
A Study on the Growth Strategies of Service Industry Through Vitalization of Sharing Economy

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Chapter 1. Introduction

1. Necessity of Research

Korea has been caught in a US\$20,000 income trap for the past 10 years, as its per capita GNI has failed to breach the US\$30,000 mark after surpassing US\$20,000 in 2006. The weakening of Korea's growth potential is primarily due to the continuation of a lack-luster growth trend resulting from a slowdown in the growth momentum of the manufacturing industry. Korea has placed a policy focus on promoting the export-oriented manufacturing industry to drive economic growth and established legal frameworks to support the policy direction. However, export-driven growth strategies have high sensitivity to global economic developments and thus are vulnerable to fast-changing international trade environments. Notably, as the global economy has slipped into a structural re-

cession and the Chinese economy is slowing, Korea's manufacturing-driven export policies have reached their limitations. As such, the service industry has an increasingly important role to play in Korea's economic growth. Sustainable and stable economic growth requires growth in the manufacturing sector as well as in the service sector. However, if the service sector lacks competitiveness, rebalancing the national economy toward the service sector may risk prolonging structurally slow economic growth. Indeed, Korea is facing Baumol's cost disease in the service sector, where the creation of added value falls short of the increase in employment, impeding the overall economic growth. Accordingly, it is difficult to expect the service sector to serve as a growth engine behind the national economy. Overcoming the structural dilemma inherent in the market requires the fundamental reinvention of the service sector through disruptive innovation which changes the market paradigm itself, rather than sustaining innovation which expands the size of the service sector as it is. Accordingly, this study looked at the sharing economy as a way to bring dynamism to the service sector by addressing structural problems and as a new growth driver for the Korean economy. The study intends to present more objective growth strategies for the sharing economy by empirically and substantially examining conditions to promote and expand the sharing economy.

2. Objective of Research

This study will examine what it takes to create and expand a new service market based on the sharing economy, and how the

sharing economy can provide a catalyst to revive growth momentum and dynamism in the Korean economy. To this end, this study will look into the overall sharing economy, survey the preference of participants in the sharing economy market, perform an empirical analysis based on the survey findings to produce objective data for the future development of the Korean sharing economy market and develop growth strategies for the Korean economy through the promotion of the sharing economy. In particular, this study will 1) define the role of the sharing economy in inducing the growth of the service sector; 2) clarify the requirements to promote the Korean sharing economy through a comparative analysis of the sharing economy markets in Korea and abroad; 3) identify preference and inconveniences that Korean market participants experience in the sharing economy service sector as well as challenges facing sharing economy platform providers; and 4) define the role of the sharing economy in expanding Korea's service sector and overall economy. Chapter 1 and 2 discuss the advent of the sharing economy and types of sharing economy services currently available in the market and study the impact of the sharing economy on the Korean economy and current regulations. Chapter 3 provides what it takes to promote the Korean sharing economy by conducting surveys of preference in sharing economy services on various fronts. Chapter 4 analyzes consumer preference for ride sharing, one of the most representative sharing economy services. Chapter 5 examines the correlation between the growth of the sharing economy and the development of the service sector and presents implications and policy direction to promote the sharing economy.

Chapter 2. A Review of Business Models for the Sharing Economy

1. The Advent of the Sharing Economy

The advent of the sharing economy is not just due to developments or changes in certain parts of the society but a combination of factors such as socioeconomic, IT, and demographic environments. First, on the economic front, the outbreak of the global financial crisis in the late 2000s caused weak economic growth, tight job markets, and shrinking household incomes, resulting in the rapid proliferation of the sharing economy. Second, industry convergence driven by the development of social media and information communication technologies has also contributed to the spread of the sharing economy. Third, changes in the demographic structure and social perception also played a key role in the rise and proliferation of the sharing economy.

The term “sharing economy” was first used in 2008 by law professor Lawrence Lessig. Lawrence Lessig divided the economy into the traditional commercial economy and the sharing economy. He defined that the commercial economy operates according to the rules of money and labor and supply and demand, whereas the sharing economy is based on collaborative consumption, which allows people to share goods and services, rather than own them. In early 2010, Rachel Botsman and Lisa Gansky widened the meaning of the sharing economy to include the offline sphere and defined it as a business of creating new values by sharing personal belongings with others based on information technologies and the

related phenomena. Botsman and Gansky explained that the sharing economy allows providers to make economic gains and users to reduce economic costs. That is, the sharing economy directly connects suppliers with consumers for the transfer of the right to use with internet-based platforms functioning as a market.

