



双边市场

shuangbian shichang qiye jingzheng huanjing de xin shijiao

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陈宏民 胥莉 | 著



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前言 企业竞争环境的演变

市场是个大舞台,无数的企业在这舞台上演义过,并正在演义着各种可歌可泣的故事。古人云,失败乃成功之母,确实有不少企业经过一次次的失败后终于获得了成功,站在聚光灯下接受着舞台下观众的欢呼。而今天我说,成功乃失败之母!君不见有多少企业经历了几番成功后,在最辉煌灿烂的时候轰然倒下,留下一片废墟和一片感叹。

有不少研究失败的学者在探讨成功企业失败的原因时,将其归结为管理层的决策失误,或者治理结构的僵硬等。而事实上,企业成功与失败的频繁转换往往可能源自于竞争环境的剧烈变化。一般而言,当竞争环境相对稳定时,企业总能从一次次失败的教训中找到一条正确的道路,因此失败便是成功之母;当竞争环境发生根本性改变,而企业还沉浸在往日的成功中,还习惯沿用原先的经营方式去做时,便成了刻舟求剑,原先种种导致成功的战略、思路和措施都成为导致失败的因素,成功就变成了失败之母。所以对企业竞争环境的研究是非常重要的。

对企业竞争环境的观察和研究可以追溯到两百多年前亚当·斯密的《国富论》。他的有关市场经济“看不见的手”的理论让人们自由经济的效率充满了信心。在这样的市场环境下,企业弱小而无助,不会对价格施行任何影响;消费者得到最大的满足;社会资源得到最为有效的利用和分配。

随后,人们发现,完全竞争的市场环境就如同物理世界的无摩擦状态那样,只是个理想世界,人们面对的还是存在着不同程度垄断因素的

市场。罗宾逊夫人、张伯伦等一批早期经济学家对市场中竞争和垄断问题进行了开创性的研究,人们对经济领域的微观部分的认识随之大大加深了。

随着研究的深入,对不完全竞争的市场环境有了进一步的认识,分解成为完全垄断、寡头垄断和垄断竞争这三种形式,并成为微观经济学对市场环境的标准性描述。产业组织理论也正是在对不完全竞争的市场环境的研究过程中发展起来,并逐渐从微观经济学领域独立出来,形成自己独立的研究风格。

从总体上看,传统产业组织理论没有打破主流经济理论中“理性”假设,研究方法也主要采取边际分析、比较静态分析、局部均衡等。后来,博弈论的应用加速了产业组织理论的繁荣,因为它特别适合对产业组织中非完全竞争市场进行分析。后来又随着信息、合约等概念和分析工具的引入,更大大增强了产业组织理论对现实的解释能力。

简略地看,产业组织理论的发展可以分成两个阶段。第一阶段是上个世纪 60 年代开始的,以结构学派和芝加哥学派为代表的传统的产业组织理论研究。结构主义的研究,以贝恩为代表,在经验性研究的基础上,将产业分成特定的市场类型:完全竞争、垄断竞争、寡头垄断和完全垄断,并开拓性地提出结构——行为——绩效的三分法(SCP 范式),以主流微观经济理论作为推论依据,主要采取实证研究的方法,强调市场结构对行为和绩效的影响作用。与此相对应的,以 Stigler、Demsetz 为代表的芝加哥学派,从价格理论基本假定出发,强调竞争的效率,提出了在长期均衡中的配置效率和技术效率。第二阶段的新产业组织理论则出现在 20 世纪 70 年代后期,得益于该时期可竞争市场理论、博弈论、制度经济、信息经济理论等分析工具的发展,新产业组织理论引进了这些新的分析方法,不再强调 SCP 范式中的直线式因果关系,并充分发挥博弈论在探讨垄断竞争、寡头垄断市场结构下厂商的策略性行为中的功效,能细致刻画和解释更加丰富的厂商间定价行为与广告、研发、质量等非价格竞争这些内容。

当今的商业现实中,新旧产业阵营以各自不同的方式为世界经济的发展做出贡献。长期以来,经济管理理论不断发展的动力之一就是其研究对象——产业和企业的发展与演化;理论正在不断创新以帮助人们理

