

Research on the Evolution Path of Business Ecosystem of Platform Enterprises —— A Case Study of Alibaba

Qingqing Wang* and Wensong Zhang

School of Economics and Management, Beijing Jiaotong University, China, 100044

**Corresponding author: Email: qingqingwang.2009@163.com*

ABSTRACT

With the rise and development of the Internet in China, the ecosystem has presented a new format in the field of e-commerce. Establishing or participating in the business ecosystem has gradually become an important strategic direction for more and more enterprises [1]. With the aim to find out the specific revolution path of business ecosystem to offer guidance and reference to enterprises who want to establish or participate in business ecosystem, we conduct this research. Based on business ecosystem theory, this paper will take Alibaba group as the sample to analyze the evolution path of its business ecosystem. The research conclusion shows that the business ecosystem is mainly composed of producer population, consumer population, decomposer population and market environment. Under the lead of core enterprises, all members are interrelated, interdependent, competitive and mutually restricted in the business ecosystem. In order to promote the healthy growth of the whole ecosystem and win in the competition among homogeneous ecosystems, enterprises should view their own development from the perspective of business ecosystem, and choose appropriate development strategies based on their ecological position.

Keywords: *Alibaba, Business ecosystems, Evolution.*

1. INTRODUCTION

In 1993, Moore [1] first proposed the idea of “Business Ecosystems”, and subsequently the related research on business ecosystem is emerging gradually. In complex and changing market competition environment, the symbiotic cooperation between enterprises in the business ecosystem is particularly important. Business ecosystem is the system that can optimize and innovate enterprise resources, and promote the prosperity and development of enterprises within the system, which can also help members in it to establish the symbiosis and cooperation relationship. With the industrial reform, the rapid change of consumer market and the upgrading of demand, the competitive advantages of enterprises cannot be established only through internal resources, but also through the effective use of external resources [3]. Under this circumstance, business ecosystems are becoming more and more prevalent. This paper will focus on the business ecosystem of Alibaba Group by identifying the constituent elements and understanding the different development stages of it, so as to provide reference and

guidance for many enterprises to construct and develop their business ecosystem.

2. THEORETICAL BACKGROUND

2.1. Concept of Platform Enterprise

Cennamo and Santalo^[4] believe platform enterprises are platform providers and operators in the platform ecosystem. They are responsible for formulating platform trading rules, maintaining platform trading order, and actively inviting complementary suppliers to participate in the platform. Therefore, they become the builder and leader of the platform ecosystem, and complete transactions and interactions on the platform. Li Lei [5] holds the view that a platform enterprise refers to an organization that connects two or more groups who can make profits by stimulating networks effects. To become a platform enterprise, the following conditions are generally required: (1) the industry where the enterprise is located has the foundation of building the platform. Generally speaking, it is easier to build platforms in industries that are closely connected with

the Internet and can disseminate information rapidly [6]. For example, e-commerce, Internet software, finance, media industry. (2) Enterprises have great influence and reputation in the ecosystem, and are generally leading enterprises in the whole industry. For platform enterprises need to gather resources and stakeholders to provide value for users, which is difficult for non-leading enterprises to achieve [7]. (3) In addition to sufficient integration capabilities, enterprises also need to have strong system integration capabilities and platform dynamic control capabilities to maintain the daily operation of the platform ecosystem. (4) A large amount of basic users. It is difficult to produce network effect without a certain scale of basic users [8].

2.2. Concept of Ecosystem

The concept of ecosystem was put forward by British ecologist A. G. Tansley [9] in 1935. He found that an ecosystem was a unified whole formed by various biological individuals and biological communities, and their inorganic environment through energy flow and circulation within a certain space and time. The biological population in the ecosystem can be divided into producers, decomposers and consumers, among which the producers provide food resources for all other hetero-trophic organisms on the earth by making use of simple inorganic substances. Producers are the conduit between the inorganic environment and the biotic community; Decomposers decompose complex organic matter into simple inorganic matter, and finally return to the environment in the form of inorganic matter, which is the link between biomes and inorganic environment. The consumers rely on the organic matter produced by the producers, and the energy in the ecosystem is transferred through predator-parasitism relationship. The environment of an ecosystem is an abiotic part of an ecosystem, including sunlight, water, inorganic salts, air, organic matter, rocks and all the other basic substances that make up the ecosystem. Biological population and biological environment are closely linked and interact with each other, which makes the ecosystem an organic whole with specific functions.

