

# On the Challenges of Digital Economy to Anti-monopoly Law

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## Abstract

**With the advent of the digital economy era, there are many new data-related market competition and anti-competition behaviors, which pose new challenges to the regulation of anti-monopoly law. How to define relevant market in the digital economy era, how to identify the market power in the digital economy era, and how to regulate relevant anti-monopoly behaviors by anti-monopoly law need to be studied and researched in depth, so as to provide effective institutional support and order guarantee for the healthy development of digital economy.**

## Keywords

**Digital economy; anti-monopoly law; definition of relevant market; market power; monopolistic behavior.**

## 1. Introduction

In the era of digital economy, data has been endowed with more connotation and value, and has increasingly become the core competitiveness of enterprises. Competition is no longer just the individual competition between enterprises, as the system competition between platforms has become a new phenomenon. The emergence of data makes competition from “product market” to “factor market”, and endows it some characteristics that traditional competitive market does not have, such as attention economy, platform network effect, etc. These characteristics pose severe challenges to the anti-monopoly law in the era of digital economy.

## 2. Difficulties in Defining Relevant Market in Anti-Monopoly Law

### 2.1. Method for Defining Traditional Relevant Market

Under the market economy, there is a certain limit between the competition among operators, and not all the operators have competitive relationships. No matter how large the business field and scale of the operator is, its influence has a relatively certain market scope, and this scope is so called relevant market.

The identification of relevant market runs through the whole anti-monopoly law, and “defining relevant market is the starting point for analyzing various kinds of competitive behaviors” (OECD, Glossary of industrial organization economics and competition law, p54). The premise for reaching a monopoly agreement is that there is a competitive relationship between the parties to the agreement, and the identification of the competitive relationship is the definition of relevant market. Judging whether an operator has a dominant position in the market depends on the operator’s share in relevant market, the degree of competition and the entry threshold in relevant market. When examining whether it constitutes a monopolistic behavior of concentration, the size of the market needs to be determined no matter the Herfindahl-Hirschman Index used by the U.S. anti-monopoly enforcement agency or the market share is directly used to determine the market concentration. (Shi Jianzhong, Wang Weiwei, *On the Meaning and Definition of Related Market in Anti-monopoly Law*[[J]]; Chongqing Social Sciences. 2009,4.) It can be seen that all the analysis in the review of anti-monopoly law enforcement

cannot be separated from the accurate definition of relevant market. Relevant market includes three dimensions: relevant product market, relevant regional market and relevant time market. (Paragraph 2 of Article 13 of the *Anti-monopoly Law of the People's Republic of China* stipulates that "For the purpose of this Law, relevant market refers to the scope of commodities and geographical areas in which business operators compete for specific goods or services (hereinafter referred to as "commodities") within a certain period of time")

Relevant product market refers to a group of products whose demand elasticity and supply elasticity are very low, and the operators can also make profits after raising their prices. There are two common methods to define relevant product market. The first is the demand substitution method focusing on qualitative analysis, that is, carrying out measurement from the perspective of demanders, and physical characteristics, functional uses and prices of products. If different products can replace each other, consumers can change from one product to other alternative products at a lower cost, so that these products are in relevant market. The second is the SSNIP test, which is inclined to quantitative analysis, also known as the hypothetical monopolist test. (See OPERATIONALIZING THE HYPOTHETICAL MONOPOLIST TEST) Due to the subjectivity of demand analysis method and in order to improve it, the United States formally proposed SSNIP test method in the Horizontal Merger Guidelines. The design principle of such method is: the current market supply and demand relationship alone cannot help us find the substitute of the specified product accurately, because the change of product price will make some potential operators enter into the market, thus affecting the supply and demand relationship of products. Therefore, the SSNIP test method is mainly divided into two steps: the first step assumes that the product to be tested is already in a monopoly position; the second step is to impose a "small, significant and non-temporary" price increase on the product to observe whether the operator of the product is still profitable after the price increase. If consumers turn to other products after the price increase, they are considered to be in a relevant market. After these products are added, the prices will continue to be increased until profits can be realized after the price increases.

