Digital Platforms: Behavioral Features, Reasonable Classification and Policy Mix[①]

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1. The Relationship between Platform, Network and Data

Corresponding to the three revolutions in agriculture, industry and digitisation in the development of human society, the economic form has also experienced three major stages: agricultural economy, industrial economy and digital economy.

1.1 The Basic Features of Standard Digital Platforms

In the digital economy stage, digital platform is the typical form of enterprise organization and business model. A standard digital platform has the following basic features:

1) Both inputs and outputs in a platform are mainly data (or information), which is the digital nature of platform;

2) It brings the parties together for transactions (or matches transactions), which is the intermediary nature of platform;

3) It's a bilateral (or multilateral) market, which is the market nature of platform;

4) It depends upon the internet, which is the network nature of platform.

A platform is a standard platform if it has all the above four features; if not, it is a non-standard one. This is a precondition for the industrial classification, market determination and relevant policies studies of platforms. In addition, many platform enterprises exist and operate in a form of platform group. Naturally, all platforms do not operate under the same model. Thus, a one-size-fits-all policy or measure should not be taken.

1.2 The Complicated Relationships among Platform, Network and Data

As shown in Figure 1, the trinity relationship among platform, network and data is

complicated.

First, there is a horizontal relationship among platforms, networks, and data in addition to a vertical relationship among them. On the same coin, there are two sides: one is the inter-connection and inter-access (or inter-operability) at the physical or technical level; the other is the voluntary transactions and reasonable charges at the economic level. Of course, neither should be overemphasized at the expense of the other. However, industrial regulators often focus on the former while ignoring the latter; whereas market regulators often focus on the latter while ignoring the former.

Second, the relationships among them overlap and involve multiple regulators (in charge of cybersecurity, privacy protection, data IP protection and other matters). Thus, it may easily cause "regulatory inaction due to overlapping jurisdictions".
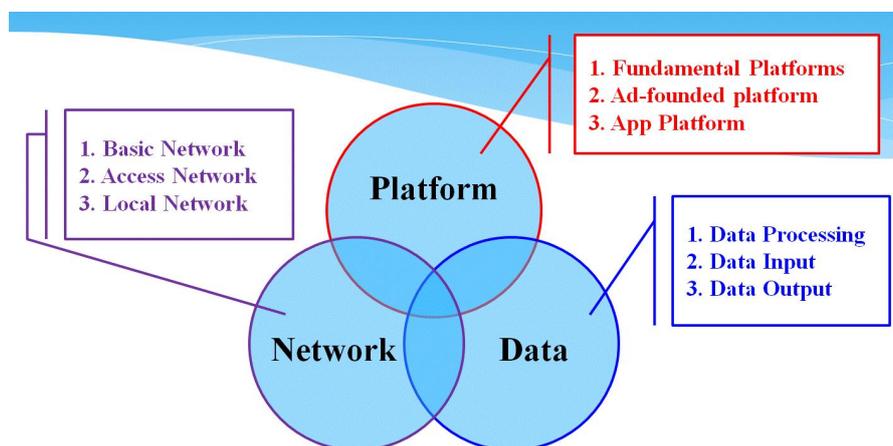

Figure 1 The trinity relation among platforms, network and data

2. Industrial Classification and Market Classification for Platforms

In digital economy, both economic statistics and policy implementation are based on scientific classification of platforms. In theory and in practice, there are two methods to classify platforms: by industries (or industrial orientation), and by markets (or market orientation). The two methods are very different from each other in usage. For government regulators, industry classification is a basis for making industrial policy, and market classification for competition policy.

2.1 Industrial Classification for Platforms

In 2017, China revised its National Industrial Classification Code, in which the internet and related services are classified as Cat. 64, as shown in Table 1.

