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Modification of Service Content for Evolution of Service Platform Ecosystems

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ABSTRACT

In platform ecosystems, the proper modification of goods provided could promote innovation and fulfill the need for diversity among consumers. However, most platforms in the service industry currently serve merely as intermediaries for existing services. This study aims to clarify how the function of a platform, which brings a modification of the content of services, contributes to the development of the platform ecosystem in service industries. The results of an agent-based simulation that imitates platform-based markets of a service industry reveal that the facilitation of changing the content of services could have negative effects for the platform ecosystem if there are no supportive functions. The authors demonstrate that two supportive platform functions contribute to successful modifications in service content the facilitation of customer involvement improves the sustainability of the ecosystem by increasing profits of platform users, and the support for capturing latent needs extends to the platform-based market.

KEYWORDS

Agent-Based Simulation, Customer Involvement, Labour-Intensive Industry, New Market Development, Platform Ecosystem, Service Innovation, Sustainability, Two-Sided Market

INTRODUCTION

In recent years, various business platforms have emerged. Specifically, this study focuses on service intermediation platforms (e.g., accommodation intermediating platforms such as Expedia and Hotels.com, sightseeing platforms like TripAdvisor, and restaurant booking platforms like Tabelog). Although there are various service intermediation platforms, these only do "intermediating." On the other hand, researchers studying platform-based markets in information technology industries suggest the significance of the role of platforms for the development of goods (products and services) and for the emergence of innovation in platform ecosystems. Although there is an accumulation of implications from previous research, platforms in service industries do not consider them. In platform ecosystems, such development and innovation can occur through the modification of the content of goods that utilize platform functions (or technologies). The authors believe that previous studies did not focus on the fact that service intermediating platforms provide functions to facilitate changing service contents provided by outside service providers. Thus, this study has the following research question:

Which platform functions can support successful changing of service content in platform ecosystems?

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In the following subsection, the authors review the literature on platform ecosystems and describe the research purpose.

Previous Literature on Platform Ecosystems and Research Purpose

Previous studies in the field of technology and innovation management have investigated their focal markets based on the concept of ecosystems (e.g., Adner, 2017; Jacobides, Cennamo, & Gawer 2018; Inoue, 2019). In particular, researchers have established the concept of a "platform ecosystem" (Gawer, 2014; Thomas, Autio, & Gann, 2014), which is also known as a platform-based business ecosystem and is regarded as one type of business ecosystem. The platform ecosystem consists of platforms as a system or architecture with a collection of supporting complementary assets (Gawer & Cusumano, 2014; Thomas et al., 2014). Among complementary asset providers, "complementors" produce complementary goods (products or services) for the platform (Boudreau & Jeppesen, 2015). A platform ecosystem can foster unlimited innovation through the participation of various organizations that hold several management resources as complementors (Gawer, 2014). A platform ecosystem also leads consumers with various needs to adopt the use of the platform (Ceccagnoli, Forman, Huang, & Wu, 2012).

Research on the platform ecosystem is mainly conducted for information technology (IT); platforms correspond to hardware or IT systems, and complementary goods correspond to software or applications (e.g., Inoue, 2019). Platform-based markets are not limited to the IT industry (McIntyre & Srinivasan, 2017). Nevertheless, most platforms in the service industry currently serve merely as intermediaries for existing services. In addition, the focus on platforms in service markets has only been on the intermediary function and its pricing (platform fee setting) (Clemons, Hann, & Hitt, 2002; Inoue, Takenaka, & Kurumatani, 2019; Kung & Zhong, 2017; Wang, He, Yang, & Gao, 2016; Zha, Zhang, Yue, & Hua, 2015). Thus, the viewpoint for modification of the service content with the platform has not been explored. In addition, most current service intermediary platforms, such as accommodation platforms, have not implemented this platform function.

Therefore, the purpose of this study is to clarify how the platform function of changing service content contributes to the development of the platform ecosystem. The authors believe implications from this study can contribute to helping future service intermediating platforms successfully develop service innovations in the ecosystem.

Research Approaches

This study focuses on the modification of service content in service intermediary platform ecosystems. The modification of such content by the platform function is not currently a widespread phenomenon. Therefore, this study conducts agent-based simulation experiments and constructs virtual service intermediating platform-based markets by logically and simply designing behavior and decision making of service providers and consumers. Based on these virtual markets, the authors tested platform functions that may be beneficial for the successful modification of service content.

MODIFICATION OF SERVICE CONTENT

Definition of Services and Service Modification

For the purposes of this study, the term "service" refers to the service of a labor-intensive industry. Several platform studies target "services" in a broader sense, but those explored herein need to be distinguished from similar usages, as described below. IT is another type of service. In some studies, the term "service" is used to express such factors as software, applications, and web services (e.g., Barrett, Davidson, Prabhu, & Vargo, 2015). Another type of service is the servitization of the platform (Suarez & Cusumano, 2009; Cenamor, Sjödin, & Parida, 2017). Servitization means that instead of pure product sales, products and services are integrated and jointly provided (Cenamor et al., 2017).