Relevant regional market refers to the regional scope in which a product competes with all other alternative products. The demand substitution method and SSNIP test method are also applicable to the definition of relevant regional market. If consumers in one region can quickly turn to nearby areas to buy products, the two regions constitute a relevant regional market. (Shi Jianzhong, Wang Weiwei, On the Meaning and Definition of Relevant Market in Anti-monopoly Law[J]. Chongqing Social Sciences. 2009,4) Using SSNIP test method to define relevant regional market is the same as defining relevant product market: if the operator in the target region is profitable after a sustained small price increase, it is considered as relevant regional market; if the strong substitution of other regional markets makes the price increase unprofitable, it is necessary to expand the regional scope.

Relevant time market refers to the time when relevant products compete in relevant regional market. The introduction of relevant time market is due to that in different time stages, the same product market and regional market are facing different competitive environment, and the degree of demand substitution is also different. For example, relevant market of seasonal products is only temporary, and whether intellectual property rights are in the protection period also means different relevant markets. In the market with obvious innovation degree, it is more significant to identify the relevant time market, because technological innovation can change the substitution relationship between different products, and the choice of time point is particularly important. (See Hou Liyang, On the Relevant Market in Anti-monopoly Law: Origin, Method, and Retrospection[J]. Competition Law and Policy Review. 2018,1.)

## **2.2. The Failure of Method for Identification of Traditional Relevant Market**

### **2.2.1. Continuous Expansion and Ecological Development of Product Functions Causing the Physical Market Boundaries Broken**

Along with the development of digital economy, the functions of products continue to expand, making the relationship between products constantly strengthened, and the products and services with single function are becoming rarer. Therefore, the demand substitution method based on the physical characteristics or functional attributes of products shows its disadvantages.

A large number of new products have appeared under the background of Internet, which has subverted the traditional production and marketing methods. For tangible products, Internet enterprises realized the interconnection between their products through systematic design and formed an ecological system, which not only can provide convenience for their users in product use, but also can increase the user stickiness and promote more products. This kind of convenience affects the functions of products, and makes the products with the same function seemingly irreplaceable. The market of intangible products is also in ecological development. For example, WeChat was first borne as a social platform, but then it has developed with the functions of payment and fund transfer. On the other hand, Alipay was originally an online payment platform, but later it has the functions such as life account (similar to WeChat official account), friends' dynamics (similar to WeChat's Moments) and chat function. From the physical attributes, both WeChat and Alipay are applications, but they have so many functions overlapped with each other. If WeChat and Alipay could be replaced by one another, there would not be that much users downloading the two applications on mobile phone simultaneously.

As the scope of operators' participation in market competition enlarges, the product boundary is becoming more and more fuzzy and difficult to determine. In the context of Internet, products and services have no geographical boundaries and will not be restricted by logistics. The factors affecting relevant regional markets are mainly language, using habits and border control measures taken by different countries against Internet services due to political, cultural or other non-market factors. (Wu Tao, Definition of Relevant market in Anti-monopoly Cases of Internet Industry: Experience and Enlightenment of the United States[J]. Electronics Intellectual Property. 2011,5.) In addition, the cross-market attribute of data also increase the difficulty in defining relevant regional market. Hence, the traditional method for defining relevant market can no longer meet the demands of modern economic development.

### **2.2.2. Cross Network Effect and Chain Reaction Caused by Bilateral Market**

In the traditional business mode, products and services flow unidirectionally from operators to consumers, while the newly merged platform enterprises have the characteristics of bilateral market, a major characteristic of which is that users on both sides of the platform will produce positive and negative cross network affect and chain reaction, meaning the number of users and transaction at one side will affect that of the other side. (Reberto Roson, Two—Sided Markets: A Tentative Survey[J]. Journal of Network Economies,2005,2, P142.) Since this kind of affect is mutual and non-unidirectional, the results of decision-making on one side of the market will directly influence the performance and efficiency of the market on the other side, namely, the larger the scale of users on one side of the market is, the higher the efficiency of users on the other side joining the platform will be.