2.3. Concept of Business Ecosystem

Along with further deep understanding of ecological system and social organization structure, some scholars found that the composition and operation of human society were very similar to the ecological system, so the concept of ecological system was gradually introduced into the field of social science. Moore (1993)[1], based on the perspective of enterprise ecology proposed by Hannan and Freeman[10], further introduced the concept of "Business ecosystems" and defined it as "economic integration based on the interaction between organizations and individuals, which includes a large number of interdependent participants". After Moore, the definition of business ecosystem is mainly based on network perspective and ecological perspective. The former holds that enterprise ecosystem is a dynamic network composed of connected enterprises. The latter holds that business ecosystem is an economic community composed of many enterprises with symbiotic relationship. On the basis of many definitions of business ecosystem given by scholars, in this paper, we define business ecosystem as a system similar to natural ecosystem, in which all members are interrelated, interdependent, competitive and mutually restricted, under the leadership of core enterprises. The business ecosystem of an enterprise consists of producer population, consumer population, decomposer population and market environment.

2.4. The Construction of Business Ecosystem Model of Platform Enterprise

Based on the natural ecosystem theory, an ecosystem consists of biological communities and the inorganic environment. The business ecosystem of a platform enterprise can also be divided into two parts: the biological community composed of producer population, consumer population and decomposer population, and the inorganic environment including the market environment. Biological communities and the inorganic environment in the business ecosystem of the platform enterprise form a complex coevolutionary system through continuous interaction, restriction and codependence. **Figure 1** depicts the basic business ecosystem of a platform enterprise and its composition.

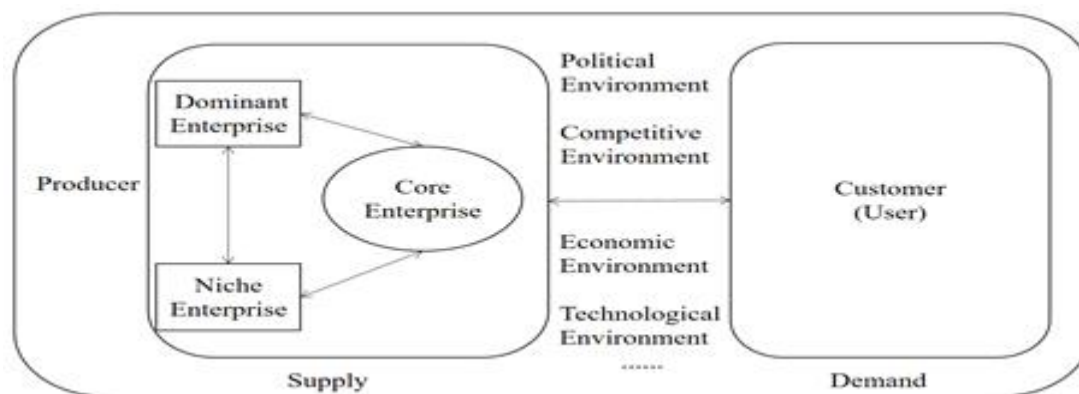


Figure 1 Basic business ecosystem of a platform enterprise and its composition

In the basic business ecosystem of a platform enterprise, the producer population is the enterprise, which is the main body to produce products and services. About the classification of enterprises in business ecosystem, different scholars have given different answers. According to the roles played in their respective business ecosystems, Zhong Gengshen [11] divided them into four categories which were the keystone, the dominator, the landlord, the niche. Considering the influence and resource capacity of producer population in the business ecosystem, Marco Iansiti [12], Roy Levien [13] classified them into key enterprises, dominant enterprises and niche players. Although scholars have different categorizations of enterprises in the business ecosystem, they all include core enterprises, dominant enterprises and niche enterprises. Core enterprises are crucial to maintain the stability and diversity of the entire business ecosystem. By setting up platforms, core enterprises can share resources, co-create values and share benefits with network members throughout the system. Dominant enterprises often have key niche in the business ecosystem and try to extract maximum value from the business ecosystem. Niche enterprises are the main body of the business ecosystem. In order to survive, they tend to be numerous, highly specialized and differentiated, focusing on narrow market segments. In addition, this article holds that there are parasitic enterprises in the business ecosystem, whose existence are premised on the existence of the enterprises it serves. The consumer group in business ecosystem is the user group, which has great influence on the construction and development of the business ecosystem. The number, type and distribution of enterprises must proceed from the needs of consumers by considering the income level, education level, consumption concept and consumption habit of them.

