

# Business Ecosystem Management and Editorial on the Special Issue

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## 1. A Framework of Business Ecosystem Management

### 1.1. Micro-Level Approach to Business Ecosystem

Regarding business ecosystem management, it is important to approach the ecosystem beyond the macro-level and through the micro-level. Developing a town is often compared to the macro-level business ecosystem management approach. On the other hand, taking care of one's own home along with the town can be interpreted as the approach taken in the micro-level business ecosystem management. The macro-level approach regards the business ecosystem as an environment assuming the commons perspective. As the resource is limited, the commons perspective aims to benefit all participants at the cost of blurring the distinction between yours and mine. Therefore, participants tend to avoid taking responsibilities in actively managing while expecting full benefits from the commons. However, the micro-level approach on the business ecosystem assumes the ecosystem as the managerial objective. This approach can be compared to that of the privates. The present study focusses on how to manage the business ecosystem in the micro-level perspective.

Existing studies examine the entrepreneurship ecosystem, innovation ecosystem, ICT (Information and Communication Technology) ecosystem, IoT (Internet of Things) ecosystem, AI (Artificial Intelligence) ecosystem, mobility ecosystem, blockchain ecosystem and tourism ecosystem [1–5]. These ecosystems are the industrial ecosystems under socio-economic systems. However, the business ecosystems exist in every industry, not in any particular industry as most of the business involve a diverse range of industries. The business ecosystem tends to penetrate across other industries and boundaries. Studies such as Joo and Marakhimov [6] and Joo et al. [7] organized the genealogy of existing studies on the business ecosystem.

To examine the autonomous vehicle (AV) ecosystem, which converges the automobile and information technology (IT) industries, requires a new approach other than the existing automobile ecosystem perspective. Thus, it is ineffective to identify a shared purpose within the ecosystem based on what the industry aims for. In such business ecosystem, actors should aim to create a shared purpose based on common understandings among the actors.

Hyundai Motors is promoting AV business as one of its own strategic business units, which becomes a part of the business ecosystem. Other automobile brands such as Ford, GM, and Toyota are also promoting AV business. As many brands enter the AV business, an AV ecosystem arises with the shared commonalities of the AV businesses. All the automobile brands, IT providers, consumers, suppliers, regulatory authorities, associations, labor unions, and institutes take their role in the ecosystem as actors. Hyundai, although it may play an integral part, is still an actor within the ecosystem. In this respect, a business ecosystem should be considered as the business environment rather than a managerial objective. This is what the macro approach is. An AV business ecosystem and Hyundai's



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AV business ecosystem are in a symbiotic relationship, such as the object and instance. From the instance's perspective, the business ecosystem becomes a managerial objective.

The other perspective of the business ecosystem is to examine the concept in respect to keystones or platform operators [8–10]. The actors of the business ecosystem behave as keystones, dominators, and niche players. In the existing perspectives, the AV ecosystem is comparable to the industry or market. Therefore, the impacts to the ecosystem as actors, not keystones or dominators, were limited. The business ecosystem for the actors, other than the keystone, is nothing but the business environment that they need to adapt to. This is because the platform providers, keystones, and dominators make rules and run the system. Many studies analyze the case of the MS, Google, Apple, Amazon, and Facebook ecosystem mostly from the perspective of keystones [11].

The necessity emerges on the new approach to manage the business ecosystem solidly beyond the business ecosystem of keystone or industry. As Peter Drucker, a social ecologist, said “the best way to predict the future is to create it”; continuously creating and innovating the future of their own business is essential to business managers. The managers perceiving the business ecosystem as a managerial objective, not a business environment, could attain sustainable management.

It is crucial to managers to depart from perceiving the business ecosystem as a given environment, community, and structure for management and need to regard it as an object to manage. There are three requirements to be considered to manage the business ecosystem. First of all, the managers have to identify who the actors are. Secondly, they must examine the relationship between the actors. Finally, they must make which shared purpose the actors have clear. The shared purpose can be achieved when the manager pursues balance between actors. The traditional management, such as shareholder-oriented or customer-oriented management, could not adjust the dynamic balance in business ecosystem. This is because the shareholders and customers are also both actors and stakeholders involved in the business ecosystem, and it is not simple to prioritize between stakeholders.

For the first and second process, it is crucial to analyze which platform portfolio the business ecosystem is based on. The corporates usually use a diverse platform to organize their portfolio. Google initiated their business from search engine platform, for example and for now, they make profits from a video platform, Youtube, and an application market (Google play) in the Android operating system. Kakao and Naver also manage their own platform portfolio in their business ecosystem. The business ecosystem of KaKao consists of a search engine, community, mobility, and finance platform portfolio.

