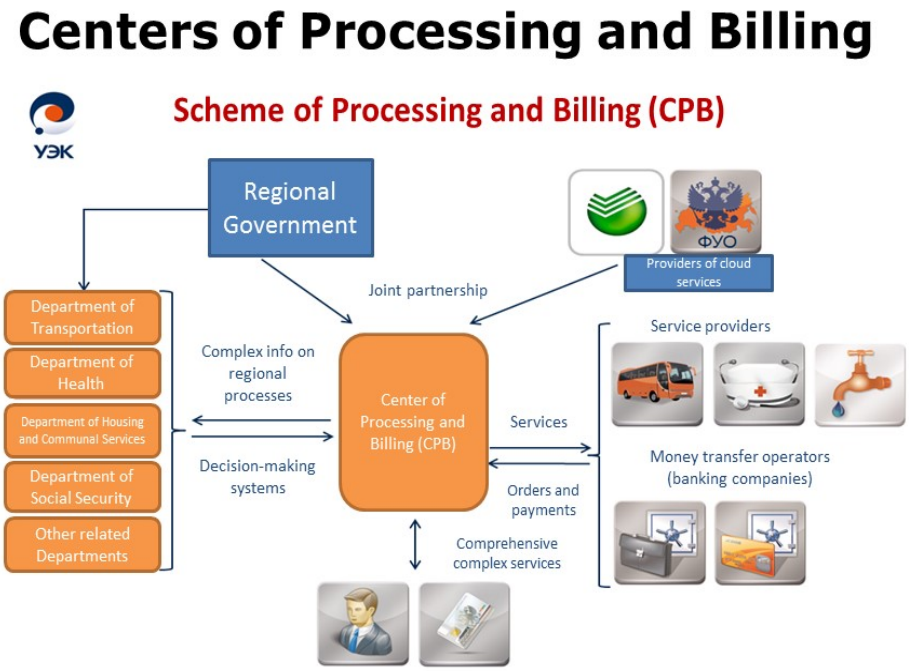
number of transactions but small single amount". This kind of small-amount, fast and convenient characteristics are the characteristics of inclusive financial and have the function of promoting inclusive growth. It has outstanding advantages in small and micro financial businesses and has to a certain extent filled the gap in the traditional finance.

The requirements of E-commerce for convenient, fast and safe payment has promoted the development of Internet payment, especially mobile payment. The start-up financing and working capital financing demands for e-commerce and the consumption financing demands for customers have promoted the development of various business forms of Internet finance, such as online small loans, crowdfunding and P2P online loans. The development of e-commerce has given birth to the change of modes of financial services, and meanwhile Internet finance has in turn promoted the development of e-commerce.

Mobile payment as an important part of Internet finance is showing explosive growth in China, bringing great convenience for people's lives. Alibaba's Alipay as a leading third-party online payment platform in China has currently over 300 million real-name users, and Alipay's robust style, advanced technology, keen market foresight and strong sense of social responsibility has won extensive recognition of the banks and other partners. At present, Alipay has established an in-depth strategic and cooperative relationship with more than 180 banks as well as VISA, MasterCard and other international organizations at home and abroad. Alipay's range of applications is far beyond the scope of online shopping in the past and start to cover all aspects of life. Nowadays, it has brought great convenience for our lives in transfer, payment, credit card repayment, O2O line consumption, catering, supermarket convenience store consumption, travel, wealth management, social exchanges and many other aspects.

Russia makes use of Internet to combine with financial to make people's life easier and more convenient. Universal electronic card is just the product of "Internet + financial". Universal electronic card (UEC) is an ID E-card issued to Russian citizens from January 2013. The UEC allows citizens to remote order, pay and receive government

services and replace a number of documents, including medical insurance policies and pension insurance certificate. It brings together different services on a single card including electronic purse, debit card, electronic signature, travel ticket and other possibilities. Centers of processing and billing for UEC will send information to the departure of transportation, the departure of health, the departure of housing and communal services, the departure of social security and so on to make decisions. Now UEC covers 25356249 citizens in Russia to improve life's quality.



Although "Internet + Finance" has taken great benefits and convenience, it also becomes easy to gain illegal benefits through using illegal methods with Internet. The improving of legal system for "Internet + Finance" is important to make sure the risk and guarantee people's rights and benefits.