The market environment in business ecosystem is composed of competitive environment, political environment, legal environment, economic environment, technological environment, social and cultural environment and natural geographical environment. Competition environment includes internal competition

environment and external competition environment. Internal competition environment consist of internal enterprises and many sub-ecosystems, while external competition environment is formed by homogeneous business ecosystems. Political environment refers to the external political situation of the business ecosystem and the government support. Legal environment means the laws and regulations promulgated by national or local governments and the legal ideology of citizens involved in the business ecosystem. Economic environment stands for the level of economic development of the country or region involved in the business ecosystem. Technological environment reflects the practical technological status of business ecosystem. The natural geographical environment is the natural geographical space involved in the business ecosystem

RESEARCH METHODS

3.1. Method and Case Selection

Taking Alibaba Group as research object, the single case analysis method was adopted. A single case study can not only fully and concretely describe an existing phenomenon[14], but also excavate and analyze cases in a more detailed and in-depth way, which is helpful in solving the “why” and “how” problems. What’s more, the single case study method is more suitable for studies with typical and representative cases, especially longitudinal studies that conduct in-depth analysis of the same case at different time nodes [15] In addition to ensure the depth of case study, the single case study can help readers better understand the background of the case [16], which can make the evolution path of the business ecosystem of platform enterprises and the laws behind it more clearly. Therefore, it is necessary to focus on typical key case for in-depth study rather than superficial discussion on numerous cases. The aim of this study is to find out the specific revolution path of business ecosystem to offer guidance and reference to enterprises who want to establish or participate in business ecosystem, therefore, the single case study method is more appropriate.

On the basis of taking into account the three factors of case typicality, data accessibility and research convenience, Alibaba Group is finally selected as the case study sample. First of all, the typicality of the case is reflected in the fact that Alibaba Group is the core enterprise in the ecosystem and its business ecosystem is representative. To explore the revolution path of business ecosystem of platform enterprises, it is necessary to analyze the growth logic of the system from the perspective of the core enterprise of the business ecosystem. Therefore, the research object must be the core enterprise and be typical. Alibaba business ecosystem is well suited to the case requirements of this study. Alibaba business ecosystem is an ecosystem integrating various industries such as financial industry, logistics industry, retail industry and big data, with a large number of various user groups. It is also the leader and founder of the business ecosystem. In addition, Alibaba is a leader in the emerging Internet industry. Since its birth in 1999, it has been in a good state of development. This company has standardized management and the business data exposed to consumers is accurate, complete and timely, which means there is access to collect relatively complete data and materials. All above provide guarantee for the availability of data and convenience of research.

3.2. Data Collection

The general process of case study includes four steps which are literature review, case study draft design, case data collection and case data analysis [7]. This paper is based on this process. In the literature review stage, relevant data such as ecosystem and business ecosystem were collected and sorted to analyze the current research status and determine the research theme and direction; in the design stage of the case study draft, the data collection methods and analysis strategies were clarified, and the case interview outline was designed. The conceptual model of the case study was initially constructed; in the stage of case data collection, in order to enhance the research reliability and validity, this paper combined primary data with secondary data. In terms of primary data collection, first of all, relevant data were acquired on the basis of understanding the company's strategic intention through interviews with Alibaba's managers. At the same time, for the purpose of obtaining data in a more comprehensive and in-depth way, in addition to manager interviews, informal communications were also conducted with relevant

departments of Alibaba. In terms of secondary data collection, the data mainly come from enterprise archives, relevant news reports, public publications, strategic planning reports, internal publications, relevant websites and relevant database literature search; In case data analysis stage, firstly, the case interview records were sorted out and the data were triangulated [7], that is, based on the comparison of the case data, the data that can be supported by multiple parties is selected for analysis. Secondly, the reliable data were screened and the case description was written.