Although there are various classification criteria for the sharing economy, this chapter divides the sharing economy into four groups according to the type of transaction between suppliers and users: 1) individuals–platforms–individuals; 2) individuals/businesses–platforms–individuals; 3) businesses/platforms–individuals; and 4) businesses–businesses. There are also other types of sharing economy, as the proliferation of the sharing economy creates greater revenue generation opportunities and attracts various companies. Notably, the boundary is blurring between B2P, in which companies establish their own platforms and do transactions with individual users, and conventional rental services, O2O and on-demand economies. In addition, B2B is not as commonplace as P2P, and not much research has been done in this area. Accordingly, this study limits the scope of the sharing economy to 1) P2P and 2) a cross between B2P and P2P.

2. Proliferation of Sharing Economy

According to an estimate from PwC (2015), the global market for the sharing economy will post an explosive CAGR of nearly 80%, expanding by 17.6 times from US\$850 million in 2010 to US\$15 billion in 2015 and by 20 times to US\$335 billion in 2025.

The scope of the sharing economy was centered on physical

assets in the early stage and has gradually expanded with the creation of diverse business models driven by the rapid expansion of the market and active participation by companies. By sector, the sharing of rides, accommodation, and cultural content is still in the growth phase and will likely sustain growth momentum. Going forward, the growth driver of the sharing economy is expected to shift from physical assets to intangible resources such as financial services and talent (e.g., crowd funding and online talent sharing), which are currently in the introductory stage.

3. Economic Ripple Effects of the Sharing Economy

Sharing economy service comprises three actors: 1) suppliers who have idle assets or idle labor force, 2) consumers who want to use them, and 3) match-making ICT platforms that bridge the suppliers and the consumers. Accordingly, a sharing economy model can be explained as a two-sided market model which charges optimal costs on either one of the two parties by allowing platforms to internalize cross network effects between disparate user groups.

In this study, the sharing economy service model is based on an assumption that service suppliers can become consumers and vice versa. As a sharing economy service involves the use of idle assets, sharing economy suppliers charge lower prices (or fees) than their conventional counterparts. It is also reasonable to assume that the right to use costs consumers less than the right to own. In response to the sharing economy service, incumbent suppliers have three options to choose from, which would 1) leave the prices of conventional services unchanged, 2) cut the prices of conventional

services to match those of sharing economy services, and 3) switch to sharing economy services. Consumers can continue to use existing services by incumbent suppliers or switch to new suppliers via sharing platforms. In addition, consumers can take part in consumption that otherwise is not possible by creating new demand via sharing platforms.

The performance of the sharing companies as well as economic changes that sharing companies may bring out to all economic players should be taken into consideration to understand the economic effects of sharing economy. Accordingly, the economic effects of sharing economy services should be seen from both supply and consumption perspectives.

First of all, supply-side changes can be divided by three groups of service suppliers—incumbent suppliers, who supply services in a conventional way; converted suppliers, who switch from existing services to sharing economy services; and new suppliers participating in the sharing economy. In the absence of sharing platforms, transactions occur according to the prices decided by market demand and supply, but the emergence of new suppliers using sharing platforms reshapes the pricing system. On the employment market, the sharing economy does not lead to job growth, as jobs are mostly converted from existing jobs. However, the number of converted jobs may fluctuate according to revenue growth and erosion. New providers of sharing economy services contribute to generating economic benefits by way of job creation and service revenues.

Second, user- or consumer-side changes can be divided by three groups of consumers—incumbent users of existing services,

converted consumers who switch from existing services to sharing economy services, and new consumers of sharing economy service. As incumbent consumers use existing services, they do not generate new economic gains to speak of. However, in the event that incumbent suppliers lower service prices to counter the expansion of sharing economy service, personal spending on service should decline, translating to an increase in disposable income.

Under the sharing economy, platform operators generate economic benefits in the form of ad revenue and platform service fees collected from service suppliers or consumers and create jobs with business expansions.

4. Regulations on Sharing Economy

The sharing economy has such a wide scope of transactions that related laws cover extensive areas encompassing the Commercial Act on business transactions to land, housings, labor, employment, investments and fundraising. However, as the current legal system is based on the ownership economy, it is not applicable—as it is—to the sharing economy. Korea and many countries are easing (conditional approvals) or abolishing (full approvals) existing regulations that have put a shackle on the growth of the sharing economy. Regulatory changes are leading to the gradual expansion of the sharing service market, which was otherwise prohibited to ensure a level playing field with incumbent market players. However, the advent of the sharing economy is on a collision course with incumbent players of the non-sharing economy market and current regulations focused on ownership economy. Accordingly,

promoting the sharing economy requires discussions on the establishment of new laws and institutions or amendments to the existing regulatory system.