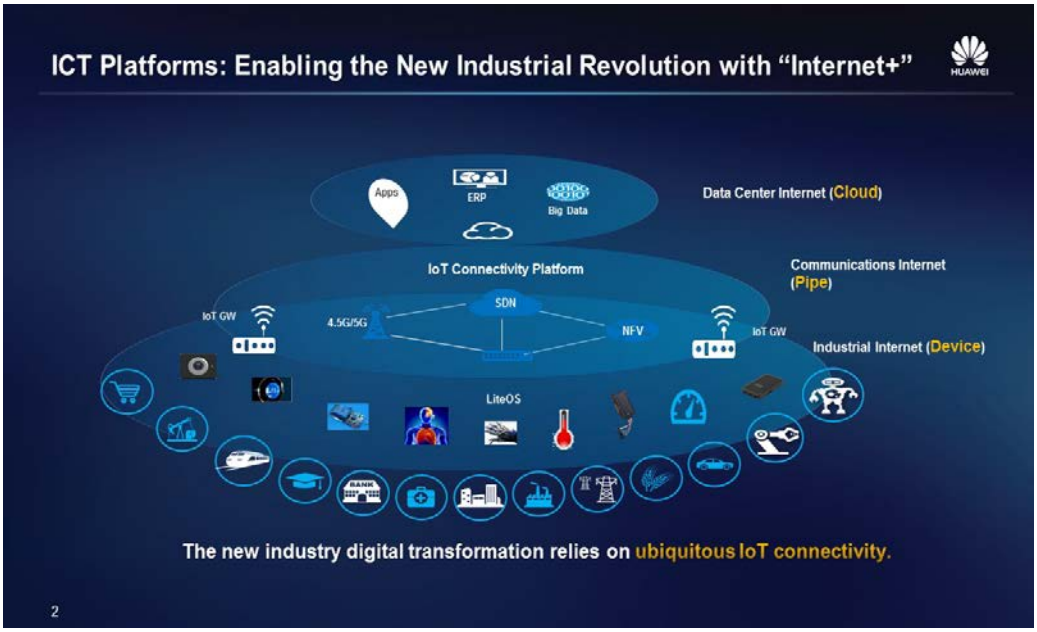
5. Internet + IOT

The Internet is the core of information collection and smart control in all economic and social areas, the key infrastructure and important support for the implementation of the

“Internet +” strategy, and an indispensable means to promote the upgrading of traditional industries, improve the production efficiency and innovate the operation mode via “Internet +”. In fact, in the key areas proposed in the guiding opinions for the implementation of the “Internet +” action plan, IOT has long been quietly making explorations, though it has been plagued for years by the problems such as high equipment costs, application fragmentation and shortage of business mode. The advent of “Internet +” has an effective business mode and operational experience, platform-based service has absorbed application fragments and promoted large-scale applications and thus reduce the costs. The Internet and IOT, coupled with the intermediate communications network, has formed a sound cloud-end structure. They are complementary with each other and indispensable.

IOT connectivity platforms enables the new industrial revolution with “Internet +”. IOT makes full use of “things” to offer services to all kinds of applications. The connections can be between computers, between human to human without a computer, between human to things using generic equipment, between thing to thing. Transportation, home life, energy, healthcare and manufacturing are the main focus of IOT applications. IOT is necessary for “Internet +” and impact 2/3 global GDP economically.

The global famous company Huawei focuses on building intelligent IOT connectivity platform and leads mobile network IOT standards. Because they know that intelligent connections of production and consumption is quite important in the digit era. In the networked world, the three most desirable things are connections, connections and connections. Intelligent IOT connectivity is the foundation for the next industrial digit transformation. Therefore “Internet +” can’t develop without IOT apparently.



IOT still have meets many key challenges to solve including the identification of tens of billions of IOT devices, the power consumption of devices, variety of wireless technologies like reliability、 security and resilience 、standard interoperability, high cost of network, the ability of big data analytics, long transmit distance and high demand of spectrum.

IOT attracts many economies' attention and take it as important development field. Not only IOT，but also many services need to strengthen regional cooperation. The regional cooperation will be able to promote the development of each field in economies and drive the progress of many aspects including finance and so on for each economy.

