

Tourism Information System Based on Sharing economy Using an Integrated Information Communication Technology Platform

Woong-Ki Min and Jin-Hee Ku*

*Dept of Liberal Education, Mokwon University
Doan-Dong, Seo-gu, Daejeon, 302-729, Korea
sunppk, jhku*}@mokwon.ac.kr*

Abstract

ICT platform currently plays a role as a crossover point in business networking, and it enables collaborative consumption that both suppliers of resources and consumers are connected to through social capital. A support organization of tourism resources based on integrated ICT platform enables stable establishment of sharing economy systems. The integrated ICT platform for tourism resources helps build the educational system of tourism resources' service operation to aid in sustainable management. The platform contributes to the development of a profit-making tourism business model and helps press ahead with a variety of social integration businesses. Tourism resource support systems based on ICT enables the realization of different social values and delivery of tailored information to consumers, increasing the utility of the market.

Keywords: *ICT platform, tourism, sharing economy, sustainable management, network*

1. Introduction

With the rapid development of information technology, the leisure and tourism-related information system has now reached a new turning point. In the field of leisure and tourism information Web 2.0 has been regarded as an important marketing tool. It is characterized by openness, user participation, and knowledge sharing and has had an impact on the leisure and tourism service system recently. ICT has helped construct an integrated platform that connects suppliers and consumers in tourism, and encourages interaction between suppliers and consumers [1-2]. ICT helps organize a new information service system that distributes leisure and tourism materials that can satisfy both suppliers and consumers [3].

Recently social or sharing economies have been in the spotlight as a new cooperative consumption system, and they allow more effective relationships between suppliers and consumers through building social capital in a flexible society [4-6]. ICT platform currently plays a role as a crossover point in business networking, and it enables collaborative consumption that both suppliers of resources and consumers are connected to through social capital.

There has been much research on the connection between internet networking and sharing economy [7-8], and this research has been getting more attention due to the increasing discussions of a convergent system of human behaviors, economic systems, and the exchange of values between humans and society. It is necessary to consider a new alternative economic system that includes both economic and social benefits to understand the benefits of the system. Furthermore, the integrated ICT platform plays a role of a node in the network of leisure and tourism suppliers and consumers and it contributes to the construction of a new business ecosystem.

* Corresponding Author

It can be shown that ICT development facilitates the dissemination and systematization of a new tourism information system[9-10], and therefore there is a need for a new theoretical model to explain how to manage this new information system.

This study's goal is to theorize on the supply and demand construct for leisure and tourism information by reviewing modern social science theories and discussing both the social importance and values of the newly formed economic system.

2. The Role of ICT in Applying a Sharing Economy to Tourism

2.1. Expansion of the Principles of Economics

As one of the main principles of a market economy is the ownership of tangible resources, both enterprises and consumers compete with each other for tangible resources respectively. However the more complicated and sophisticated the economic orders become, the higher that intangible resources are valued. Therefore the cooperative network for the exchange of intangible resources, as well as tangible resources, becomes important in a society. As this cooperative exchange relationship continues, the value of the main economic orders may be extended into the trust gained through this continuous sharing of values. Figure1 shows the expansion of the goals and scopes of an economic system. The main principles of economics can be said to be: the ownership of tangible resources, the exchange of tangible and intangible resources, and the continuous sharing of values. With ICT they gain significance in a society and the goals and scopes of the economic system are expanded from that of competition to cooperation and trust (see Figure 1) [11-13].

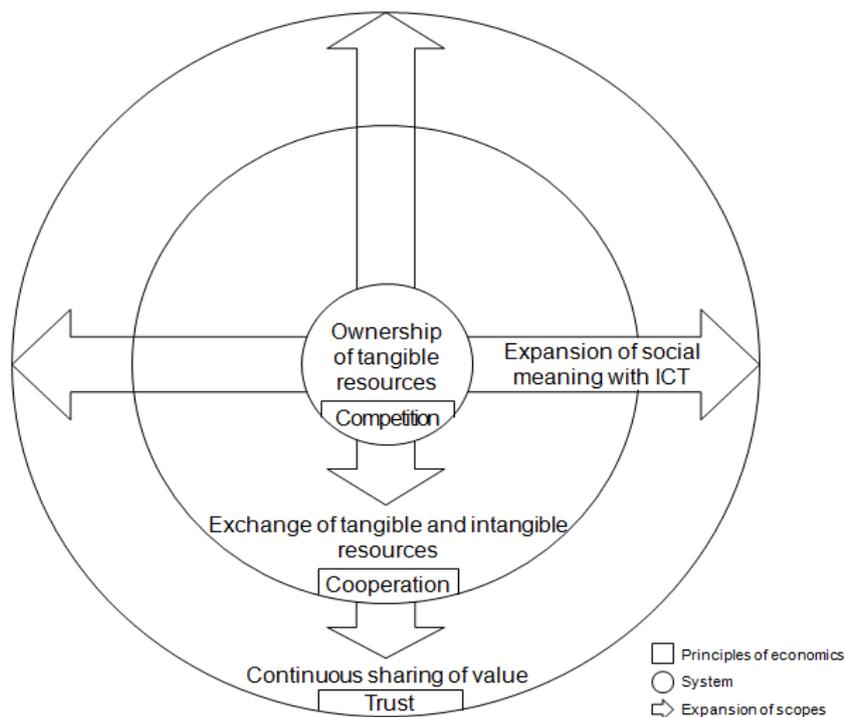


Figure 1. Expansion of Goals and Scopes of an Economic System with ICT

2.2. Applications of Sharing Economy on Tourism using ICT

ICT expands the ranges of the applications of a sharing economy through different redistribution channels of service products. Figure 2 shows the direct use of tourism service in tourism spaces, as well as support for tourism service in tourism spaces. Service