In the case of a home-sharing service, regulatory issues arise at the pre-market entry stage and the post-entry stage (regulatory fairness for market incumbents). First, pre-entry regulation concerns whether to legalize short-term rentals of primary residence, which does not fulfill legal requirements as holiday accommodation. There is nothing legally problematic about providing facilities, which satisfy legal requirements as accommodation establishments and are registered accordingly, via sharing platforms such as Airbnb. However, short-term letting of rooms for profit can be deemed as illegal in regions without applicable laws and regulations.

Second, should new legislation be created to allow home-sharing service, it may put market incumbents on an unequal footing. Accordingly, whether and to what extent the government should regulate home-sharing service is also a key issue.

One of the leading ride-sharing service providers is Uber, which started in San Francisco in 2010. With its business networks expanding globally, Uber has come into conflict with local regulations, institutions, and incumbent players in cities around the world. In the case of Korea, Uber's entry to Seoul drew the ire of traditional taxi drivers and prompted the National Assembly and the Seoul Municipal Assembly to introduce related laws. Since its debut in Korea in July 2013, Uber has been mired in controversy on charges of the violation of Article 34-1 of the Passenger Transport Service Act and Article 9-1 of the Decree of the Act on Protection & Utilization of Location Information. As a result, Uber Korea

closed down its controversial UberX, in which ordinary people shuttle around paying passengers, in March 2015, and are currently operating only UberTaxi and UberBlack. UberTaxi allows customers to order taxis through their smartphone, while UberBlack provides a premium chauffeur-hailing service by hiring private taxi drivers, who have maintained an accident-free record for at least five years, as the revision of Article 18-2 of Enforcement Decree of Passenger Transport Service Act in September 2015 provided a legal basis for the premium taxi service. As such, legal controversies and conflicts of interests with existing taxi service providers make it impossible to operate a sharing economy business model, in which ordinary people, without any taxi license, carry passengers with their personal car. Currently, ride-sharing models are limited to a taxi-hailing service which connects independent licensed drivers to customers and a black car service which introduces premium vehicles and services. The concept of sharing economy has also infiltrated the financial service industry, creating crowd funding. Crowd funding has rapidly grown in the US and the UK since the mid- or late 2000s with the development of the IT industry. Major crowd funding players include Indiegogo and Kickstarter, with industry-specific companies such as Mosaic, a solar fin-tech company, and MedStartr, a healthcare crowd funding platform, coming to the scene. Crowd funding is an increasingly popular form of the sharing economy, as the wide introduction of crowd funding can provide a very useful financing option for low-income households and start-ups, which lack access to formal financial services. However, crowd funding is a service of a financial nature, and thus subject to various domestic regulations.

Chapter 3. Analysis of Korea's Sharing Economy

1. Outline of Research

To secure basic data needed to promote Korea's sharing economy service, this study conducted a nationwide survey of Koreans regarding the level of their participation in and perception of the sharing economy, usage behaviors and influencing factors, user satisfaction and future intentions, user perception and attitude after experience, and needs for stimulation. The survey comprises two parts: a survey of participants and non-participants in the sharing economy and a case study of ride-sharing services as a key example of the sharing economy. Based on the study of current participation in the sharing economy and the general perception, the survey classified those who have experienced the sharing economy by type of participation (a consumer, a supplier, a consumer & supplier) and examined usage behaviors, influencing factors, user satisfaction and future intentions, user perception and attitude after experience, and platform evaluations.

2. Analysis of the Comprehensive Survey

This chapter discusses the results of the comprehensive survey of Koreans regarding the level of participation in and perception of the sharing economy, usage behaviors and influencing factors, user satisfaction and future intentions, user perception and attitude after experience, and challenges. The key findings can be summarized as follows.

First, participants in the sharing economy have the following characteristics. 1) Those who experienced the sharing economy did so mostly as consumers. However, more than 50% of those surveyed responded that they intend to participate in the sharing economy both as a consumer and supplier in the future. 2) Interest in sharing economy increases with age and income. 3) Women are more active participants in the sharing economy than men, and participation in the sharing economy increases with age, income and use of information communication technologies. 4) The higher the economic status and the level of technology use are, the more inclined one is to participate in the sharing economy as a consumer. In contrast, the lower the economic status and the level of technology use are, the more likely one is to participate in the sharing economy as a supplier. 5) Those who haven't used the sharing economy cited the lack of trust and promotion as reasons.

