

Application of Ecological Theory in the Governance of Competitive Relationship on Internet Platform

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Abstract

This paper analyzes the application of niche theory in enterprise management and public management, and combs the related research on the competitive relationship of Internet platforms. It is found that the niche in ecology can be used to coordinate the competitive relationship of Internet platforms, so as to achieve the purpose of governing the malicious competition between Internet platforms.

Keywords

Ecology; Internet platform; Competition relation.

1. Introduction

With the increase of the scale of Internet platforms, the competition between Internet platforms is becoming increasingly tense. When the market is gradually saturated, the Internet platform has taken malicious competition measures to obtain more users, such as restricting transactions and excluding competitors. This is not conducive to fair competition in the Internet platform market, and harm the interests of consumers.

2. Application of Ecological Theory in Management

Niche originates from biology and was first proposed by ecologist J. Grinnel as the position and function of organisms in communities . Hannan and others first tried to combine corporate research with niche concepts to explain competition between one population and other populations due to specific resource space . Brunsman et al. pointed out that enterprise niche is a N-dimensional volume within a certain time and space, covering resources and physical, biological and social aspects that restrict and promote organizational performance . Wang Nan proposed niche refers to the enterprise in the business ecosystem environment, their own resource endowment and competitive position. Based on the concept of ecology, Xu Fang and Li Jianhua defined enterprise niche as the position and role of enterprises in specific environments . Gu Ligang, Lan Ying, etc. believe that enterprise niche is the relative position and functional role of enterprises and other enterprises in the same environment through mutual influence in a specific period of time [1].

By using a series of indexes such as niche breadth and niche overlap, biologists have formed the important niche overlap theory and niche separation theory in ecology. Enterprise niche breadth refers to the sum of various market resources used by enterprises, that is, the degree of diversification of adaptation to market environmental resources[2]. The wider the enterprise niche is, the more diversified and adaptable the enterprise is ; on the contrary, the more single enterprise development, the weaker the ability to respond to the market . Because the essence of enterprise competition is niche overlap and relative shortage of resources, the higher the degree of overlap, the more competitive advantage, the more intense competition. However, competition is not the inevitable result of overlap, on the contrary, overlap is a necessary condition for exploitative competition.

As a mature ecological research method, niche theory has been applied to many fields of economic management. Lin analyzed the evolution mechanism of creative talents from the perspective of niche breadth, overlap and dimension ; Seol et al. used the case of the ROK digital broadcasting industry

to analyze the demand for new media business by comprehensively using the Base model and niche theory. Kwon uses strategic niche management to study how market barriers increase the market share of alternative fuel vehicles and finds that the effectiveness of market niche depends on the size of the network effect. Ding Ling uses Lenovo's cross-border M & A case to explore the evolution law of enterprise niche, and reveals that the three stages of the complex nested process of R & D organization ambidexterity promote the spatial expansion and life cycle evolution of enterprise niche. Based on niche theory, Zhang Yijin and Gao Liangmou constructed the evaluation model of niche influencing factors of internet platform enterprises, and found that value transfer ability, user scale and technological innovation ability are more important to the development of internet platform enterprises. Liu Bin and Zhu Yeshan used the niche theory to explore the competition and cooperation relationship of regional talents and put forward countermeasures and suggestions for the optimal development of regional talents.

In summary, the niche theory is widely used in organizational development strategy, enterprise management, and enterprise strategy optimization. At present, the research on the niche of Internet internet platform enterprises is more about the niche expansion of internet platform enterprises and the evolution of internet platform niche. There is no research on the evolution of competition and cooperation between internet platform enterprises by using the niche theory. This paper uses the theory of niche overlap to study the co-opetition relationship between internet platform enterprises, and sorts out the niche overlap between internet platform enterprises according to the actual situation, so as to study the types of co-opetition relationship between internet platform enterprises.