products can be divided into tangible and intangible resources. Unused tangible resources like accommodations and eating establishments or tourism vouchers and coupons are directly available in tourism spaces through ICT[14]. Meanwhile resources for leisure activities consist of transportation for traveling to destinations and products which are available at destinations. Lifestyle and cultural contents are intangible resources directly available in the tourism spaces, and ICT enables visitors to experience the local lifestyle and understand the diversity of culture.

With the development of information and communications technology the distribution channels of service products are able to assist tourism with information/knowledge exchange for tourism activities. Sharing experience and exchanging knowledge in an open information platform will be one important role of a sharing economy(see Figure 2) [15].

ICT facilitates the implementation of a sharing economy in different areas of tourism, and they continue to evolve into new cultural or industrial initiatives. Although it is difficult to say that ICT has an absolutely crucial role in implementing a sharing economy in tourism, it is clearly one of the important factors.

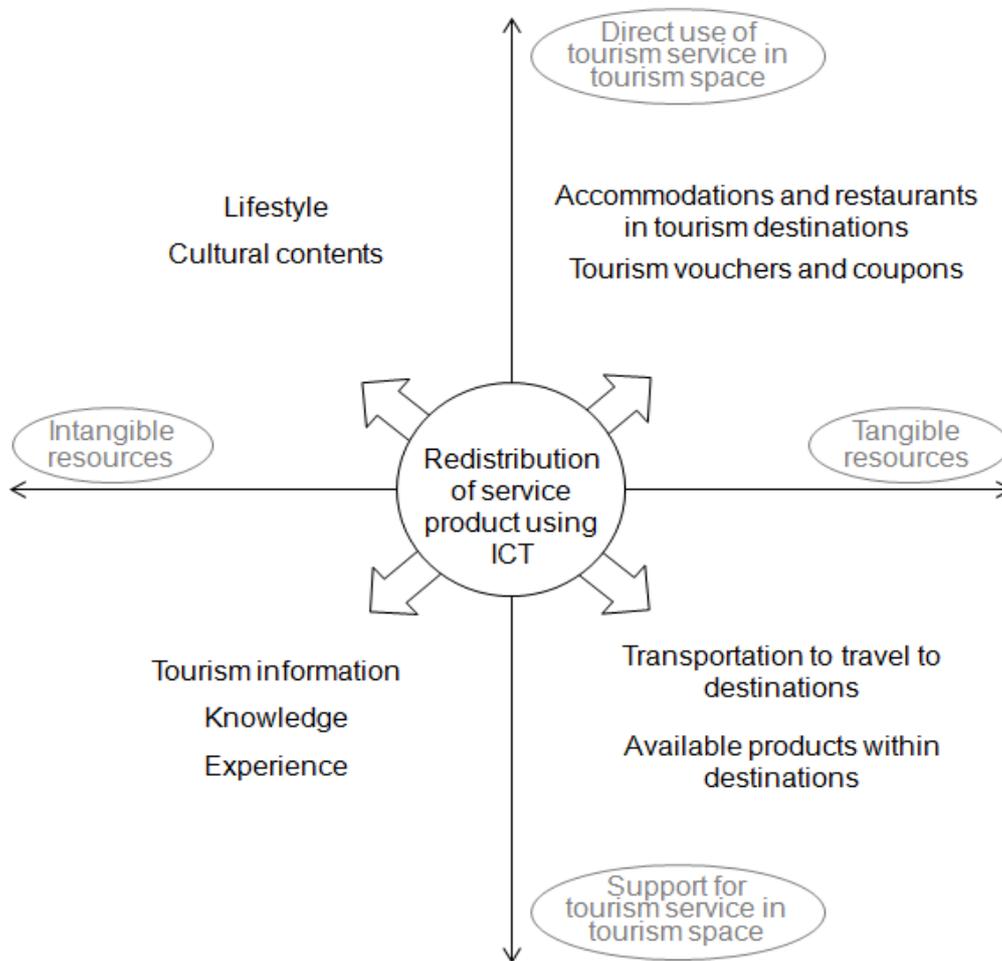


Figure 2. Application of Sharing Economy on Tourism using ICT

2.3. Expansion of the Scope of a Sharing Economy in Tourism

There are two areas that facilitate the expansion of a sharing economy in tourism; production and consumption, and they aid in the implementation of a sharing economy through tourism(see Figure 3). In terms of production of tourism it is possible to implement a sharing economy through the development and distribution of information

technology, the supply of leisure services, and the introduction and development of cultural products.