Due to the externality of cross network, the demand and efficiency of the demanders on both sides of the platform are interdependent, so the effect of small price increase might be amplified. (Wu Guangqiang, Definition of Internet Monopoly Relevant Market from the Perspective of Bilateral Market[J]. The People's Judicature. 2018,22.) Such effect may not be obvious for the market on one side, however, considering the huge number of users of the markets on both

sides, the traditional SSNIP test method might underestimate the losses caused by price increase and could not estimate the chain reaction caused by price increase. Besides, the competition in bilateral market is more complicated since the operators in bilateral market have to face not only peer competitors who adopt the bilateral market model, but also the competitors who face only one side of market, because any side of the bilateral market constitute an independent market. Therefore, we have to think about questions such as which competitive market should be taken in account, and how to deal with the chain reaction among different markets when defining relevant market.

### 2.2.3. Free Pricing Strategy Making Benchmark Price Uncertain

Another important characteristic of bilateral market is that: the total cost of platform is affected by the price structure. The total price demanded by the platform from the supply and demand sides will be allocated between buyers and sellers, and the allocation proportion will affect the total cost of the platform, rather than following the marginal cost pricing principle adopted in unilateral market. (Ning Lizhi, Wang Shaonan, The Dilemma and Outlet of Defining Relevant Market under the Condition of Bilateral Market[J]. Journal of Political Science and Law. 2016,6.) Platform enterprises might charge users on one side with lower or even free fees, while charge users on the other side of market with higher fees in order to make profits. For instance, search engines and social software are often free of charge for users, but they will charge high advertising fees against advertisement providers. Attracting large number of users with the free mode is the premise for operating this kind of business model, but only by taking advantage of huge amount of fluent business advertisements and other value-added services may profit be made and continuous free services be accomplished. This free mode is very common in operation of many Internet platform enterprises.

Both demand analysis method and hypothetical monopolist test are inseparable from the consideration of price factor. With respect to demand analysis method, it is significant that the substitute products shall be in the same or similar price, otherwise it will be difficult to identify the substitution relationship between products. On the other hand, SSNIP test method shall take the impact of price increase as the starting point of analysis. In accordance with the Guidelines of the Anti-monopoly Commission of the State Council on the Definition of Relevant Markets, in general cases, the price increase imposed on the target commodity or relevant commodity in the target region is 5% to 10%. In free mode, no matter how much the price increase is, the pricing is zero. Without the benchmark price as a reference, the traditional SSNIP test method will not function as expected.

## 3. Obstacles to Identification of Market Power

### 3.1. Failure of the Method for Inferring Market Power by Market Share

It is specified in Article 18 and Article 19 of the Anti-monopoly Law of the People's Republic of China that whether an operator holds a dominant market position shall be identified in accordance with the market share thereof. If the market share of an enterprise reaches a half, one third, or three quarters or more of relevant market, the enterprise shall be presumed as holding a dominant market position. From the perspective of economics, market share is the product of the sales volume or total sales volume in relevant markets of a certain enterprise and 100%. Therefore, market sales volume is the key factor in calculation of market occupancy or market share. (Sun Jin, Zhao Zeyu, Systematic Reconstruction of the Definition of Market Dominance of Internet Platform Operators—Focusing on the Amendment of Article 18 of Anti-monopoly Law[J]. Science Technology and Law. 2019.5.) Since the free mode is widely used by platform enterprises currently, the market share lacks calculation basis. As mentioned above, the method for defining relevant market is no longer valid, resulting in the absence of basis for calculating market share.

### **3.2. No Provisions in the Anti-Monopoly Law Indicating That Data Has Become An Important Source of Market Power**

Objectively speaking, data is a kind of intangible property, which cannot be exclusively possessed by one specific entity and is non-exclusive and sharing. (Cheng Xiao. On Personal Data Rights in the Era of Big Data[J]. Social Sciences in China. 2018,3.) However, data is exclusive to some extent. The amount of data grasped by a platform enterprise will reflect the market power of the enterprise to a certain extent.