The case of Google's In-App Purchase policy in South Korea is a case that notices the importance of balance between actors in business ecosystem management. The In-App Purchase is a policy for every application being sold in Apple's Appstore or Google's Play to use a purchase system offered by the app market for payment and fee. Google runs a business of a search engine, Cloud, and Google Play app-market platform and each platform creates each ecosystem. The main actors of the Google Play platform, for instance, are the platform provider (Google) and platform users (app developers, publishers, and customers) and other actors are partners (mobile carriers and smartphone manufacturers), associations, the press, and regulatory authorities.

Among the smartphone users who downloaded applications from Apple Appstore and Google Play, iPhone users paid a 30% more expensive price for applications other than games than Android users due to their In-App Purchase policy. Apple has charged 15–30% of the fee for pay applications, while Google has not. Google also announced that they would charge 15–30% of the fee under In-App Purchases in 2020. Google Android achieved a 65% market share of smartphones in South Korea. Since Google's announcement of their In-App Purchase policy, the actors of the business ecosystem, the application developers and related associations have raised the issue through the media.

The situation projects the conflicts of interest between actors involved in the platform business ecosystem. The most strained relationship is the one between the platform provider and application developers. It is not simple for developers to bring influence

as long as Google keeps being involved in this issue as a platform provider. This is because the platform providers determine the fee. The application developers joined such associations as the Korea Webtoon Industry Association, Korea Novel Industry Association, Korea Cartoonist Association, Webtoon Association, Korea Webtoon Artist Association, The Comic & Webtoon Society of Korea, Korea Story Writers Association, and Korea Internet Corporations Association. The developers, one of the main actors in the platform business ecosystem, had influence on application users and regulatory authorities through these eight associations and media and informed that the fee charged by the platform consequentially increase consumer expenses. Then, the associations and media exerted pressure on regulatory authorities on the strength of consumers' opinions, and finally brought developers, consumers, associations, media, and regulatory authorities' power to exert their influence on congress.

As a result, a Telecommunications Business Act, the so-called In-App Purchase enforcement prohibition, was amended. As such, it is easy to become influential in these days of an open and transparent socio-economic ecosystem in accordance with the shared interest between actors, and the Act made a case for which the actors in the business ecosystem adjusted the ecosystem in more favorable direction. Under the business ecosystem, it is impossible for keystones or dominators to possess or exploit the created values. This case could bring strategical change to Google to derive balance and solve conflicts between actors in app market ecosystem, which thus enables a sustainable business ecosystem and reinforces competitiveness.

Given the case of an app market platform keystone, Google's business ecosystem management, it becomes evident how platform providers should manage their business ecosystem. Firstly, the managers can take a strategy of bringing influence as an actor on keystones' decision making. In the case of Google, the joined actors of shared interest can be influential, while it is difficult to project opinions as a sole platform user. Secondly, there is a multihoming strategy, which means platform users and application developers can utilize multiple platforms without regulations [12]. The regulatory authorities in the platform business ecosystem prohibit the platform providers from influencing users to use different platforms.

### *1.2. Importance of Business Ecosystem Management*

The importance of business ecosystem management is as follows:

First of all, ESG (Environment, Society, and Governance) is under regulation. ESG management is essential for all corporates. The correlation between sustainable management, sustainability report and competitiveness are not clearly examined, while ESG management directly influences investment and risk of corporates. The non-financial standard of ESG can be found with financial-standard announcements. Additionally, ESG now should be essentially considered for pension and impact investment. ESG clearly identifies the corporate responsibility for environment and society. The corporates should construct transparent and reliable internal corporate governance and respond to agent issues. Moreover, the ESG standard also partially reflects the transparency of external corporate governance and dynamic balance between actors in a business ecosystem. Therefore, ESG management is a subset of business ecosystem management. A corporate that substantially manages the business ecosystem has no choice but to have a positive ESG management evaluation.

Secondly, as ethical and conscious consumers increase, CCM (Conscious Consumer Market) is spreading [13]. The rise of ethical consumers and CCMs means that a healthy business ecosystem affects corporate reputation and product purchases of consumers.

Third, the corporates have positive impacts on preventing and coping with black swans through business ecosystem management. The business ecosystem plays a decisive role in the event of catastrophic situations such as black swans. The Sewol ferry disaster in South Korea was caused by Cheonghaejin Shipping taking on management where the balance between actors in the business ecosystem was already deteriorated [7,14].

## 2. Commentary on the Special Issue

The Special Issue “Sustainable Management and Business Ecosystems” focused on, but was not limited to, the following topics: sustainability in business; sustainable management; business ecosystem strategy; sustainable business ecosystems in platform or gig economy; sustainable business ecosystems in tourism, entrepreneurial start-ups, innovation, or ICTs such as blockchain, IoT, and big data; business ecosystems health and its measurement; sustainable business ecosystems through corporate social responsibility, social capital, or customer participation; sustainable management through collaboration and co-creation; business ecosystem assessment in different international markets; theoretical evolution of internationalization in the international business ecosystem.