For consumption of tourism a sharing economy helps build a cooperative consumption network for the tourism industry composed of different players like destinations, transportation, restaurants and so on. It also enables the transparent use of public services and helps those services be used for beneficial social purposes.

This is because most tourism resources are natural environments and feature non-competitiveness and excludability. A sharing economy enables different cultural experiences and prevents cultural exclusion, making the members of society acknowledge the diversity of culture [16-17].

Sharing economy is implemented both by production and consumption in tourism. It becomes increasingly stimulated because of the natural characteristics of the resources, reciprocity and the exchange of unused resources between participating parties.

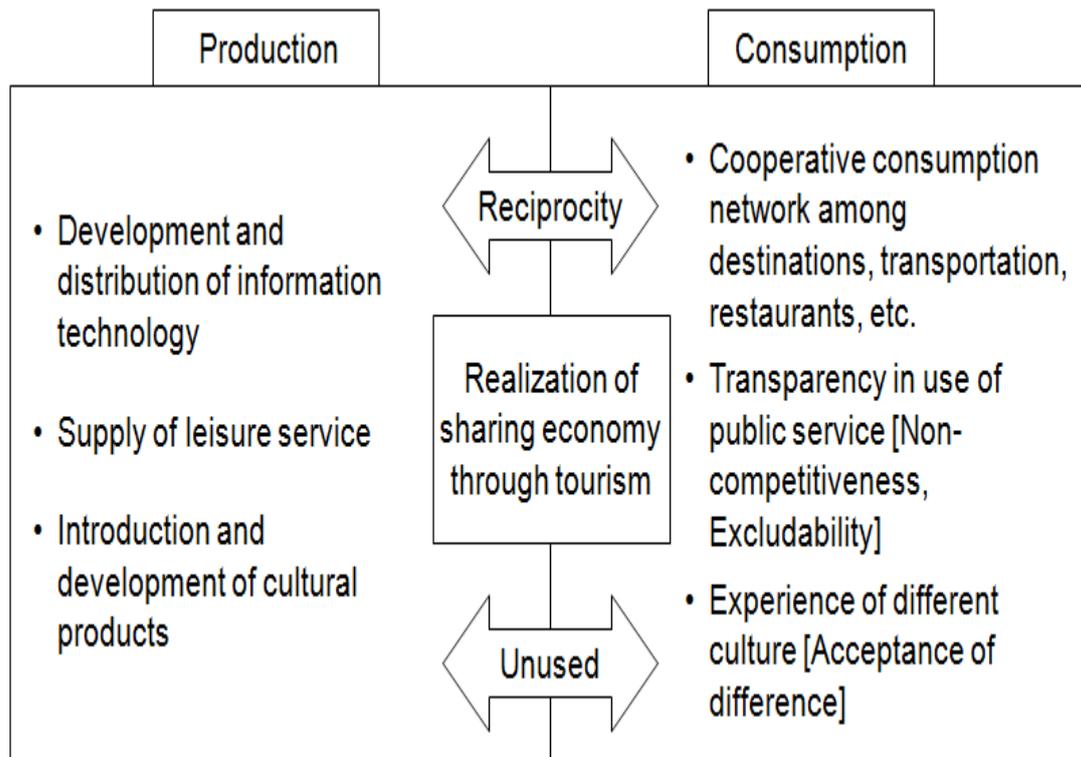


Figure 3. Expansion of the Scope of a Sharing Economy in Tourism

A sharing economy can be implemented more variously along the connecting structures between ICT and tourism. Based on ICT a sharing economy in tourism creates economic capital through generation of profits, social capital in enhancing accessibility to tourism resources by securing means of communication, as well as cultural capital in educating the principle of reciprocity in its curriculum. Sharing economy also enables the utilization of unused resources, the use of an information network and the internalization of experience and education (see Figure 4)[18-20].

They can be a medium to connect with related studies and become an industrial goal to help develop on-line and off-line relationships using unused resources. The industrial structure of these relationships can be reorganized by an open and shared information resource. Furthermore, they can seek both economic value in creating profits as well as social value as public service based on social equity.