Second, consumption of the sharing economy has the following characteristics. 1) The most popular segments of the sharing economy among consumers are goods, spaces, and means of transportation in that order with key variables being occupation, gender, age, number of children, income, and use of information communication technologies. 2) Financial benefits are the key motivation for consumers to participate in the sharing economy. Trustworthiness and convenience are the most important considerations in real transactions. 3) Those with higher income levels are more inclined to be satisfied with the sharing economy and more willing to use it. The level of satisfaction by segment varies according to age and occupation. 4) In the spaces, goods, and means of transportation segments, user satisfaction hinges on price merits and convenience

in use, while in the knowledge and experience/time segments, user satisfaction depends on effects/efficiency and indirect experiences. 5) Those who have experienced the sharing economy think that the sharing economy supplements (goods, means of transportation) or replaces (spaces, knowledge, experience/time, financial services) the existing, traditional ways of consumption. 6) More than 50% of sharing economy consumers responded that they will participate as suppliers in the future, and the higher the income level is, the more inclined they are to participate in the supply side.

Third, supply of the sharing economy has the following characteristics. 1) The most popular segments of the sharing economy among suppliers are goods and knowledge with specialization by gender and age. 2) The efficient use of idle resources is the key factor that motivates and satisfies suppliers that participate in the sharing economy. 3) Economic gains that suppliers obtain from the sharing economy represent less than a 10% increase in income, and thus only supplement existing income. 4) High economic benefits from providing the sharing economy have high correlations with economic status, familiarity with information technologies, and offering of financial services. 5) As is the case with consumers, a low level of trustworthiness, insufficient legal and institutional support, and lack of promotion are found to be obstacles for suppliers to participate in sharing economy.

Fourth, the use of platforms has the following characteristics. 1) The key criteria for selecting sharing economy platforms include convenience in use and reliability of platform operators. 2) Women and middle-aged or older age groups are the largest user groups of publicly operated platforms, and the most frequently used and

supplied area is financial services.

Chapter 4. Analysis of Consumer Preference for Ride-Sharing Service

1. Necessity and Objective of Research

Currently, the traditional taxi service market has made progress and improvements with the introduction of credit card payment systems, on-call taxi services and driver service training. Nevertheless, due to a short supply of taxis in certain areas and time zones, there have been constant complaints about taxi fares and passenger refusals by drivers. In addition, traditional taxi operators have failed to satisfy growing consumer needs for personalized and premium services in terms of vehicles, drivers, driving routes and fares.

Against this backdrop, the development of information technologies and the proliferation of smartphones led to the establishment of technological infrastructure for service providers and users, and enabled platform businesses to launch app-based ride-sharing services such as Uber. However, legal ambiguity and lack of qualification standards have raised concerns that new app-based ride-sharing services may harm existing businesses or cause damage to consumers. For example, in the face of legal disputes, Uber, which entered Korea in July 2013, closed down its ride-sharing service, UberX, and only operates its app-based taxi booking service.

The problem is although new sharing economy services may help address consumer dissatisfaction with the existing taxi service

market to a certain extent, policy decisions are being held back due to concerns over the adverse effects that the emergence of new services may have on the supply side.

Accordingly, this chapter identifies problems that may arise between new ride-sharing services and conventional taxi services. Based on the survey results, the chapter will analyze various attributes that make up the conventional taxi and ride-sharing services and consumer preference for the level of respective attributes. Given this, this study will look into the desirable direction for regulations and policy measures to improve the efficiency of the taxi service market as a whole.

2. Characteristics of Ride-Sharing Service

In Korea, customers use taxi service by 1) hailing an ordinary taxi on the street or contacting on-call taxi service, 2) requesting an ordinary taxi via apps, 3) ordering a premium or limousine taxi service via apps and 4) booking a personal vehicle driven by non-commercial drivers via taxi apps. Of these, 2) has carved out its place in the market with the rapid proliferation of taxi app services such as Kakao Taxi, and 3) is expanding by satisfying distinctive demand for premium taxi services. These taxi app services do not spark backlashes from traditional taxi operators and face few legal or regulatory controversies thanks to its role that supplements traditional taxis. These services can be broadly seen as a sharing economy model, but strictly speaking, they are more of an on-demand business model than a sharing economy model in its purest form, as they do not connect ordinary individuals. In contrast, 4)

service represented by Uber is a sharing economy model in its true sense in that it maximizes the use of idle assets. Nevertheless, it is difficult to make a full-fledged market introduction due to strong resistance from existing taxi operators and persistent legal and institutional controversies.