3. Research on competition-cooperation relationship

Padula and Dagnino believe that the concept of co-opetition comes from such a consensus: in the interdependence between enterprises, the value creation process and the value sharing process will involve a partially consistent interest structure. In this structure, competition and cooperation problems exist at the same time and are closely linked, which is called co-opetition. In the theory of co-opetition, competition and cooperation coexist in inter-organizational relationships, and they work together, influence each other, and transform each other under certain conditions. Co-opetition is different from pure cooperation. Cooperation usually refers to the behavior of enterprises (or organizations) seeking common interests by using complementary resources, skills and capabilities. Competition and cooperation are not simply competition. Competition is an antagonistic behavior adopted by more than two individuals or organizations in order to achieve a specific purpose, which refers to the conflict and hostility between competitors[3]. If an organization wants to survive and develop in a complex and changeable environment, it must seek the resources necessary for survival and development from the external environment, such as funds, technology and key talents. In the co-opetition relationship, although the enterprises in cooperation have come together in order to achieve the strategic goal of complementary resources, they are still independent business entities, and there are still differences in interests and even conflicts. The relationship between them has always been characterized by competition and cooperation. In the stage of value creation, enterprises are more willing to cooperate and take knowledge sharing, resource sharing or joint action to achieve common goals, but there is still competition. In the value distribution stage, enterprises may take more confrontation and hostility, but they may also give up some interests for long-term cooperative interests. Therefore, cooperation is given priority to in the stage of value creation and competition is given priority to in the stage of value distribution.

In terms of the research on the competition and cooperation among enterprises, Zhu Yongming, from the perspective of the learning ability of alliance enterprises, explores the method of guiding the virtuous circle of innovation factors and core knowledge among enterprises of industrial technology innovation strategic alliance by constructing the evolutionary game model of competition and cooperation strategy selection of enterprises of industrial technology innovation strategic alliance. Through empirical analysis of Chinese manufacturing enterprises, Li Donghong and Wu Rihan et al. explored the impact of competition and cooperation strategy of Chinese manufacturing enterprises on

innovation performance, and thus put forward suggestions on how Chinese manufacturing enterprises use competition and cooperation strategy to promote innovation. Mali used RMS model to analyze the evolution of co-opetition relationship between parent enterprises and derivative enterprises, and proposed that the co-opetition relationship between parent enterprises and derivative enterprises should be adjusted with the intensity of competition as the signal[4]. Based on the theory of value network, Wang Jianping and Wu Xiaoyun took 246 enterprises as samples for empirical research, and found that under strong network relationship, enterprises should give priority to cooperation, supplemented by competition. Under weak network relationship, enterprises should adopt the opposite strategic configuration. Yang Shixu constructed the evolutionary game model of the three operators from the three dimensions of product, price and service, analyzed the game characteristics and the competition strategy of telecom operators, and proposed that the three operators should abandon the price war and take the optimization of service and product as the strategy to better occupy the market. Through the repeated prisoner dilemma game experiment of competition and cooperation between enterprises, Dingrong analyzed the evolution of cluster alliance group behavior and the evolution trend of cluster alliance group behavior in spatial structure[5].

In summary, through the research on the competition and cooperation relationship between enterprises, we can explore the optimization and solution of enterprise innovation, enterprise development management and other issues. Therefore, we can explore the development process of monopoly internet platform enterprises through the evolution of competition and cooperation relations of internet platform enterprises, and predict the evolution trend of competition and cooperation relations of enterprises by using the method of game theory.

4. Summary

Overall, the application of ecological theory in the study of internet platform competition relationship can be divided into the following points :

- (1). Determine the intensity of the internet platform by distinguishing the competitive relationship between different internet platforms. It can be known from the niche overlap degree that the higher the niche overlap of the internet platform is, the more intense the competition is. When the internet platform niches are completely overlapped, the internet platform competition is fierce, which may lead to malicious competition. When the internet platform niches are partially overlapped, the fierce degree of internet platform competition decreases, and the internet platform may adopt the coexistence of cooperation and competition. When the internet platform niches are not overlapped, the internet platform does not have a competitive relationship, and the internet platform may adopt cooperation.
- (2). The coordination role of niche resources in internet platform competition is discussed through niche theory. When the internet platform competition is too fierce and produces malicious competition or internet platform monopoly, the competition behavior of the internet platform can be coordinated through niche resources such as users, funds and innovation in niche resources, so as to adjust the competition relationship between internet platforms and achieve the purpose of maintaining fair market competition and protecting the interests of consumers.

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