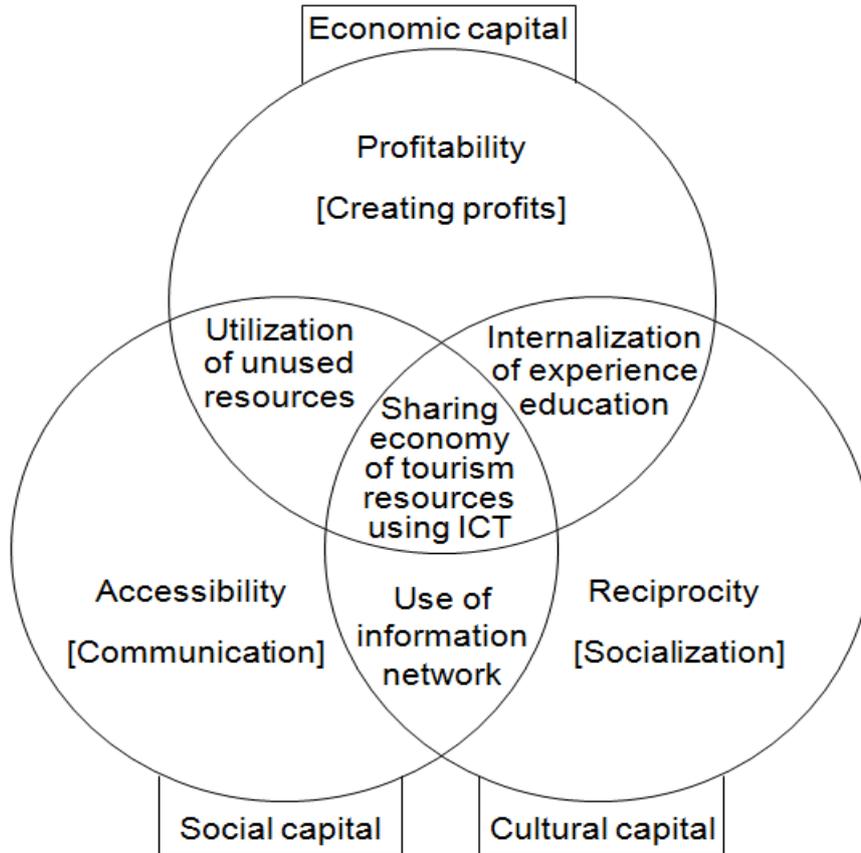


Figure 4. Realization of a Sharing Economy through Combining Capitals: Tourism and ICT

3. Public Concern and Leisure and Tourism Information System based an Integrated ICT Platform

3.1. The Exchange System acts Like a Social Economy and Sharing Economy using an Integrated ICT Platform

As social needs for a new economic system above and beyond conflicting paradigms, a market economy and welfare system are spreading; highlighting especially the concepts of social economy and sharing economy in the spotlight [5] and [21-23].

Such alternative economic systems attempt the collaborative consumption of tangible and intangible resources that have been neglected such as goods, knowledge, experience, time and space and the like. This is done for the sustainability of social values, leading to the creation of a new business model which also seeks a stable profit structure [24].

Figure 5 shows a model of an integrated ICT platform that enables the transaction of resources between suppliers and consumers through sharing economy using ICT(see Figure5). The sharing economy can be realized on the premise of trust and security between suppliers and consumers. It also brings about reciprocity, exchange of a variety of tangible and intangible values. Integrated ICT networks contribute to the establishment of a network which enables information transactions between suppliers and consumers.

This networking is the very heart of ICT operation, and this information is very comprehensive; including information on goods, services, and tasks. The integrated ICT platform brings profits from market information to suppliers of resources and information, while possibly billing consumers for the use of market information. If the exchange

becomes a systematic transaction, it can contribute to stable formation of social capital in a flexible society which is created through ICT.