3. Data for Analysis

This study conducted a conjoint analysis, dividing taxi services into four types: 1) random taxi-hailing on the street and on-demand call service for traditional taxis; 2) ordering traditional taxis via apps (e.g., Kakao Taxi); 3) requesting a premium or limousine taxi service via apps (e.g., UberBlack); and 4) booking a personal vehicle driven by non-commercial drivers via taxi apps (e.g., UberX). In addition, the study analyzed how consumer preference for these four types of services changes according to two hypothetical situations, where traditional taxi service is easily accessible or is in short supply such as late hour hailing and in remote areas.

Respondents who participated in the survey were presented with 10 choice sets with four options in each of the two hypothetical situations and asked to indicate their preference. As such, 2,500 respondents each provided 20 observations, and a total of 25,000 (2,500×10) observations were used to analyze each of the two hypothetical situations.

4. Analytical Models

In the context of this study, a multinomial logit model was ex-

amined. The random utility model below shows utility that a respondent n in the t th response obtains from an alternative taxi service, j ($j = 1, 2, 3, 4$) in a hypothetical situation m ($m = 1, 2$).

$$U_{njt}^m = \alpha_j^m + \sum_k^{K^m} \beta_k^m X_{njkt}^m + \epsilon_{njt}^m, \quad j = 1, 2, 3, 4, \quad m = 1, 2$$

Under the random utility model, α_j^m s is an alternative specific constant. In the case of $j = 1$ (i.e. the use of traditional taxi services such as random taxi-hailing on the street or on-call tax service), the alternative specific constant is set at 0. Based on this, the alternative specific constant reflects consumer preferences for different taxi services in relative terms. As the value of the alternative specific constant varies according to a hypothetical situation (m), it reflects how consumer preference for taxi services changes in each situation. X_{njkt}^m in an explanatory variable related to the k th attribute of an alternative taxi service j ($j = 1, 2, 3, 4$) presented to a respondent n in the t th response in a hypothetical situation m and the level of the constituent attributes.

As aforementioned, the level of the constituent attributes differs according to the hypothetical situation 1 ($m = 1$) and hypothetical situation 2 ($m = 2$). As such, the study adopted different values for K^m , which represents the total level of the constituent attributes, and X_{njkt}^m , which reflects the level of respective attributes, according to a hypothetical situation m . β_k^m is a coefficient, which measures how utility in a hypothetical situation m is affected by the k th attribute of an alternative taxi service j and an explanatory variable X_{njkt}^m , which reflects the level of respective attributes. Lastly, ϵ_{njt}^m is a disturbance term or a random part, which includes unobserved factors.

5. Model Results

The analysis of model 1, which reflects only the alternative specific constant (the most basic situation), shows that in both an ordinary situation and a short-supply situation (e.g., late night hiring and remote areas), hailing traditional taxis via taxi apps is the most preferred way of service, followed by random taxi-hailing on the street or ordering traditional taxis via on-call tax service, requesting a premium or limousine taxi service via apps, and booking a personal vehicle driven by non-commercial drivers via taxi apps. Meanwhile, pure sharing economy taxi services such as UberX still rank low on the consumer's preference scale but relatively high in a short-supply situation (e.g., late night hiring and remote areas). The result indicates that the introduction of a pure sharing economy model in a tight supply situation may ease a supply shortage to a certain extent by offering a new option for consumers without harming the existing taxi service industry.

The analysis of model 2, which reflects other attributes such as taxi fares, surcharges, passenger refusals, service agencies, and types of insurances, suggests that in an ordinary situation (i.e. a hypothetical situation 1) with no supply shortage, consumers have little motivation to use non-professional drivers or personal vehicles/premium vehicles other than taxis, and the type of vehicles is more influential on consumer preference than drivers. In contrast, it was confirmed that there is consumer preference for the availability of further information (e.g., fares, drivers, routes, and vehicles) even in an ordinary situation. Overall consumer preferences remained the same in a tight-supply situation (i.e. a hypothetical

situation 2). However, the degree of non-preference was higher in the case of non-professional drivers and premium vehicles and personally owned vehicles other than ordinary taxis. Notably, consumer preference for additional information was higher. This shows that consumers find the availability of additional information (e.g., fares, routes, drivers, and vehicles) more valuable in a tight-supply situation (e.g., late night hiring and remote areas).