Table 1   Industrial Classification for Platforms[①]

64			Internet and Related Services
641	6410		Internet Access and Related Services
642	Information Services	6421	Search Service
		6422	Game Service
		6429	Other Information Services
643	Digital Platforms	6431	Production Service Platform
		6432	Life Service Platform
		6433	Technology Innovation Platform
		6434	Public Service Platform
		6439	Other Platforms
644	6440		Security Service
645	6450		Data Service
649	6490		Other Services

This industry-oriented type of platform classification is of practical significance for industrial policy because it is useful to make classification statistics by national or local authorities for survey. However, it is of limited and deviated significance for competition policy. It has three limitations. First, it may be easily misunderstood because digital (or internet) platform is a narrow and deviated concept. Second, it cannot reflect the diversified business operations of platform enterprises because such classification is based on an outdated concept of dividing services into production and life. Thus, it has severely lagged behind the development of digital economy. Third, more importantly, because "industry" is not "market", this industry-oriented classification is far from the market-oriented platform classification. Thus, it is not only totally unsuitable for studying the market structure and platform behaviors in digital economy, but also unhelpful to implementing competition policy.[②]

2.2 Market Classification for Platforms

According to the need of competition policy, digital platforms can be divided into many kinds of classification. For example, the classification shown in Table 2 can be

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[①] See Table 2 of this paper.

[②] Author's note: The similar questions have not been resolved in the "Statistical Classification of the Digital Economy and Its Core Industries" promulgated by China's National Bureau of Statistics in June 2021.

used to explain many important policy questions.

Intermediation nature is a unique fundamental nature of platform. It is reflected in the business models of digital platforms. From the perspective of competition policy and according to the influence of such intermediation nature and the features of corresponding business models, all digital platform enterprises can be divided into three types: infrastructure platforms, ad-based platforms and general app platforms.

Table 2　Market Classification for Platforms[①]

Type	Standard Platforms		Business Model
Type I Infrastructure Platforms	Infrastructure Network	China Mobile, China Telecom, China Unicom	Charge on connection: network access fee, network traffic fee
	Broadband Service	Founder Broadband, Tianyi Broadband, Netcom Broadband	
Type II Ad-based Platforms	Search Engine	Baidu, 360, Sougou, Google, Bing	Charge on single side: one side for free, the other side for ads fee
	Social Media	WeChat, Weibo, Blogs, Twitter, Facebook	
	E-mail	Netease, Sina, Yahoo, Google	
	Maps Navigation	AutoNavi, Baidu, Tencent, Beidou, Google	
	Web Portal	Sina, Netease, Sohu, Tencent, Google	
Type III General Application Platforms	E-Commerce	Tmall, Taobao, JD.com, Dangdang, Amazon	Charge on both sides: commission and brokerage fee
	Online Ride-Hailing	Didi, Meituan, Uber	
	Takeaway	Meituan, Eleme	
	Academic Search	CNKI, Wanfang Data, Elsevier	
	Online Travel	Ctrip, Airbnb, Zuzuche, Booking.com	
	Mobile Payment	Wechat Pay, Ali Pay, Apple Pay	
	Film, TV and Music	Youku Tudou, iQiyi, QQ Music, Xiami Music	
	Online Game	37 Games, Tencent Games, Netease Games	
	Storage and	Alibaba Cloud, Tencent Cloud, Baidu Cloud	

[①] See Table 3 of this paper.

Computing[①]		

3. Classification Features of Platforms and Policy Mix

3.1 Classification Features of Platforms

After market classification of platforms, it is clearer to understand the behavioral features of different platforms and the relevant regulatory policy requirements. For example, there should be a different treatment of "accommodative and prudential regulation" concept and a reasonable division between administrative agencies and courts in terms of anti-monopoly law application. In addition, although the 2nd type of ad-based platforms should be the key for anti-monopoly law enforcement, there have been no cases in this regard in China. In contrast, although the 3rd type of general application platforms should be mainly governed by court's application of such law, there have been an excessive administrative law enforcement and insufficient court's application of such law. The main contents of such classification features and policy mix can be seen in Table 3.

