HRI Report

Widespread Emergence of New Services Utilizing the Internet in China

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Amidst the rapid widespread of the Internet and smartphones in China, new services that make use of these technologies are successively being introduced. With the world's largest market for e-commerce and mobile payment, and boosted by the "Internet Plus" policy that is promoted by the Chinese government, a sharing economy as represented by bike-sharing and taxi dispatch services is slowly taking root in Chinese society, and a significant transformation in the lifestyle of the Chinese people is taking place.

1. The "Internet Plus" National Strategy

The Chinese government is giving its support to the growth of the digital economy through its policies. In March 2015, Premier Li Keqiang submitted the "Internet + (Plus) Action Plan" at the National People's Congress, which is the equivalent of the Diet. In July of the same year, the State Council released the "Guiding Opinions on Active Promotion of the 'Internet + (Plus)' Action Plan." In 2016, the "Outline of the National Informatization Development Strategy," "China Manufacturing 2025" and "Action Guidelines for Promoting Big Data Development" were successively introduced to promote "Internet Plus" as a national strategy[1].

"Internet Plus" refers to linking other industries with Internet technology (mobile Internet, cloud computing, big data and IoT). For example, the Internet is merged with those respective industries into "Plus Medical," "Plus Logistics" and "Plus Finance" with the aim of introducing new opportunities to achieve growth in traditional industries.

2. Service Platforms Taking Root

The number of Internet users in China is estimated to be 750 million (as of the end of June 2017). Meanwhile, the number of smartphone owners stands at about 800 million, including leading cities such as Beijing and Shanghai as well as second-tier cities and inland regions. This means more than 60% of the country's population are in possession of a smartphone. The number of domestic users for WeChat, a free messaging app provided by Tencent, is 860 million, while in mobile payment services, the number of users for Tencent's WeChat Pay and Alibaba's Alipay is 600 million and 450 million respectively.

e-commerce and mobile payment are taking root in China on an extensive scale with a total transaction amount of 26 trillion yuan (approximately 420 trillion yen), which accounts for 40% of the global share. Underlying this trend is the rapid popularization of the Internet and smartphones as mentioned above. Not only so, with the huge success of mobile payment (Internet + payment) and bike-sharing (Internet + transport) services, which is also attributable to the promotion of "Internet Plus" by the government, residents of China are now experiencing significant changes in their lifestyle.

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[1] Extending across the cities of Guiyang and Anshun of Guizhou Province, the "Guian New Area" is a new district at the national level where development is promoted under the policies of the Chinese government since January 2014 and rapid growth of the big data business is underway. With Qualcomm, a major semiconductor player in the U.S., together with Taiwan-based Foxconn and China's Huawei taking the lead to accumulate big data resources in this area, it has attracted the entry of the three major telecommunications carriers (China Telecom, China Mobile and China Unicom) as well as healthcare-related businesses such as those that target telemedicine. With the utilization of big data that is spearheaded by the Chinese government, the aim is to establish a new growth model in Guizhou, which is known to be the poorest region in China.

Photo taken by the author

Fig. 1: Bike-sharing

Photo taken by the author

Fig. 2: Umbrella-sharing Service

2.1 Sharing Economy

With the widespread use of the Internet and smartphones, a sharing economy is now taking root in China. Examples in the arena of "Internet + transport" include bike-sharing (Mobike, ofo, etc.) and taxi dispatch (Didi Chuxing, etc.) services. With a user population of 110 million in China, bike-sharing services have created about 100,000 jobs in the entire industry (including bicycle manufacturing, logistics, operation and maintenance). An employee who is in charge of developing remote locking and unlocking systems for bicycles earns more than 10,000 yuan a month (the starting salary for new graduates is about 5,000 yuan). Didi Chuxing (滴滴出行) is the Chinese version of Uber, a major taxi dispatch service provider based in the U.S. Didi Chuxing now almost monopolizes the market following its merger in 2015 with its competitor, Kuaidi Dache (快的打车), and the acquisition of Uber China in 2016. Meanwhile, for "Internet + space," vacation rental services including Zhubaijia (住百家), which is the Chinese version of Airbnb, as well as Tujia (途家), which handles high-end resort houses such as resort villas, are gaining popularity. Lately, sharing (rental) services for smartphone chargers and umbrellas have also emerged.

2.2 "Internet + Food Delivery" Service

In China, food delivery services are known as "waimai (外卖)." The number of food delivery service users, which stands at 270 million (as of June 2017), has increased by 40% in as short as half a year since December 2016, making one out of every five people in the country a service user.

In modern China, it is standard practice for both husband and wife to have full-time jobs and it is becoming increasingly common for employees of companies located in urban areas to work long hours (commonly referred to as "996," which means working six days a week from nine to nine). This has resulted in growing needs for eating out and food delivery particularly among the younger generation. The advent of waimai platforms is said to have brought dramatic changes to their lifestyles.

Waimai platforms are e-commerce websites dedicated to delivery services for food and beverages from most of the restaurants in the city.