Consumer reluctance about the current fare systems and passenger refusals is relatively low in an ordinary situation; however, in a short-supply situation, consumers prefer a flexible fare system to the current surcharge system applicable to late night hiring and out-of-town trips. Consumer reluctance is very high about passenger refusals. The degree of consumer non-preference for a personal auto insurance policy is high, especially in a short-supply situation. This suggests that consumers put an emphasis on the service provider having a commercial auto insurance policy, which provides more reliable coverage on damage claims in case of an accident. Meanwhile, service agencies are preferred in an ordinary situation as well as in a short-supply situation. In particular, consumers have strong preference for public service agencies, reflecting that the reliability of service is a key management criteria for service agencies. Price sensitivity is considerably low in a short-supply situation, compared to an ordinary situation.

The study confirmed how the attributes of taxis and taxi app services and the level of the component attributes affect consumers via relative importance and the marginal willingness-to-pay. The analysis of relative importance shows the taxi fare is the most important attribute both in an ordinary and a short-supply situa-

tion. Of consumer selection criteria, the next important attribute was the type of services in an ordinary situation and the degree of passenger refusals in a short-supply situation. Whether the type of an insurance policy is personal or commercial auto insurance is a decisive factor in both situations. In contrast, the surcharge method and service agencies do not play an important role in consumer decision on taxi services compared to other attributes in both situations.

The marginal willingness-to-pay of respective attributes is higher in a short-supply situation than in an ordinary situation. That is, changes in the level of respective attributes make a significantly greater impact on consumer welfare in a short-supply situation, than in an ordinary situation, where taxis are easy to find. The result indicates that when developing regulations and policies for the taxi service market, the government should take a short-supply situation (e.g., late night hiring and out-of-town trips) into high consideration to maximize consumer welfare. One of the key characteristics associated with the introduction of a pure sharing economy business model is that the difference in the marginal willingness-to-pay between a pure sharing economy taxi service and traditional taxis is largest in an ordinary situation, indicating the introduction of a pure sharing economy service does not make significant contribution to increasing consumer welfare. In a short-supply situation, improvements in passenger refusals make a greater contribution to boosting consumer welfare than the introduction of a pure sharing economy taxi services.

The analysis shows that contrary to concerns, pure sharing economy models such as Uber (especially UberX) are unlikely to

affect the traditional taxi market in an ordinary situation, where taxis are not in short supply, and thus it is necessary to consider easing ex-ante regulations that ban market entries.

Chapter 5. Development Direction for the Sharing Economy and Service Sector

1. Environmental Changes for the Growth of the Service Sector

With the manufacturing sector reaching its limitations in contributing to the domestic-demand economy, it becomes more convincing that the service sector should take the role of the growth engine for domestic demand. However, Korea's service sector saw its annual revenue growth drop from 15.2% in 2010 to 4.3% in 2014. In addition, the share of the service sector in the Korean economy still falls short of 60%. Accordingly, the domestic service sector is too small to take the role of the manufacturing sector in driving Korea's economic growth. One of the fundamental challenges facing the Korean service sector is lackluster improvements in productivity. Accordingly, pursuing quantitative, not qualitative, growth targets for the service sector is not sufficient to overcome a growth cliff resulting from a demographic cliff and the subsequent sharp drop in consumption.

However, the development of digital technologies, which drive the Fourth Industrial Revolution, such as IoT, artificial intelligence, big data, and cloud computing, is creating a business environment, allowing the service sector, which has played a limited role as a growth engine compared to the manufacturing sector, to emerge

as a growth driver of the entire economy, leveraging new technologies.

The evolution and development of digital-based new services prompted by the Fourth Industrial Revolution take place through servitization and platform. First, servitization means the creation of hybrid values by innovatively combining products and services to secure the manufacturing industry's growth potential and competitiveness. Second, platform refers to business changes surrounding the service sector like the rise of platform businesses. A platform business is a business model in which a business operator creates values and generates economic gains by inducing suppliers and potential customers to do transaction within the platform, rather than directly producing goods. Leading platform business models include "on-demand" and "sharing economy." The emergence of new service business models creates new types of jobs that did not exist before. These new jobs generate more income to individuals and companies, and income growth boosts the domestic market by stimulating consumption. As such, if a virtuous economic structure takes root, it will bring more dynamism to the entire Korean economy, let alone the service sector.