A total of eight articles were published the Special Issue:

- Kim and Kim: An integrated analysis of value-based adoption model and information systems success model for PropTech service platform. The paper deals with the relationship between emerging information technologies and real estate ecosystems. The study suggests a sustainable business model based on a service platform in the area of real estate and analyzes two actors of consumers and service providers to build a sustainable ecosystem. The paper conducted an empirical study regarding property technology service platforms in South Korea.
- Bang, Lee, and Shin: Partner Selection Strategies in Global Business Ecosystems: Country Images of the Keystone Company and Partner Companies on the Brand Quality Perception. The paper examines the impacts of country images of keystone companies and assembly companies on brand quality perception. The study provides a comparative analysis on the partner selection of keystone companies between developed countries and developing countries by conducting a survey on consumer perception of Hyundai Motors in South Korea having partnerships with India and the USA as assembly companies.
- Kim and Song: What Determines Consumer Attitude toward Green Credit Card Services? A Moderated Mediation Approach. They studied determinants of consumer attitude toward green credit card services in the credit card business ecosystems. The findings give an important insight into ESG management of credit card companies.
- Kim, Lee, Lee, and Lee: Developing Sustainable Competitive Strategies in the Beauty Service Industry: A SWOT-AHP Approach. The study proposes a sophisticated SWOT matrix of the beauty service industry incorporated ideas of beauty service industry experts in South Korea by using Analytic Hierarchy Process (AHP). The paper suggests a guideline for strategical development of the industry and companies.
- Jung and Shin: Assessment of University Students on Online Remote Learning during COVID-19 Pandemic in Korea: An Empirical Study. The paper examines the challenges in the field of education under the COVID-19 pandemic situation. The study conducted a survey of university students experiencing online remote learning and analyzed the relationship between online remote learning quality, flow, and learner satisfaction.
- Shin, Jung, and Rha: Study on Business Ecosystem Research Trend Using Network Text Analysis. The paper collected data of research papers containing business ecosystem as a keyword based on the Scopus database and analyzed the research trend by using network text analysis. The study enables a comprehensive understanding of business ecosystem and suggests expandable topics for further studies.
- Li, Cheng, and Xu: Time-Based Corporate-Social-Responsibility Evaluation Model Taking Chinese Listed Forestry Companies as an Example. The paper proposes a time-based entropy method regarding the performance evaluation of Corporate Social Responsibility (CSR). The study suggests the forestry companies as examples of long-term CSR performance considering both the static and dynamic aspects of company.
- Kang, M. Y.: Sustainable Profit versus Unsustainable Growth: Are Venture Capital Investments and Governmental Support Medicines or Poisons? This paper dealt with a startup ecosystem by analyzing three actors of startup entrepreneurs, venture capitals, and a government agency which is supporting startups. The authors empirically

analyzed the determinants of firm profitability of startups and their growth by using data from South Korea.

- Lee, Y.: The Impact of Corporate Governance Mechanisms on the Commitment of Managers in an IPO Setting: Evidence from Korean Small and Venture Firms. This paper investigates the impact of corporate governance mechanisms on the length of the lockdown period. Overall, this paper suggests that, when small and venture companies go public, managers may use the IPO lockup as a commitment device that complements corporate governance mechanisms in reducing investor concern about the moral hazard problem of managers.

### 3. Conclusions

Since Moore [15] introduced the business ecosystems concept, many studies have been conducted. He defined a business ecosystem as “a mutually dependent system interconnected by a loose foundation of various ecosystem members including customers, suppliers, partners, and other stakeholders such as financial service firms, trade associations, standard bodies, labor unions, governmental and quasi-governmental institutions”. Moore [16,17] used the business ecosystem to describe an economic community in which interdependent organizations and individuals organically form a business world.

The traditional strategic management emphasized competition and perceived the business ecosystem as a business environment rather than a management object due to the influence of the neoliberal economy. Meanwhile, the business ecosystem strategy emphasizes collaboration and co-evolution between actors. It is a macro approach where actors who are not keystone or platform providers look at the business ecosystem as a business environment.

Any company must manage its own ecosystem beyond keystone or platform providers. A key element that enables sustainable management is a healthy business ecosystem. The business ecosystem is not only the foundation of sustainable management, but also directly and indirectly influences corporate performance and sustainable competitiveness [7,17]. Therefore, a micro approach to the business ecosystem is necessary. Most of the papers published in this Special Issue are related to the micro-approach of the business ecosystem. As ESG management becomes essential and ethical and conscious consumer markets proliferate, business managers should not overlook business ecosystem management. In addition, business ecosystem management is a strategic approach to prevent and promptly respond to black swans that may occur in unexpected situations [7,17].

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