4. CASE STUDY

4.1. Case Description

Alibaba Group, founded in 1999, is committed to providing a trading platform for small and medium-sized manufacturers to sell their products, adhering to the business philosophy of "to make doing business easy". Alibaba is one of the first e-commerce platform enterprises in China, and its Taobao platform has become a leader in China's e-commerce industry. From the perspective of definition, Alibaba is a typical representative of platform enterprises [17]. The distribution of each business segment of Alibaba Group's ecosystem is shown in **Figure 2**. From the aspect of business distribution, it can be said that Alibaba is a typical representative of platform enterprises. By analyzing this case, the evolution path of business ecosystem of platform enterprises can be grasped, so as to provide reference and guidance for enterprises to construct and develop their business ecosystem.

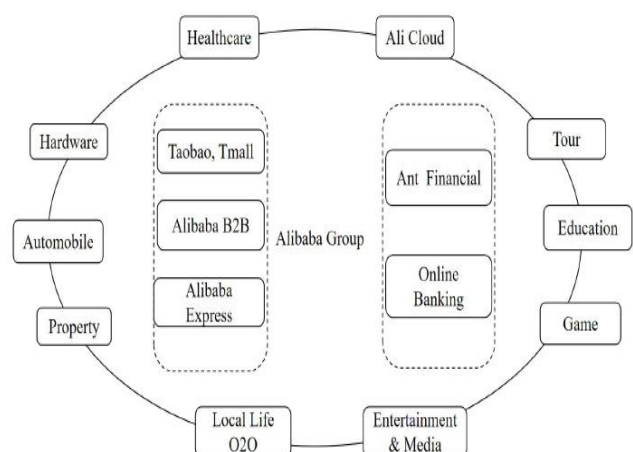


Figure 2 Distribution of business segment of Alibaba group's ecosystem. Sources: According to the related data of AliBaba's official website.

4.2. The Construction of Business Ecosystem Model of Alibaba

Under the leadership of the core enterprises, members of Alibaba have formed a symbiotic and co-thriving which is similar to natural ecosystem, and they are interconnected, interdependent, competitive, and mutually restricted. Business ecosystem of Alibaba is composed of producer population, consumer population, decomposer population and market environment. Core enterprises are Alibaba B2B Company, Taobao, Alipay, and Alibaba Cloud Computing. Dominant enterprises in Alibaba business ecosystem is the large number of SMEs and individuals who release or search information to match their needs in business ecosystem. Niche enterprises are commercial banks, logistics company, IT company who may not only offer services for enterprises in Alibaba ecosystem, but also to other outside institutions or individuals. **Figure 3** is the basic business ecosystem of Alibaba and its composition.

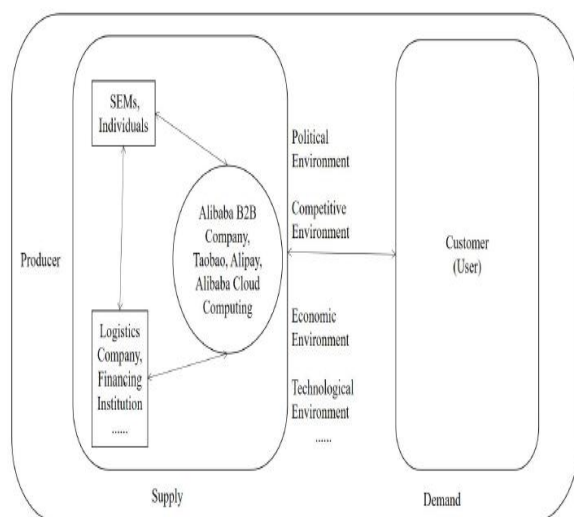


Figure 3 Basic business ecosystem of Alibaba and its composition

4.3. Analysis of the Evolution Path of Alibaba Business Ecosystem

James Moore [1] once divided the growth of the business ecosystem into four stages: the original stage, the expansion stage, the leadership stage, and the self-renewal stage. As a special kind of business ecosystem, the growth of platform ecosystem can also be divided into the same stages. Alibaba business ecosystem is a complex and continuously evolving dynamic system. In this paper, the evolution path of Alibaba business ecosystem will be analyzed from the perspectives of the main strategic challenges faced by platform enterprises in different stages. **Figure 4** is the evolution path of business ecosystem.