2. Advent of the Sharing Economy and Growth of the Service Sector

When a country has excess production as result of an increase in national wealth and productivity, it may be detrimental to economic growth. In a situation where excess production becomes a problem, the creation and expansion of the sharing economy mar-

ket create economic growth momentum by removing excess resources owned by market players, i.e. companies and individuals. Accordingly, platform-based business models such as the sharing economy lower transaction costs or friction costs that users and suppliers pay for assets or services, and increase the welfare of all market participants by efficiently allocating the right amount of resources in the right places.

Matching suppliers and users of products, time, labor force, and spaces through a sharing economy platform generates efficiency on various fronts in the form of a decline in transaction and search costs, a more efficient allocation of resources, lower levels of information asymmetry, and greater price efficiency. That is, sharing economy platforms allow suppliers to provide products and services at a lower cost and consumers to use products and services at a lower price thanks to improvements in price efficiency. In addition, the increased efficiency in the allocation of resources makes it easier to sell products, lend assets, and provide labor such as personal errand services and creates a new source of economic benefits for suppliers or consumers. It also lowers regional and spatial barriers, expanding the pool of potential suppliers and users.

Transaction methods, which improve the welfare of the entire society, increase demand for new services and thus induce the creation of new types of services. The rise of new services works in a way that makes the overall service sector more dynamic and ultimately boosts the service sector's productivity and competitiveness.

The current sharing economy model, whose transaction structure is based on platforms and the two-sided market, has expanded

beyond the sharing of information to real business transaction, on the back of the emergence of IoT and O2O (Online to Offline). The sharing economy model in its early stage was limited to physical assets such as ride- and home-sharing. However, the rapid growth of the market and the diversification of business models with active participation by companies have driven the expansion to include intangible assets thanks to cultural content sharing, crowd funding and online talent sharing.

The rise and expansion of the platform-based service sector such as the sharing economy will change the structure of the Korean service sector in an innovative way. The growth of the innovative service sector can be seen from two perspectives. First, the traditional service sector (e.g., accommodation, cars, restaurant, parking, delivery, spaces, and talent) may evolve to O2O-based “Digital Concierge Service,” blurring the existing offline boundary and breaking free from a low value-added trap. Second, the growth of innovative service sectors (e.g., the sharing economy) is significant in that it enhances the market dynamics. That is, it provides an environment where it is easier to start new businesses, and these new startups grow or exit the market through competition, ensuring the dynamism of the Korean service sector.

Of course, the proliferation of the sharing economy does not necessarily work favorably for the growth of the service sector. Sharing economy service companies and individual suppliers are highly likely to develop competitive relations with market incumbents, which means the former will likely expand at the expense of the latter. As a result, it is important to set policy directions as to how to allocate the economic benefits of new services and how

to define dynamic relations between individuals or the internal workings of the existing economic system in order to ensure that the proliferation of the sharing economy will lead to the growth of the entire service sector.

3. Policy Suggestions for the Expansion of the Sharing Economy Service Market

(1) Direction for regulatory policies

The regulation of the sharing economy faces conflicting issues of whether to safeguard the existing order of the economy or to stimulate economic activities through the proliferation of new services based on a sharing economy business model. The market's failure resulting from information asymmetry and consumer protection issues also justify the necessity of regulating the sharing economy. In the event of a dispute between sharing economy service suppliers and consumers, the existence of consumer protection regulations serves as an efficient vehicle to reduce consumer inconvenience and damages. Accordingly, it is essential to clearly define legal accountability and social responsibility of sharing economy platform operators for consumer damages and establish institutional and procedural frameworks to resolve disputes. The necessity of regulations is also justifiable by the use of private information (i.e. personal and location information) that sharing economy platform users inevitably provide, privacy protection issues, and legal accountability.

Accordingly, this study suggests the basic direction and princi-

ples for regulations on the sharing economy in the following four ways.

First, legal and institutional frameworks should be overhauled in a way that stimulates the sharing economy market to amplify its positive economic effects. The central and local governments and the political circle should aggressively pursue and coordinate policies and seek cooperation to enhance the efficiency of the regulatory frameworks and to minimize the conflicts of interest with market incumbents and stimulate economic activities through the sharing economy.

Second, regulations on consumer protection, fair competition, and safety should be implemented with consistency. However, flexible application of regulation is also needed to ensure the efficient use of idle assets and human resources and the creation of new values via the sharing economy. It is imperative to closely follow recent developments in global regulations over the sharing economy and flexibly introduce them to Korea by adopting those compatible with Korea's current laws and institutions and improving those which need supplementary measures.