VI. Development Suggestions

1. Challenges and Problems

The online world is the refraction of the offline society. In the context of "Internet +", offline issues are refracted online in a wider scope, at a faster pace and to a greater extent, making existing issues more imperative, implicit issues explicit and theoretical issues realistic. The existing problems are mainly reflected in four aspects: first, law

and regulation formulation involves a long cycle, but the new types of business are developing rapidly; second, information sharing is not smooth and does not meet the new demands of management services; third, the regulatory means are backward and do not adapt to technological innovation; fourth, the linkage mechanism is imperfect and does not meet the requirements of integrated cross-disciplinary regulation; fifth, the development of technology and standards are lagging behind.

2. Suggestions for Promoting the Development of "Internet + Services"

First, it is suggested to guide market demands, reduce market uncertainty and promote the healthy development of "Internet +". Government procurement, tax incentives, subsidies for SMEs and other initiatives could be used to stimulate and expand the application demands of "Internet +" in industrial areas, area of commercial and trade circulation and area of public services.

Secondly, it is suggested to improve the supply of relevant factors, give the impetus to the industries and promote the innovation and development of "Internet +". Strengthening financial investment and management, exploring to establish a multi-field, multi-channel, multi-level financial support and giving priority to support the "Internet +" construction in the key, basic and public areas could be helpful for promoting "Internet + Service".

Thirdly, it is suggested to enhance the innovation and application of the supporting means. "Internet +" project packages could be established , focusing on promoting the development of a new generation of information technologies represented by cloud computing, big data and IOT and the integrated innovation of manufacturing, energy, services and other industries. It is feasible to explore the related PPP model for "Internet +" and strive to jointly establish the innovation centers by academic circles and industrial circles in artificial intelligence, advanced manufacturing, integrated circuits and other cutting-edge fields in the PPP model.

Fourthly, it is suggested to strengthen the intellectual support to "Internet +", focusing

on promoting scientific and technological innovation for “Internet +” and industrial upgrading and strengthening efforts to cultivate high-level and innovative core technology research and development personnel and research teams. First, it is valuable to ensure the investment in development of human resources and strengthen the support to cultivate professional backbone talents for “Internet +”. Second, it is to strengthen cooperation among enterprises, universities and research institutes and encourage joint education, trainings and so on.

Finally, it is suggested to provide a favorable environment for the “Internet +” related activities and has an indirect role in industrial development. The key point is to create a good financing environment and solve the universal funding problems. On the one hand, it can help the implementation of the financial support for the emerging Internet industry. On the other hand, it help realize the guidance in the traditional financial field. For example, it will enhance the ability of bank capital to serve the real economy, strengthen the connection between banks and enterprises, explore the transformation of financial cloud services.

3. Strengthen Regional Cooperation

The emerging “Internet+” will impact many aspects of life, so we need to make sure that it is built in a structured, robust way. There is a strong trend of integration between the conventional industries and the Internet, and “Internet + services” has promoted widespread integration of information technology with the service industry and created the people-centered three-dimensional services.

We’re already finding organizations to enable cooperation across the private sector. But the focus of these groups is primarily on increasing and accelerating adoption of Internet economy. We believe the idea needs to expand beyond the business world and become a priority among governmental bodies that have more effect to implement the “Internet+” strategy that will have far reaching impacts on both our business and personal lives.

Governments needs to play a role in facilitating Innovative economic development of “Internet+Service Industry”, not just to enact and execute on strong policies to foster innovation but also to strengthen the regional cooperation, such as establish the sustainable and cohesive policy frameworks that mandate cross-border collaboration for all policy, economic and social initiatives.

For example, Europe and China have been very early adopters of the Internet of Things (IoT), although knowing that a complex endeavor like the IoT will probably take a decade for a wide scale adoption and market penetration. In light of recent evolutions, the focus has also been adopted to consider topics like Smart Cities and 5G. Since February 2011, under the coordination of DG CONNECT and MIIT-CAICT IoT experts from both regions met biannually for political and technical conversations, and improved coordination. The current focus of the cooperation is to concentrate on dedicated Large Scale Projects (LSP) on “Internet+” application areas, such as Smart Agriculture and Food Safety, Smart Cities, e-Health, Autonomous Vehicles in connected environments, and water management. Furthermore, common standardization interests and the participation in Chinese and European innovation support programs are under consideration to be reinforced.

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