The original stage is the first step in the evolution of the business ecosystem. The main strategic challenge of this stage is to start from scratch and activate the start-up of the ecosystem. In this stage, core enterprises attract necessary partners through innovative operation modes or high value-added services to provide good products and services, jointly meet the diversified needs of a specific group of consumers, and thus preliminarily construct and form a business ecosystem. In this stage, the business ecosystem is vulnerable, and the fast-moving market context brings huge survival challenges to it. The more effective the operation mode of business ecosystem is, the stronger its vitality will be, and it will survive and develop to an initial scale in this stage. For example, the business ecosystems such as Tik Tok and Tantan are going through their original stage.

Entering expansion stage, the main strategic challenges are to achieve rapid growth of the ecosystem, to defeat rivals in the market competition, and to occupy a dominant position. Along with the rapid growth of the core enterprises in the ecosystem and the increasing number of dominant enterprises, niche enterprises and consumers in the system, the scale of the business ecosystem continues to expand. At the same time, the competition intensity among homogeneous ecosystems based on different core enterprises begins to upgrade. In this stage, the ecosystem will expand from a single business to a multi-business. Stakeholders in the ecosystem will become more complex, and a relatively stable competitive pattern will be basically formed. For example, the e-commerce ecosystem centered on Didi won an overwhelming victory in the competition with Kuaidi, Uber and other homogeneous ecosystems in the expansion stage, which has basically formed the competitive pattern of China's ride-hailing e-commerce.

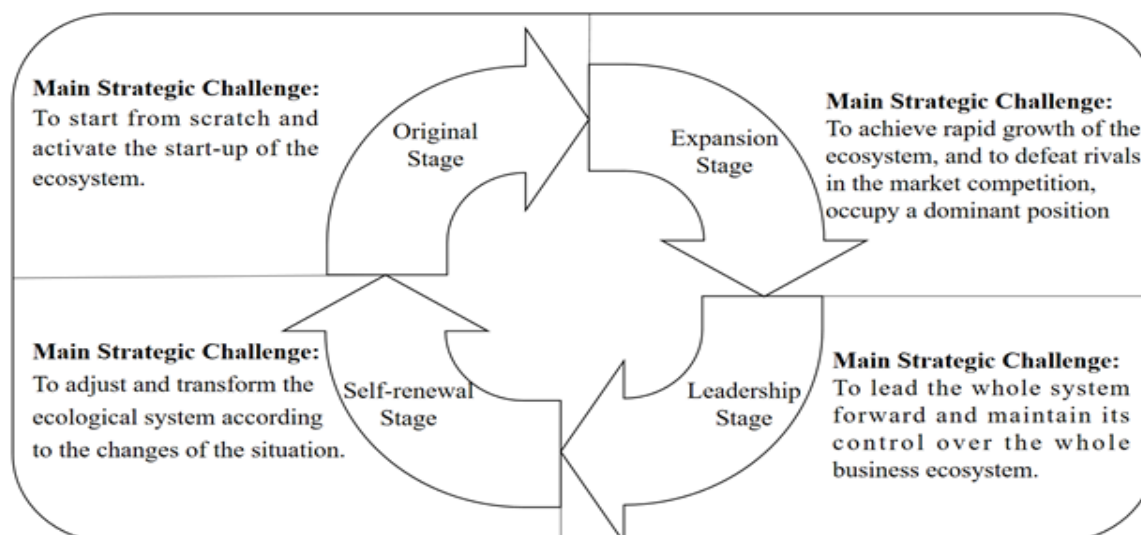


Figure 4 Evolution path of business ecosystem

In leadership stage, after expansion stage, the number of dominant enterprises and niche enterprises increase fast, the connection between members become more and more close and complex. The competition and conflict between enterprises within the platform are becoming more and more serious. At this stage, the expansion of the ecosystem has taken a secondary position, and the main strategic challenge for the eco-builders is to lead the whole system forward and maintain their control over the whole ecosystem. The approaches adopted to control the whole ecosystem may differ. For example, Tencent is accustomed to financial investment, cooperation.