Third, the regulation of the sharing economy should take place in a way that keeps the use of traditional or top-down regulations to a minimum and reduces the regulation of the overall economy through a negative list approach. Traditional regulation tends to fall behind rapid changes in the sharing economy, making it difficult to take proactive actions, and may risk slowing the pace of the market development. Indeed, as many sharing economy services use reputation systems, allowing consumers to share service ratings or user reviews, inducing sharing service companies to exercise

self-regulation is more efficient.

Fourth, it is essential to expand the infrastructure of the sharing economy, support the creation of startups and jobs in the sharing economy market, and establish the fair and equitable taxation system for both for-profit and not-for-profit platforms to ensure that the sharing economy will serve as a growth engine for the entire economy, not just the service sector. It is also necessary to consider easing or adjusting regulations on market incumbents, rather than imposing new regulations on new market players, to ensure that regulatory improvements will have positive impacts on market incumbents.

(2) Policy tasks

Stimulation of the sharing economy requires the following policy tasks.

First, the private-public collaboration system should be established to make the sharing economy more accessible. Earlier this year, the Korean government announced plans to stimulate the creation of startups and new business activities by institutionalizing the sharing economy with the establishment of legal and institutional frameworks. The survey results also reflect the necessity of close private-public cooperation on diverse areas such as laws, institutions, promotion, and training to foster the sharing economy market in Korea. Accordingly, meeting policy demands requires efforts to 1) protect the interest of sharing economy consumers and personal information and establish legal and institutional environments to facilitate the market entry by suppliers, 2) provide

information and promote accurate understanding of the sharing economy, 3) enhance support for information technology education to facilitate the elderly's participation in the sharing economy, and 4) take into policy consideration ways to enhance the convenience of platforms for sharing economy suppliers and to control the quality of service.

Second, big data infrastructure should be established to enable the growth of the sharing economy. In general, transaction information on platform-based businesses such as sharing economy is structured and saved in the form of big data. Recently, the use of big data has expanded beyond the public sector such as healthcare and taxation to the private sector such as sharing economy companies as a key tool in predicting future market trends or maximizing marketing effects. Korea is also making multipronged efforts to build a big data infrastructure, with the National Information Strategy Committee announcing plans for big data-based smart government in 2011. However, as the development of big data requires the protection of private information, the unfettered use of big data is difficult in reality. Accordingly, the proactive prevention of personal right infringements needs the following three measures. First, it is necessary to introduce an opt-in consent for the sharing of personal information to reduce personally identifiable information (PII) or create new categories for less-identifiable information, given the purpose of requiring permission and the need for promoting the use and application of personal information. Second, regulations should be eased to facilitate the use of big data on personal information, which requires a lower degree of protection, and instead set strict requirements to prevent any abuse or viola-

tion by information collectors and processors.

Third, the system should be overhauled in a way that protects consumers of sharing economy platforms. The spread of new transaction methods such as the sharing economy calls for changes in current consumer protection policies. Notably, as the sharing economy is in legal and institutional gray areas, there is often a lack of clarity over accountability and a high risk of conflicts of interest between stakeholders. As such, it is time to reform the protection system for consumers, being the weaker of the two parties. The following three factors should be taken into consideration to overhaul the consumer protection system.

1) Clarification of accountability for adverse externalities and improvement in the insurance system. With the proliferation of the sharing economy, there is an urgent need to set standards to assign accountability for adverse externalities from the emergence of new services and to improve the insurance system for damage compensation.

2) Reduction of asymmetric information about sharing economy service. In general, asymmetry of information exists between service providers and consumers in the sharing economy market. Platform operators are obliged to reduce information asymmetry by providing accurate, objective information on the reputation of their services. If these obligations are neglected, the government should be able to impose direct regulations and use nudges as smart and effective regulatory tools.

3) Introduction of licensing and verification systems to sharing economy service providers. In general, sharing economy platforms have opted to verify personal information, which is the most pas-

sive way of enhancing trustworthiness and reputation of service providers and consumers. Accordingly, even if sharing economy platforms may risk the lemon market problem, it necessary to set appropriate standards for licensing and verification through the adoption of rules and legislative procedures to protect consumer rights more proactively.

This study identified various demand and supply factors that are needed for the expansion of Korea's sharing economy. The study also looked into the role of the sharing economy to achieve the qualitative growth of the service sector. This study confirmed that the growth of the sharing economy and the service sector requires the establishment of an efficient and consistent transaction system through which economic ripple effects generated from new services increase the overall welfare of the economy, rather than being concentrated in a certain sector. The study also confirmed the need for government policies to ensure equitable distribution of economic benefits from new services.