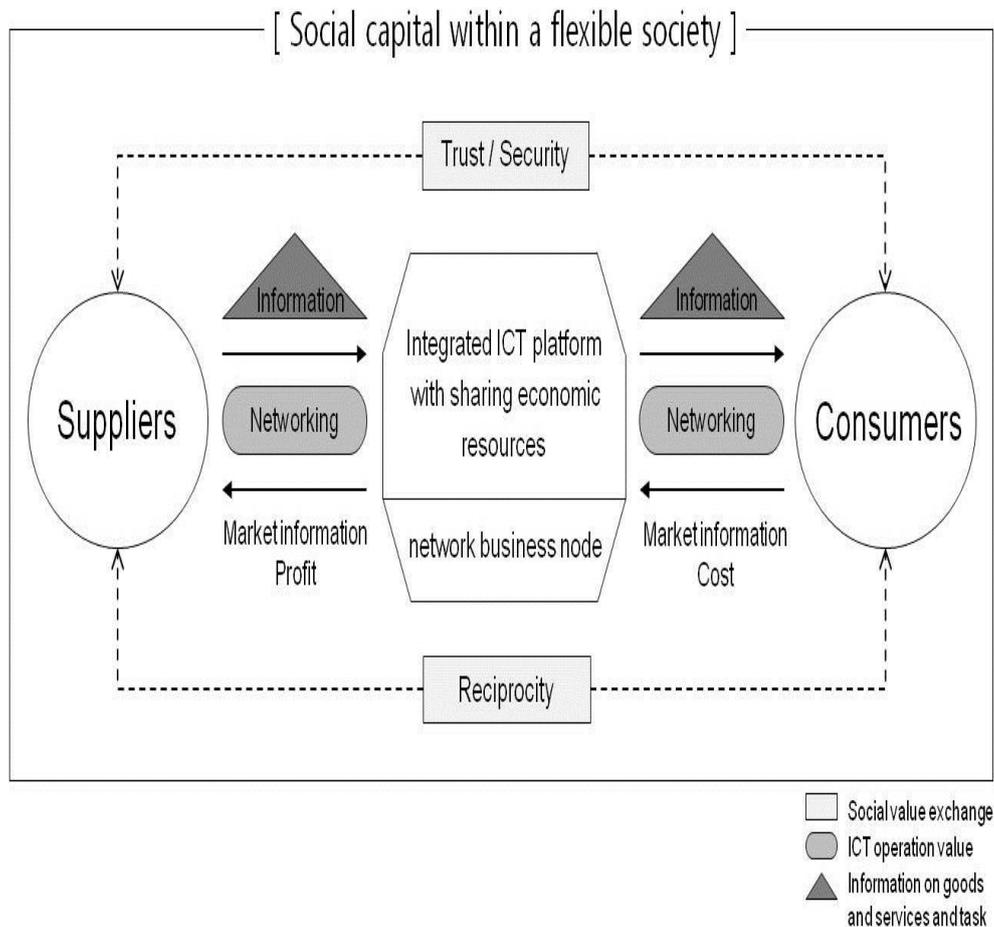


Figure 5. An Operation Model of Integrated ICT Platform with Sharing Economic Resources

ICT plays the role of an integrated node in network business by creating an integrated platform for such alternative economic resources. The integrated ICT platform helps the stable management of social capital in a flexible society, and the creation of social values like trust and security based on the principle of public reciprocity[25].

It also plays the role of a hub in the network, enhancing the values of a community business model that encourages the exchange of market information, ensuring various profit models. Individual media users are participating more actively recently in transactions in terms of the ‘sit-forward’ model that seeks an alternative economic system through connecting ICT and SNS. In these transactions consumers are increasingly interested in upholding public values which helps the stabilization of economic system for collaborative consumption [26-27].

Integrated ICT platforms provide information about the price and availability of a product online. At the same time it is used a space for communication among participants in economic activities, as well as for the management of data to support direct transactions and distribution.

It changes the traditional consumption system which is based on the possession of a product by market economy. The alternative economic system has social importance in terms of creating profits on the sale of unused resources and pursuing social purposes for public concern [28]. The integrated system helps the stable construction of social capital

through the network created by the integrated ICT platform[29-30]. The construction of a support organization is expected to provide theoretical implications for constructing an ecosystem of leisure and tourism information systems in this time of an emerging flexible society.

3.2. A Model for a Support Organization for Integrated ICT Platform and the Leisure and Tourism Information System

Both social economy and sharing economy are meaningful when establishing and managing a consumption system addressing public concerns, which enables both the pursuit of shared values as well as the creation of profits, which is the goal of a traditional business model. This model aims a reciprocal interaction to satisfy all the persons concerned by embracing those who have been isolated in a business ecosystem model and discouraging their fierce competition for only one resource. The construction of integrated ICT platform makes the reciprocal sustainable interaction [7] and [31].

Recently people are increasingly interested in purchasing a product in order to enhance quality of life, and this is especially true for leisure and tourism products. Unfortunately various constraints discourage all interested people from enjoying the intangible product[32-33]. However there should not be any exclusion or competition in regards to sharing natural tourism resources for public concern because they are a result of social exchange. Therefore an integrated ICT platform is required to provide market information about those intangible products to consumers and help create the structure of costs and profits through an informative role. It is necessary to organize a committee that consists of experts from the fields of leisure, tourism and communication. Also those who are experienced in the sharing economy are needed to support the resource information system.

A support organization of tourism resources based on integrated ICT platform enables stable establishment of sharing economy systems(see Figure 6). The model of an integrated ICT platform has two axes of system operation values ranging from market-oriented to society-oriented, and benefits ranging from individual to community, and there are also three categories of support for tourism. First, the integrated ICT platform for tourism resources helps build the educational system of tourism resources' service operation to aid in sustainable management. For example: ICT management education which facilitates tourism resource use. Second, the platform contributes to the development of a profit-making tourism business model. Different resourcing systems can be established and institutional support can be provided in the market economy using information technology and cyberspace, and it aids the market making continued profits [34]. Third, the platform helps press ahead with a variety of social integration businesses. Fair trade of tourism resources with the goal of social justice, such as fair travel or tourism product certification system to engender trust, can contribute to sustainable distribution of profits [34].

Through networking among different role takers, it requires an expert committee that consists of professionals from tourism marketing, ICT, and sharing economy sectors to govern the organization and operate the system [3] and [35]. Tourism experts deliver information on tourism resources and the supply of products, ICT experts implement information education for effective operation of the committee, and experts in sharing economy supervise the overlap of information operations and social values. Tourism experts and experts in sharing economy must gather various opinions to support the stable settlement of the system, while ICT experts and experts in sharing economy need to gather various opinions to help the stable operation of the system.

The system cannot be operated by only one sector of a society, but rather through trust and reciprocal relationships between suppliers and consumers, as well as an effective structure of profit and cost for the system. It requires governance by experts of tourism, ICT, and sharing economy for its moral operating system [3] and [34-35].