In practice, data collection is nothing easy like collection of sunshine and air. Instead, the collection, storage and analysis of data requires investment of huge costs. As the consideration of collecting users' data, enterprises will provide services in lower or even free charge. But the promotion and advertising of such services, algorithm research and development and labor costs are high. In addition, the life of data is short, and the update of data is fast, which require continuous investment of new resources. Once a large number of user data are mastered and analyzed carefully, it is of great significance to find out the users' preferences, accurately launch products and save publicity costs. The high cost in the early stage of data collection has formed barriers to big data market entry, creating conditions for monopoly. The commercial value of big data itself also makes the enterprises' mastering and operation of big data profitable. Therefore, data has competitive significance and becomes an important market power of the operators who master big data.

In accordance with the laws of supply and demand, the commodity value is strongly associated with its scarcity. The operators of the big data market may, on the basis of their own interests and values, realize exclusiveness of data by such means as exclusive data control, conclusion of exclusivity agreement with partners, and technical barriers, with a view to obtaining more profit. (Yin Jiguo. Theoretical Logic and Basic Method of Anti-monopoly Regulation Concerning Big Data Market. [J]. Political Science and Law, 2019,10. ) The leading enterprises may use their capital advantage to impede competition by blocking their rivals from collecting identical or similar data or rendering them incapable of collecting critical data timely. That is, though data may not be easily monopolized due to its large scale and repeatability in collection and utilization, the market leader still can corner the market by taking control of relevance and timeliness of data. In current anti-monopoly legislation, data has not been included as a factor for judgement of the operators' market power.

### **3.3. Insufficient Consideration of Anti-Monopoly Legislation for Users' Reliance on Platform**

There are relatively high market barriers in the big data market, making it more difficult for competitors to join in. Such barriers may be the structural barrier naturally formed due to high development cost, near-zero marginal cost and external conduction effect of Internet, which can provide facilitation for operators that enter the market first to occupy the market, or the artificial strategic barrier. (Wang Jian, An Zheng, Innovation of SSNIP Test Method under Digital Economy[J]. Economic Law Review. 2018, 2.) On one hand, user lock-in effect is a result of spontaneous user selection since users may rely on familiar paths due to fixation of usage habit. On the other hand, operators will develop new technologies and product functions continuously to meet users' demands and increase usage stickiness. Various business models under the digital economy are all strongly interlinked with "flow" and the business will fail once it loses its user base. Such natural business model would definitely make all operators desperately try to keep users and attract more new users and provide differentiated services, which will inevitably lead to user lock-in in the data market.

The more users are locked, the larger the user base and the higher the appeal of platform to the businesses will be. Additionally, higher profits enable the platform to provide better free value-added services to users and therefore attract more users in turn. Such circular reaction brought

by user lock-in sets up the premise for data monopoly, but there is no answer in the current anti-monopoly legislation to whether user lock-in will become a basis for determining monopolistic behavior.

## **4. Difficulties in Regulation of Monopolistic Behavior**

### **4.1. Difficulties of Identification Caused by Technicality in Monopoly Method**

In the era of digital economy, it may be easier for operators grasping data advantage to use new and more hidden means to realize monopoly. Taking the conclusion of monopoly agreement as an example, operators may carry out collaboration by algorithm conspiracy. They may use algorithm to track and analyze the competitors' prices and adopt the same prices in an implied manner; supervise each other's implementation of conspiracy agreement; share the pricing algorithm and use procedures to adjust price in real time on the basis of market data to realize enforcement of dynamic monopoly agreement. (See Liu Zhicheng, Li Qingbin, Mastering Features of Current Data Monopoly and Optimizing Regulation of Data Monopoly[J]. China Development Observation. 2019,8.)