Currently, four companies including China-based "Ele.me (饿了么)," "Meituan Waimai (美团外卖)" and "Baidu Waimai (百度外卖)," together with foreign-affiliated Kentucky Fried Chicken (KFC), constitute 90% of the market (Ele.me, the top player in the market, is said to have acquired the third-ranking Baidu Waimai according to a report on August 24). Ele.me, which is also the oldest player in the market, belongs to the e-commerce giant Alibaba Group, while Baidu Waimai is affiliated to the search engine, Baidu, and Meituan Waimai is a service offered by Tencent, which operates the coupon

website, Meituan. In other words, at the core of the food delivery services stand the top three ICT enterprises of China, which are commonly referred to collectively as BAT (Baidu, Alibaba, and Tencent). The size of the food delivery service market has been growing, with an increase from approximately 1 trillion yen in 2010 to approximately 4 trillion yen in 2015. Following this growth, the proportion of food delivery services with respect to the entire food service industry has increased from 3% in 2010 to 7% in 2015, and is expected to reach 15% (approximately 11 trillion yen) by 2018.

The apps for these services are very easy to use. By setting the area in which they reside (delivery destination) on the app, users can narrow down the criteria to search for restaurants that are able to provide delivery services to them (selecting outlets based on criteria such as the type of food, keyword, distance and price). After doing so, users can proceed to choose the product from the website of the restaurant. Selection is easy as information such as other users' reviews of the restaurant, price, distance and estimated delivery time is displayed. Once a choice has been made, users simply need to enter the delivery address, contact number and particulars of the recipient to complete the order. Delivery personnel who have received these orders from delivery app operators such as Ele.me (they are not staff of the restaurant, but employees of the logistics partner of the restaurant or individuals who are engaged separately) then collect the food orders at the restaurant and deliver them to the customer with a motorbike. Online systems such as WeChat Pay and Alipay are mainly used for paying such services.

As orders can be delivered to the designated address with the entire flow from ordering to payment done on a smartphone, users, especially white-collar workers with a busy schedule, find this service extremely convenient. Providing a digital platform for the entire series of transactions, including the business flow, money flow and material flow, helps to resolve issues such as taking incorrect orders or delays in delivery, which frequently occurred in the past when customers called restaurants directly to place an order. At the same time, it has helped restaurants save time and advertising cost as users would

upload photos of the food and rate the restaurants (users can get points from the restaurant that they used and rated).

Meanwhile, this system of users rating the restaurants and delivery persons has also contributed to better quality of delivery services. For example, users can rate a restaurant from one to five stars as well as add in comments. The rating would drop if the quality of the food is low or if the portions are too small, and users are less likely to choose the restaurant as a result. In other words, the reputation of a restaurant is guaranteed by the rating system of the website, while delivery persons are also managed using the same system. Dispatch personnel who earn low ratings are subject to penalty charges, and their income would decrease with the lower likelihood of getting orders. Cases of spilling and food getting cold due to late delivery are likely to result in low ratings, and thus dispatch personnel will ensure that food is delivered to customers carefully and speedily. Consequently, their service levels have improved significantly compared to delivery services in the past.

Photo taken by the author

Fig. 3: Food Delivery Service

2.3 "Internet + Medical" Services

Utilization of the Internet in the medical industry is also advancing, such as the use of mobile medical apps for healthcare management, self-diagnosis and advance booking of outpatient appointments. There remain many regions in China, such as those in the inland areas, where economic development is slow and there are shortages of medical facilities, doctors and nurses. Using mobile medical apps to connect these regions with doctors working

at medical facilities in major cities such as Beijing and Shanghai has enabled people who live in the rural areas to receive remote medical consultation.

For instance, Chunyu Yisheng (春雨医生) is a mobile medical app that combines e-commerce of pharmaceutical products with direct online medical consultation to doctors. Targeting the younger age group, the app has 120 million users and more than 500,000 doctors registered on the website, among which more than half of them are doctors who belong to Class 3 Grade A hospitals that are certified by the government as institutions with the highest standards in medical care. Although users of this service are expected to determine the medication at their own discretion as the doctors do not bear responsibility for their consultation, the site has, at present, received an accumulated number of more than 200 million cases of consultation.

We Doctor (Guahao) is a mobile medical app that is officially endorsed by the National Health and Family Planning Commission [2] of China. It boasts a user population of 150 million, which is bigger than that of Chunyu Yisheng, with 260,000 registered doctors from 29 provinces. Both Chunyu Yisheng and We Doctor have a partner or subsidiary that is an operator of a website selling pharmaceutical products (e.g., Haoyaoshi (好药师)), so users are able to purchase commercially available medicine online and have them delivered to their home.

Positioning apart from mobile apps offering comprehensive services such as Chunyu Yisheng and We Doctor are online platforms such as Weitang (微糖) and DXY (丁香园). The former is catered specially for diabetic patients, while the latter is for use by healthcare professionals. Weitang allows users to input the blood sugar level, amount of food intake, amount of exercise and dosage that they have measured, which can be viewed by a doctor in real time, based on which a suitable dietary and healthcare plan is provided to the user. Sharing of one's own data with other doctors also helps to complement the medical consultations that the patients have received. Meanwhile, DXY, which targets healthcare professionals

such as doctors, nurses, pharmacists, engineers and insurance companies, runs an app that offers information on medical equipment, pharmaceutical products as well as staffing and recruitment services. It currently has a user population of 5.5 million (including 2 million doctors). The primary needs of DXY users include complementing and enhancing expertise by exchanging information with other medical professionals to upgrade the level of one's medical skills, as well as raising one's profile on the website to gain better employment and career change opportunities.