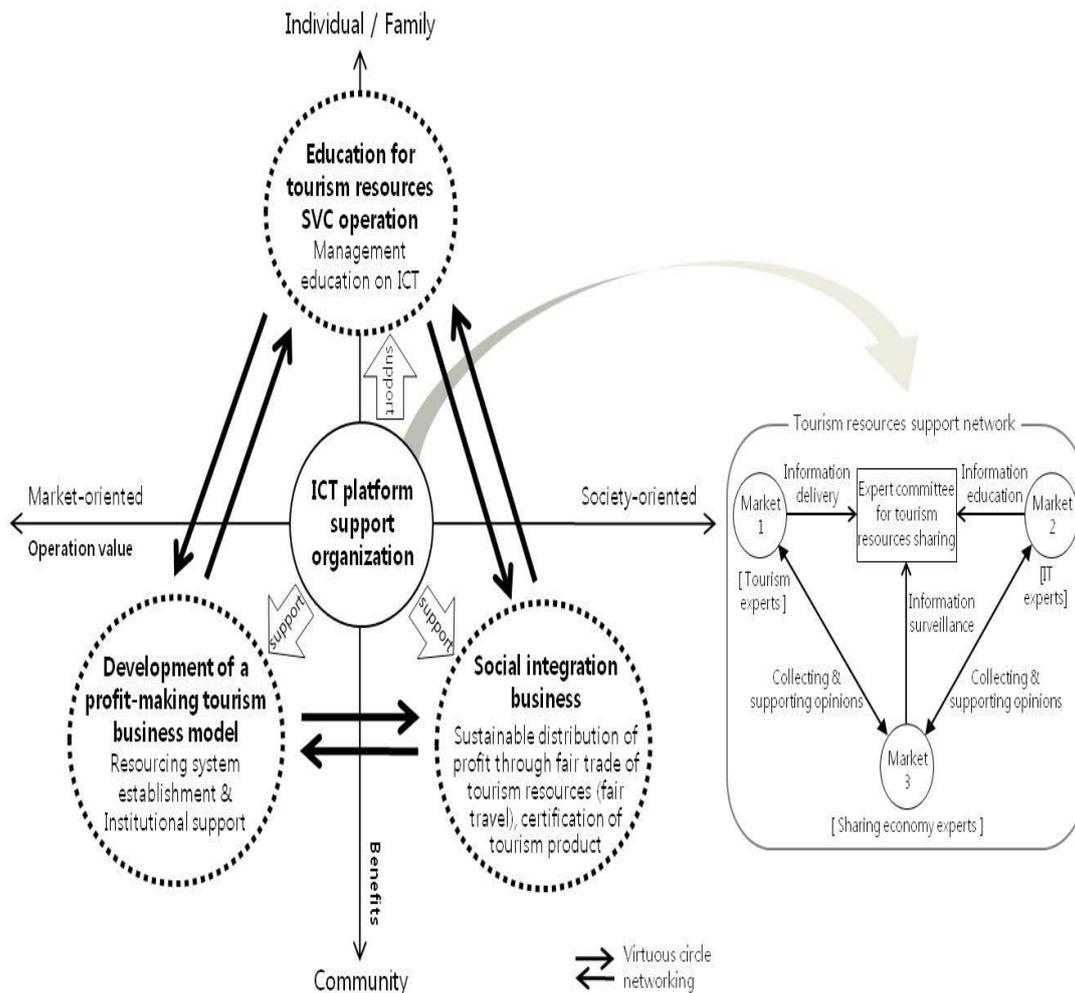


Figure 6. A Model of Sharing Economy System for Tourism Resources Based on ICT Platform

4. Conclusions

4.1. Result & Discussion

The leisure and tourism information system has become stable, based on social capital in a flexible society [36]. This has been established through ICT. The integrated ICT platform aids the stable settlement of the systems of both social economy and sharing economy as new alternative economic systems. Acting as a node in network business, it connects suppliers of leisure and tourism resources with consumers based on market information about what they intend to use, while dealing effectively with the calculation of costs and profits. Suppliers of leisure and tourism products work with consumers to establish a network, following the principle of public reciprocity based on trust and security. The integrated ICT platform enables users to share information they want through open communication during the construction of contents [37-38].

In the process of building a database, suppliers of leisure and tourism products and consumers are involved in two-way communication. Most importantly, the value of public concern implied in tourism resources becomes an important tool for the stable settlement of a new business in a system such as social economy or sharing economy.

An integrated ICT platform requires the stable settlement of a system and the stable operation of systems in addition to human networking. It is necessary to build a new

exchange system that is different from the existing market economy systems for effective sharing of tourism resources; such as viewing natural and cultural environments as public goods. Sharing economy requires a new exchange system of benefits including reciprocal relationships and relationships which have been neglected in highly competitive markets[39-40].