In natural environment, the ecosystem is constantly evolving with the change of external conditions. In the business world, the platform ecosystem also needs to change with the changing external factors such as technology, system and macro conditions. Entering self-renewal stage, the main strategic challenge of the eco-builder is to adjust and transform the ecological system according to the changes of the situation. Specifically, different environmental changes have different impacts on ecosystem. In general, if the environment change just has influence on non-core businesses, there is no need to transform the core business. However, if the change has an impact on the core business of the whole system, the platform builder must respond to it in a timely and positive manner, or it may be eliminated in the competition. It should be noted that the new business chosen should be able to utilize the resources of the old system to the maximum extent possible, in addition to being able to grow quickly and support the ecosystem. In this way, the ecosystem builder can make full use of the old system to provide blood for the new system during the whole transformation process, so that the whole transformation can be completed better and more smoothly. For instance, Tencent's core business is instant messaging,

and its comparative advantage is in providing connectivity. Therefore, when developing the industrial Internet, Tencent mainly positions itself as a connector and assistant and the way that it construct new business ecosystem is by adding small programs and other functions for merchants on WeChat.

Take Alibaba as an example. In 1999, Jack Ma (Yun Ma) and 17 others founded Alibaba. Alibaba is a business to business platform, where buyers and sellers can find each other by posting their information on it. At the original stage, Alibaba seized the needs of domestic small and medium-sized enterprises (SEMs), created the information release platform, which became the key product for the establishment its business ecosystem. It established a symbiotic relationship with target users through free strategies and information coordination measures. Specifically, based on the Internet Alibaba established an information release platform. By collecting, sorting out, releasing and promoting the company and product information of SMEs, Alibaba built an information matching platform between the supply and demand sides, helping SMEs to break through the constraints of technology. Besides, the establishment of the international trading platform enabled domestic SEMs to integrate into global trade, and a large number of domestic SEMs continue to join in the embryonic ecosystem created by Alibaba to obtain business opportunities. At this time, Alibaba business ecosystem composed of the core enterprises and the dominant enterprises was initially formed.

After the original stage, the growing Alibaba had achieved great success in B2B, began to develop its new business. In 2003, the C2C platform Taobao.com was established. Taobao.com extended the boundary of the business ecosystem from B2B transactions of SMEs to C2C transactions of ordinary netizens. The creation of C2C platform greatly expanded the boundaries of Alibaba's business ecosystem. With the large-scale

expansion of the dominant enterprise, niche enterprises in Alibaba's ecosystem also became stronger. For example, in terms of payment, bank remittance and online payment supported by commercial banks provide convenience for online payment, and the launch of Alipay further solves the problem of online payment. In logistics, express companies such as China Post, STO.Express, YTO Express, ZTO Express, BEST Express, YUNDA Express, and SF Express cooperated more closely with sellers on Taobao, providing great help to solve the problem of commodity distribution on the platform. An increasing number of niche companies such as e-commerce traders, software service providers and advertising space providers appeared. Due to the limitation of resources, the expanding boundary of Alibaba's ecosystem inevitably generated competition and conflict with other homogeneous ecosystems, among which the most representative one was the direct conflict in C2C between eBay and Taobao. By applying localization strategy, Taobao broke the eBay monopoly in the field. Finally, eBay withdrew from Chinese market in 2006, and Taobao occupied absolute leadership position in the field of C2C [18]. As master of the C2C leader in China, it attracted a large number of enterprises, which led to the success of parasitic enterprises. For example, enterprises provide decoration services for online stores. In the expansion stage, Alibaba also occupied an advantageous position in the competition between B2B and C2C e-commerce platforms and payment platforms. In general, at this stage, Alibaba completed the strategic challenge that achieving rapid growth of the ecosystem, and defeating rivals in the market competition, occupying a dominant position.