Table 3 Features of and Policy Requirements on Platforms

Platform Classification	Features of and Policy Requirements on Platforms
Type Ⅰ Infrastructure Platforms	Be strong in scale economy and obvious in natural monopoly. There is a big role for industrial policy to play. Competition policy should focus on regulation. The "network neutrality" principle is seldom applied. It is very difficult to correct the sequelae of industrial policy by competition policy.
Type Ⅱ Ad-based Platforms	Be prominent in network externality, large in cross-border leverage effect and strong in the impact of market dominance. There is a small role for industrial policy and a big role for competition policy to play. It is the key for anti-monopoly. There should be an active administrative law enforcement, no application of the "accommodative and prudential regulation" concept, and an emphasis on "network neutrality".
Type Ⅲ General Application Platforms	Be strong in diversified operation models and full in competition. There is little role for industrial policy to play. Competition policy should focus on the "accommodative and prudential regulation". There should be a prudent law enforcement by administrative agencies, an active application of law by courts, and an adherence to the "accommodative and prudential

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① Author's note: Storage and computing platform can also be classified into infrastructure platform.

regulation" concept all the time.

3.2 Policy Combination on Platforms

In China, there are two major types of regulatory policies on platforms: industrial policy and competition policy. In the long run, there is a wane-and-wax evolution trend between the two policies: industrial policy plays increasingly less important role while competition policy plays increasingly more important role. However, the two policies have different roles and effects on different platforms from horizontal perspective. The basic analytical framework for such roles and effects is shown in Figure 2, "two lines and three zones".

The key points reflected in this figure include: (a) for infrastructure platforms, industrial policy is the focus, and competition policy an assistance; (b) for general application platforms, competition policy is the focus, and industrial policy an assistance or even a deprecation; (c) the difficulty is the policy for ad-based platforms on which competition policy overlap industrial policy, making it very complicated to make a decision.

In conclusion, this paper suggests that China should "highlight the priority, take different policies and coordinate policies" in its regulation of platforms.
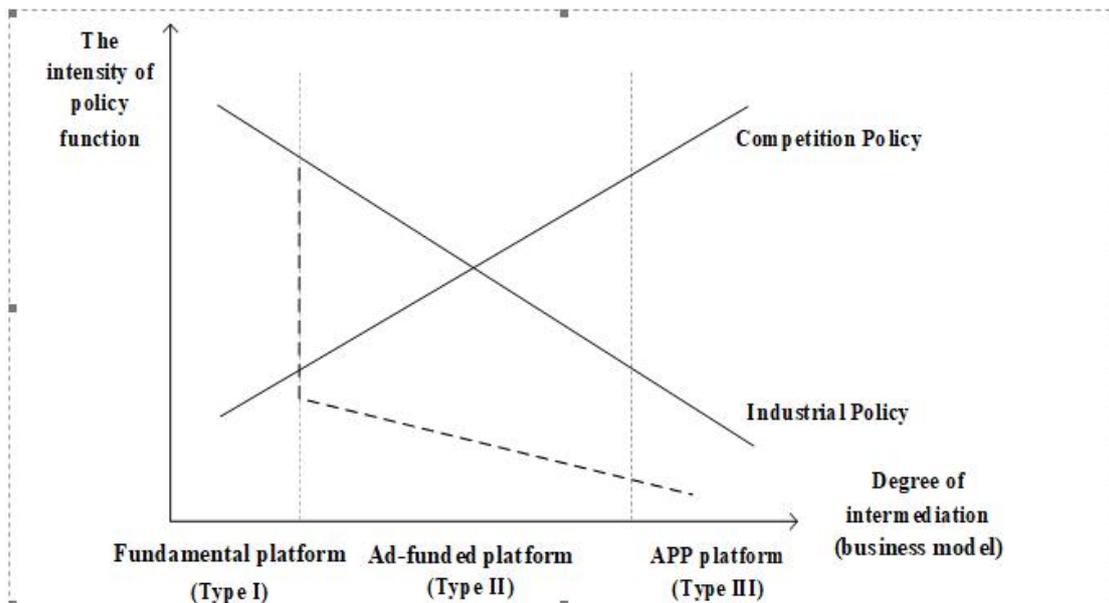

Figure 2 Diagram of Platform Classification and Policy Mix