Generally an exchange system in a market economy makes suppliers of resources to have the advantage over service delivery sections, leading to unequal power relationships. However sharing economy systems enables ICT, an intermediary of the exchange relationship, to play the role of a platform in supplying resources and developing the possibility of different resource choices. Specifically ICT helps not only supply necessary resources, but also distribute unused resources, realizing social justice for the exchange relationship. Also support of unused tourism resources as public goods can be said to be the exchange of social value for public concern, and it is ICT that acts as an important means and intermediary to enable the exchange [41].

Integrated ICT platforms support values of participation, sharing, and openness of Web 2.0 and it is related to value of tourism resources based on public concerns. As suppliers and consumers can share information on open tourism resources and participate together in the exchange for social value through ICT, they do not have to compete for Tourism matters [34-41].

Competition in the market has many negative side-effects such as the monopoly of bigger companies, whereas ICT has various technological and cultural implications in regards to social economies and shared economies that have come into prominence in recent years. Tourism resource support systems based on ICT enables the realization of different social values and delivery of tailored information to consumers, increasing the utility of the market. The effective system of profit and costs using leisure and tourism product information enables the establishment of social capital based on a stable reciprocal relationship, and effective benefits for a flexible society.

4.2. Study Limitations and Future Research

This study has some limitations which have to be pointed out. First, the study is a theoretical article of the integrated ICT platform for the exchange system of tourism resources in sharing economy, but further studies are expected to explore cases of tourism businesses based on this model. Second, the study fails to discuss the practical operation methods of an integrated ICT platform model, and the author will address that matter in a future study. Despite some limitations this study is valuable in discovering new social values of an ICT platform in an exchange system of tourism resources. Therefore it is meaningful to explore how businesses use the integrated ICT platform to match social values in leisure and tourism information systems, and how new core competences for it will be improved for further information economics system studies.

References

- [1] P. Anderson, "All That Glitters Is Not Gold? Web 2.0 and the Librarian", *Journal of Librarianship and Information Science*, vol. 39, no. 4, (2007), pp. 195-198.
- [2] P. Bleicher, "Web 2.0 Revolution: Power of the People", *Applied Clinical Trials*, vol. 15, no. 8, (2006), pp. 34-36.
- [3] I. Kushchu and C. Borucki, "Impact of Mobile Technologies on Government", *Mobile Government Lab (mGovLab)*, Retrieved from <http://www.mgovlab.org>, (2004).
- [4] Y. Benkler, "From Consumer to Users: Shifting the Deeper Structures of Regulation toward Sustainable Commons and User Access", *Federal Communications Law Journal*, vol. 52, no. 3, (2000), pp. 561-579.
- [5] J. Defourny, "From Third Sector to Social Enterprise, in C. Borzaga and J. Defourny (eds.), *The Emergence of Social Enterprise*", Routledge, (2001), pp. 1-18.
- [6] L. Lessig, "Remix: Making Art and Commerce Thrive in the Hybrid Economy", The Penguin Press, New York, (2008).
- [7] Berkman Center for Internet & Society, "Road Map for Open ICT Ecosystem", Harvard Law School, <http://cyber.law.harvard.edu/epolicy/home>, (2005).