Positioning "Healthy China" as a national strategy, the Chinese government welcomes the widespread use of mobile healthcare apps as a measure to narrow the gap in medical standards between urban and rural areas.

3. Advancement toward "Internet + AI"

Connecting a diverse range of industries via the Internet allows extensive information on commercial transactions to be acquired. Moving forward, we will see the advent of an era where such information is analyzed and new services are created through real- and cyber-world collaboration. When the time comes, application of technologies such as credit risk assessment, marketing and biometric authentication[3] that make use of AI (Artificial Intelligence) will play an important role.

In Hangzhou City of Zhejiang Province where Alibaba is based, trial operation of a "new retail[4]" service has begun

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[2] Formerly the Ministry of Health of China, this organization is equivalent to the Ministry of Health, Labour and Welfare in Japan.

[3] Introduction of face recognition technology has been seen in different sectors. The healthy-food concept restaurant opened by KFC in Hangzhou City adopts a new face-recognition payment system. Customers can pay for their meal orders with their smile (which can be correctly recognized even when a person is in disguise) and mobile phone number authenticated by the system. Meanwhile, passengers can now pass through the ticket gate at Wuhan Station with face recognition, while Beijing Capital International Airport is planning to introduce face recognition for entry and exit inspections in collaboration with search engine giant Baidu.

[4] BingoBox opened container-like unmanned convenience stores in Guangdong Province and Shanghai City. Visitors can enter the store by having their identity verified when they scan the QR code at the entrance of the store with WeChat. The store is monitored by AI using face recognition to prevent unregistered users from entering. Products are identified through image authentication, and the alarm will go off if someone attempts to bring an unpaid item out of the store. Only online payment systems such as WeChat Pay and Alipay are accepted. BingoBox plans to launch 5,000 outlets throughout the country by end 2017. Besides JD.com, China's second largest e-commerce company after Alibaba, convenience store chain Lawson has also announced its plan to enter the "staff-less store (similar to Amazon's Amazon Go store)" sector.

through real- and cyber-world collaboration. In July 2017, Alibaba launched a staff-less supermarket named Tao Café. Under this system, the identity of the visitors is verified through the Taobao e-commerce website on their smartphone before they enter the store, while product information is automatically identified through the use of electronic tags and image authentication. Payment is then automatically settled when the customers leave the store through the special gate (there is no need to go through the cashier).

This concept, which combines "real-world" shopping at a brick-and-mortar store with a "cyber" mode of payment via Alipay, is backed by technology that identifies information automatically via AI, such as face recognition and image authentication.

Underlying such an automated and authentication system that combines the real world with the cyber world is a vast amount of information related to business flow, money flow and material flow, which is obtained through Internet Plus. For example, customer data that is accumulated from the records of transactions and logistics on the Taobao e-commerce website, which is Alibaba's core business, is linked with Alibaba Cloud and analyzed using AI. Within just a few minutes' time, such data that is analyzed is being utilized in areas such as credit risk assessment, provision of financial services and marketing via the credit information database and the financial platform of the risk assessment system.

4. Spread of Innovation from China to the Rest of the World

A "leapfrog" phenomenon, wherein emerging countries get ahead of developed countries in the development process through the utilization of technology, is now being widely observed in China.

Underlying the leapfrog development is the appearance of convenient and affordable services that make use of smartphones in areas where service levels are inadequate. Immense amounts of money and time are needed in order to develop infrastructure in China's vast land area. This has led to the widespread use of smartphones and online shopping, with the former leapfrogging land lines, which require the installation of telephone networks throughout the entire country, and the latter leapfrogging department stores and supermarkets.

At the same time, the leapfrog phenomenon is also boosted by the innovation policies of the Chinese government, which include those that encourage R&D in the private sector and the development and launch of high-added-value products, as well as the "Mass Entrepreneurship and Innovation" policy (business start-up and innovation by the people), which places emphasis on innovation at the grassroots level (June 2015). Thanks to the contribution to the "Mass Entrepreneurship and Innovation" policy by the utilization of more than 2,300 "Mass Makerspace" incubation facilities in China which were developed by the government, the percentage of new business start-ups (ratio of newly-established companies to the total number of companies) has grown from 18% in 2013 to 25% in 2016. Needless to say, this is considerably higher than the 5% start-up rate in Japan as well as the 10% rate in the U.S. Born in 1982, Hu Weiwei is the founder of Mobike, one of the earliest entrants into the bike-sharing service market, and is a famous person that symbolizes China's "Post-1980s" generation, a term that refers to people with a new set of values who were born after 1980.

Moving forward, we are likely to see the occurrence of a "reverse innovation" phenomenon, wherein services and platforms that were born and put into application in China spread to advanced nations.