Entering leadership stage, with the increase of platform members, the interest chain and interest network among members were intertwined and became more and more complex, and the phenomenon of ecological niche overlap appeared within the system. Competitions for resources among members got increasingly fierce. Under this circumstance, phenomena that were not conducive to the overall interests of the ecosystem appeared such as rampant fakes, fake orders. In response to these competition problems, Alibaba constructed a series of competitive constraint mechanisms to optimize the internal environment of the system [19]. For example, Alibaba cleaned up the suppliers who frauded on customers, and paid 1.7 million US dollars to 2,249 victims from around the world. To prevent fake orders, Taobao reached an agreement with express companies that no deceitful delivery parcel would be accepted. At the same time, the external competition between platforms is more intense. For example, the rise of JD.com and Dangdang exerted great pressure on members of Alibaba business ecosystem in terms of supply, logistics and reputation guarantee, and they eroded the market of Taobao. In this

context, Alibaba put forward the "Big Taobao" strategy in 2008, which was committed to solving Alibaba users' payment, marketing, logistics and other technical problems successfully on the platform of "Big Taobao", providing a complete set of e-commerce solutions to tens of thousands of online merchants. In April 2008, by integrating high-quality brand merchants on the platform, taobao.com established Tmall serving third-party brands and retailers, to cope with the competition of other B2C platforms. In March 2010, 1688, a platform focusing on online wholesale, was officially launched, connecting B2B and C2C businesses.

For the purpose of maintaining effective control over key business of ecosystem, a series of cross-border acquisitions including electric business platform, logistics, O2O life, offline store, big data cloud computing, finance, insurance, search engines, computer hardware and software, artificial intelligence, new media, movie and television culture, medicine and other 13 industry investment exceeds 400 billion Yuan (according to the incomplete statistics of public information). Through mergers and acquisitions, Alibaba established four digital economy ecological chain systems with omni-channel retailing service as the main core business and payment and financial service system, information technology service system and digital marketing service system as the support for core business. In this process, Alibaba's business ecosystem further expanded, and its e-commerce ecosystem became more complex with the boundaries getting fuzzier. In general, at this stage, Alibaba ensured the leadership of the entire ecosystem by means of system internal renovation and cross-border acquisition, completed the strategic challenge of controlling the entire business ecosystem, and further expanded the ecosystem.

At present, the entire Internet world is shifting from the era of consumption Internet to the era of industrial Internet. With the peak of traffic bonus, each Internet giant begins to shift its strategic focus from customer end to business end and started to adjust its core business. As the resources accumulated by the major giants in the era of consumption of the Internet are different, their choice of new core business also reflects obvious differences. In the renewal stage, Alibaba's non-core business is seriously impacted by the new e-commerce model including fast logistics, such as JD.com. So it quickly launches its logistics brand, Cainiao, to make up for its shortcomings in logistics. In terms of core business restructuring, Alibaba is now launching a number of B-side services, such as Smart Brain, and using them to empower business partners and rebuild the business ecosystem. The reason why Alibaba made this choice is that Alibaba's traditional business is based on e-commerce. During the process of operating e-commerce, Alibaba has accumulated a large amount

of hardware, data and algorithms, which gives it more comparative advantages in providing intelligent services. In general, the main strategic challenge of Alibaba in the renewal stage is no longer to expand, but to adjust and change its business according to the environment.

Through the above analysis of each stage in Alibaba's life cycle, it can be identified that the number of enterprises in Alibaba has increased significantly with the revolution process of its business ecosystem. Different stage requires different development strategy to guarantee its development. Meanwhile, the process to complete new strategic challenge is also the process of expanding its business ecosystem.

5. CONCLUSION AND LIMITATIONS

This paper uses the methods of case study to conduct exploratory research and analysis on the evolution path of business ecosystem. At first based on business ecosystem theory, constructing the model of Alibaba business ecosystem structure, and then identifying four major stages of Alibaba business ecosystem evolution path which are original stage, expansion stage, leadership stage and the self-renewal stage. Along with the life cycle development, members in Alibaba business ecosystem are also increasing rapidly. In other words, they evolve simultaneously, which indicate that enterprises should view their development process from the perspective of ecology, and choose appropriate development strategies based on their business ecological position, so as to promote the healthy growth of the whole ecosystem and win in the competition among homogeneous ecosystems.