This new conspiracy mode has brought challenges to anti-monopoly rules and places more demands on technology comprehension level of anti-monopoly authorities. Since the complex technologies have deepened the tacitness of algorithm conspiracy, and algorithmic dictatorship and data black-box have resulted in information asymmetry, increasing the difficulty of identification, law enforcers do need to understand the role that the design principle of algorithm plays in the conspiracy.

### **4.2. No clear legal basis for monopolistic behavior**

Data monopoly is a kind of monopoly based on occupation and utilization of data and monopolistic behaviors in relation to data have developed new forms of manifestation other than the traditional ones and how to identify and control these new monopolistic behaviors has not been covered by the anti-monopoly law.

In the data market, some operators enter into the monopoly agreement by algorithm. The existing anti-monopoly legislation lacks the capacity to respond neither to such new nominal monopoly agreement not requiring for signing by competitors nor to the contactless method of conspiracy. Such acts involving abuse of market dominant position in the data market can be classified into two types: one is the data monopoly established on the basis of special flow resources, where the leading enterprises use system or technology to block middle and small enterprises from obtaining critical data. Such monopoly resembles the natural monopoly to some extent and is rather difficult to be regulated by the traditional competition rules. (See Yang Dong, Li Zishuo. Treating Data Monopoly Prudently[J]. China National Conditions and Strength. 2019,8) The other is the blocking of consumers' search by the dominant platform, which results in complete elimination of competitiveness on both sides of supply and demand and make platform the only informed player. (See Qu Chuang, Liu Chongyang. Chinese Pattern of Internet Platform Economy[J]. Research on Financial and Economic Issues. 2018,9.) In recent years, platform enterprises occupying massive data resources have undergone frequent mergers, and the concentration of operators then leads to concentration of critical data resources. The possibility of newly merged enterprise directionally implementing anti-competition behaviors by taking advantage of their big data dominance may not be eliminated, (Xiong Hongru, Platform Monopoly in Development of China's Digital Economy and Corresponding Governance Strategy[J]. 2019,7) and the platform enterprises may use their strong bargaining power to damage the interests of consumers and upstream and downstream enterprises.

In the past, many people believed that technology is objective and neutral. However, it turns out that it is impossible to realize neutrality through technology and the profitability of platform enterprises also renders it difficult to observe neutrality, which calls for timely and effective regulation. As there are more and more new types of monopolistic behaviors, the traditional anti-monopoly legislation fails to include such into regulation, resulting in lack of specific legal basis for identification, punishment and control of data monopoly and the embarrassing situation of having no law to observe in anti-monopoly enforcement.

#### 4.3. Dual behavioral effects of data concentration

In the big data market, data has become a production factor as it can be concentrated and collected in large amount and can create value. Therefore, it should be encouraged from the perspective of developing productivity. In other words, those dominating in the data market do not necessarily cause monopoly. On the other hand, the excessive concentration of data may also impede or stifle the fair competition in data market and give rise to occurrence of data oligarchs, which is not conducive to the development of start-ups. Therefore, the anti-monopoly enforcement regarding data market shall be implemented in accordance with the principle of moderation and the principle of reasonability shall be adopted to coordinate such four relationships as data sharing and data exclusivity, data protection and data innovation, data efficiency and data justice, and market mechanism and government mechanism, (Yin Jiguo, Theoretical Logic and Basic Method of Anti-trust Regulation Concerning Big Data Market[J]. Political Science and Law, 2019,10.) which calls for the anti-monopoly enforcement authorities to take full advantage of their discretion, carry out careful analysis in specific cases, and make comprehensive consideration and reasonable assessment. In a word, the enforcement level of anti-monopoly enforcement authorities shall be improved.

### 5. Conclusion

The Anti-monopoly Law of China still lacks relevant experiences and understanding of monopolistic behaviors in the era of digital economy, but the substantial damage caused by the widely-existed monopolistic behaviors realized through use of data to the competition shall not be ignored. How to identify the anti-competition effects of such behaviors, how to provide effective institutional support for anti-monopoly regulation on data economy, and how to offer valid order guarantee for corresponding competitive behaviors still require much study and research.

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