- [8] R. Belk, "Sharing versus Pseudo-sharing in Web 2.0", *The Anthropologist*, vol. 18, no. 1, (2014), pp. 7-23.
- [9] H. S. Kim, "Design of Tour Guide System using Bluetooth 4.0 and WiFi Sensor Technology", *Journal of the Korea Academia-Industrial cooperation Society*, vol. 16, no. 10, (2015), pp. 6888-6894.
- [10] D. Jing and S. J. Lee, "A Study on the Effect of Mobile Tourism Information Service Features on Perceived Value, Satisfaction and Behavioral Intentions", *Proceedings of the Korea Academia-Industrial cooperation Society*, (2014) May.
- [11] M. Auteri, "The Entrepreneurial Establishment of a Nonprofit Organization", *Public Organization Review*, vol. 3, no.2, (2003), pp. 171-189.
- [12] S. Balasubramanian and V. Mahajan, "The Economic Leverage of the Virtual Community", *International Journal of Electronic Commerce*, vol.5, no.3, (2001), pp.103-138.
- [13] D. Gambetta, "Trust: Marketing and Breaking Cooperative Relations", Basil Blackwell, Oxford, (1988).
- [14] D. Buhalis, "Strategic Use of Information Technologies in the Tourism Industry", *Tourism Management*, vol. 19, no. 5. (1998), pp.409-421.
- [15] B. Friedman, P. H. Kahn and D. C. Howe, "Trust Online", *Communication of the ACM*, vol. 43, no. 12, (2000), pp.34-40.
- [16] A. Poon, "Tourism, Technology and Competitive Strategies", CAB International, Oxford, (1993).
- [17] R. Scheyvens, "Ecotourism and the Empowerment of Local Communities", *Tourism Management*, vol. 20, (1999), pp. 245-249.
- [18] D. Buhalis and P. O'Connor, "Information Communication Technology Revolutionizing Tourism", *Tourism Recreation Research*, vol. 30, no.3, (2005), pp.7-16.
- [19] R. Neelamiegham and D. Jain, "Consumer Choice Process for Experiencing Goods: An Econometric Model and Analysis", *Journal of Marketing Research*, vol. 36, no. 3, (1999), pp. 373-386.
- [20] A. Philippe, "Sharing: Culture and the Economy in the Internet Age", Amsterdam University Press, Amsterdam, (2012).
- [21] M. Castells, "The Informational Economy and the New International Division of Labor, in M. Carnoy, M. Castells, S. S. Cohen and F. H. Cardoso (eds.), *The New Global Economy in the Informational Age: Reflections on Our changing World*", The Penn State University Press, Pennsylvania, (1993).
- [22] P. Ely and A. Sama, "The Mixed Economy of Welfare, in B. Munday and P. Ely (eds.), *Social Care in Europe*", Harvester Wheatsheaf, London, (1996), pp. 96-125.
- [23] A. Giddens, "The Third Way and Its Critics", Polity Press, Oxford, (2000).
- [24] H. Westlund, "Form or Contents? On the Concept of Social Economy", *International Journal of Social Economics*, vol. 30, no. 11, (2003), pp. 1192-1206.
- [25] W. Powell, "Neither Marketing nor Hierarchy: Network Forms of Organization, in G. Thompson, J. Frances, R. Levacic, and J. Mitchell (eds.), *Markets, Hierarchies and Networks: The Organization of Social Life*", Sage, London, (1991), pp. 265-276.
- [26] G. Goggin and C. Spurgeon, "Premium Rate Culture: The New Business of Mobile Interactivity", *New Media & Society*, vol. 9, no.5, (2007), pp. 753-770.
- [27] J. Owyang, "The Collaborative Economy: Products, Services and Market Relationships have changed as Sharing Startups Impact Business Models", *A Market Definition Report*, Altimeter, <https://www.slideshare.net/Altimeter/the-collaborative-economy>, (2013).
- [28] V. A. Pestoff, "Beyond the Market and State: Social Enterprises and Civil Democracy in a Welfare Society", Ashgate, UK, (1998).
- [29] N. Lin, "Social Capital: A Theory of Social Structure and Action", Cambridge University Press, Cambridge, (2001).
- [30] L. J. O'Toole, "Treating Networks Seriously: Practical and Research-Based Agenda in Public Administration", *Public Administration Review*, vol. 57, no.1, (1997), pp. 45-52.
- [31] J. Cullen, "Professionalizing Knowledge Sharing and Communications: Changing Role for a Changing Profession", *Business Information Review*, vol. 25, no. 1, (2008), pp. 53-57.
- [32] D. W. Crawford and G. Godbey, "Reconceptualizing Barriers to Family Leisure", *Leisure Sciences*, vol. 9, no.2, (1987), pp. 119-127.
- [33] D. W. Crawford, E. L. Jackson and G. Godbey, "A Hierarchical Model of Leisure Constraints", *Leisure Sciences*, vol. 13, no. 4, (1991), pp. 309-320.
- [34] K. Finley, "Trust in the Sharing Economy: An Exploratory Study", Centre for Cultural Policy Studies, The University of Warwick, UK, (2013).
- [35] P. A. Albinsson and B. Y. Perera, "Alternative Marketplaces in the 21st Century: Building Community through Sharing Events", *Journal of Consumer Behavior*, vol. 11, no. 4, (2012), pp. 303-315.
- [36] R. Putnam, "The Prosperous Community: Social Capital and Public Life", *The American Prospect*, vol. 13, (1993), pp. 35-42.
- [37] Y. J. Mun and J. H. Lee, "The Effects of Continued Usage Intention of Rural Tourism Social Media", *Journal of the Korea Academia-Industrial cooperation Society*, vol. 12, no. 11, (2011), pp. 4812-4818.
- [38] J. W. Park, "IT-based Local Festival & City Satisfaction Improvement plan", *Proceedings of the Korea Academia-Industrial cooperation Society*, (2014) May.
- [39] L. N. K. Leonard, K. Jones, "Consumer-to-Consumer e-Commerce Research in Information Systems Journals", *Journal of Internet Commerce*, vol. 9, no. 3, (2010), pp. 186-207.

- [40] R. Belk, "Sharing", *Journal of Consumer Research*, vol. 36, no.5, (2010), pp. 715–734.
[41] N. A. John, "Sharing, Collaborative Consumption and Web 2.0", *MEDIA@LSE Electronic Working Paper*, (2013).

Authors



Woong Ki Min, has received two doctorates, one in sociology at Korea University in South Korea in 2007 and the other one in tourism at Hanyang University in South Korea in 2013. He is an assistant professor of the Department of Liberal Education at Mokwon University in South Korea, and recently has been working on cultural content systems in leisure and tourism using information and communications technology; with an interest in culture, consumer behavior, and social psychology.



Jin Hee Ku, received the M.S. degree and Ph.D. degree in computer science Education & Industrial Education from ChungNam University, Korea in 2001 and 2010, respectively. Currently, She is an assistant professor of the Dept of Liberal Education, Mokwon University. Her main research interests include Smart Learning and Context-Aware and Learning Management System.