Although this paper reveals the evolution path of Alibaba's business ecosystem, it still has some shortcomings. Firstly, the case study sample has limitations. The evolution path of Alibaba's business ecosystem studied in this paper is a single case. Although a large amount of data is used in the analysis process, the universality of the conclusion is still limited, which can be remedied by multiple case studies in the future. Secondly, there are also homogeneous competitions among subsystems within the business ecosystem, such as Taobao and Tmall. The competition within the system is different from the competition outside the system, which is worth further study. Finally, this paper only considers the evolution path of the business ecosystem from the perspective of the main strategic challenges at different stages of Alibaba's development. In the future, it can be analyzed from more perspectives.

ACKNOWLEDGMENT

This research was financially supported by the key project of Beijing Social Science Foundation (No. 18GLA008).

REFERENCES

- [1] Peltoniemi M, Vuori E. Business ecosystem as the new approach to complex adaptive business environments [J]. *Empowerment in organizations*, 2004, 2(1): 267-281.
- [2] Moor J F. Predators and prey: a new ecology of competition [J]. *Harvard Business Review*, 1993, 71(3): 75-83.
- [3] Gawer A, Cusumano M A. How companies become platform leaders [J]. *MIT Sloan management review*, 2008, 49(2): 28-35.
- [4] Cennamo, C., J. Santal, "Platform Competition: Strategic Trade-offs in Platform Markets", *Strategic Management Journal*, 2013, 34 (11): 1331-1350.
- [5] Li Lei, Zhao Xiande, Jian Zhaoquan. Research on operation Strategies of platform enterprises under network environment [J]. *Journal of Management Science*, 2016(3): 15-33.(In Chinese)
- [6] Langford L K. Platform Leadership: How Intel, Microsoft, and Cisco Drive Industry Innovation [J]. *Engineering Management Review IEEE*, 2002, 31(1):138-138.
- [7] Zhang Xiaoning, Overview of research on platform Strategic Innovation [J]. *Economic management*, 2014(3):190-199. (In Chinese)
- [8] Xu Jin, ZhaoXiangjian, A Preliminary Study on Platform Economics [J]. *China Industrial Economics*, 2006(5): 40-47. (In Chinese)
- [9] Tansley R B A G. The Botanist in Ireland.by Robert Lloyd Praeger [J]. *Journal of Ecology*, 1935, 23(2):541.
- [10] Hannan M T, Freeman.The population ecology of organizations [J].*American Journal of Sociology*, 1997, 82(5): 929-964.
- [11] Zhong Gengshen. Business Ecosystem Theory and Development Direction [J]. *Dongyue Tribune*, 2009, 30(6): 27-33. (In Chinese)
- [12] Marco Iansiti, Roy Lecien. Strategy as ecology [M].*Harvard Business Review*, 2004:88.
- [13] Iansiti, Marco, Levien, & Roy. (2004). Keystone advantage: what the new dynamics of business ecosystems mean for strategy, innovation. *Harvard Business School Press Books*
- [14] Yin R K.Case study research: design and methods [J]. *Journal of advanced nursing*, 2010, 44(1): 108-108.
- [15] Zhang Xiaoning, Overview of research on platform Strategic Innovation [J]. *Economic management*, 2014(3):190-199. (In Chinese)

- [16] Pan S L, Tan B. Demystifying case research: A structured–pragmatic–situational (SPS) approach to conducting case studies [J]. *Information and Organization*, 2011, 21(3):161-176.
- [17] Ma Mei, LiXinxin, Cui Hanwen, (2017) *Alibaba Empowers Small and Medium-sized Enterprises in B+ Era*. Shanghai Jiao Tong University Press. (In Chinese)
- [18] Wei Xin, Shi Haie. *Inside Jack Ma's Empire: Secrets for the Growth of the World's Largest E-commerce Enterprise* [M]. Beijing: New World Press, 2013: 126-137.(In Chinese)
- [19] Jin Yanghua, Pan Jianlin. Platform Leadership and Users Based on Embedded Open Innovation Entrepreneurial Collaboration Model - A Case study of Taobao [J]. *Chinese industrial economy*, 2014(2): 148-160. (In Chinese)