解和认识周围的不断变化着的世界。回顾过去 30 年的《财富》500 强企业名录的变更,淘汰率从 20 世纪 80 年代的 30% 增至 2000 年的 54%,新经济时代的企业竞争越来越激烈,越来越多维化。学者们的研究发现,那些关乎国计民生的重要产业,诸如软件产业、银行卡产业、互联网产业、电子商务产业、传媒产业、百货零售业等,这些产业中的竞争已经不再是个体公司之间的竞赛,而是类似“商业生态系统”之间的对抗。比如 Windows 与 Linux 操作系统之间的争夺,是集合操作系统、应用开发商、计算机制造和服务商的两个商业生态系统的对抗。这些产业虽各有特色,但却都具有某些共同的特征,即我们将为读者介绍的“双边市场特征”。

双边市场理论是进入 21 世纪后才引起学术界和产业界重视的前沿理论。这个理论一经提出,便得到学术界的积极响应,同时各种产业实践也纷至沓来。从 2002 年开始,在一些主流经济学和管理学杂志上,不断有这类研究成果发表, Jean Tirole、Julian Wright 等著名学者都纷纷投入到这个领域的研究中去。与此同时,国外学者诸如 Hagiu、Evans 等人已经在前期双边市场研究基础上,把研究成果应用于为企业提供战略咨询服务,并形成围绕“catalyst businesses”的一系列战略设计,已有相当数量的成功案例。

双边市场的研究,代表着对产业组织理论、企业战略管理等研究领域的视界的改变,即从传统的厂商——消费者的“价格—需求”研究转变为两个相互关联的平台厂商——双边用户的“价格—交易或交换行为”的研究,研究对象有的是长久运行在经济中的传统产业诸如中介、传媒、shopping mall 等,也有的是新经济中活跃的软件产业、支付卡系统等。应用双边市场视界,将会改变许多传统理论的观点,对企业管理、竞争策略和公共政策制定都产生深远的影响。

具有双边市场特征的产业,不再是由一类企业作为供给方和一类用户作为需求方所构成的单边市场,而是由一类平台企业提供平台服务,两类或者多类用户通过平台实现交换行为的双边市场或者多边市场。首先,双边市场上有一类平台企业,客户在其构造的服务平台上获益。其次,平台的客户分成两类或更多类型,平台向不同类型的客户提供性质全然不同的服务;平台与每类客户之间的供求关系构成一个并不独立

的市场,称为平台的一条边,所以称为双边市场或者多边市场。最后,平台的不同类型的客户之间存在交易或者交换行为(interaction),平台对各类客户的服务主要在于帮助他们完成交易或交换行为,或者提高这些行为的效率。比如,银行卡组织为商户和消费者之间的电子支付提供服务平台;大学为学生和教师的教学和科研活动提供服务平台,等等。

双边市场理论是进入 21 世纪后才引起国际经济学界和产业界广泛重视的新理论,是基于网络外部性理论和多产品定价理论而发展起来的对相当一类产业进行研究的新学说。

有许多产业具有明显的双边市场特征,无论是新兴的电子支付、网上购物、软件产业,还是传统的传媒或中介产业,都是如此。初步的研究发现,这些产业中企业的价格选择、产品数量和质量选择、兼容性选择等策略以及政府对这些产业的规制政策都难以用传统的市场分析理论来加以解释。

从 2004 年开始,我们的研究团队在网络外部性研究的基础上开展对双边市场理论的研究。一方面,我们保持与国际理论界的密切交流与合作,努力实现与国际学术界的同步;另一方面,我们深入调查一些典型的具有双边市场特征的产业,如电子支付产业、操作系统产业、中介产业、传媒产业和正在兴起的电子认证产业等,力图从产业实践中获得新的研究热点。仅 2006 年,我们就先后邀请 Andre Hagiu(美国哈佛大学商学院)、Julian Wright(新加坡国立大学)、谭国富(美国南加州大学)等在双边市场研究领域享有盛誉的学者来访,开展深入的学术交流。同时,也在各种国际性学术会议,如“2005 Summer Workshop on IO and Management Strategy”、“2006 远东计量经济年会”等上介绍我们的研究成果。2006 年 6 月,我们举办了“06 产业组织理论研讨会”,邀请国内外一些著名学者就网络外部性与双边市场的研究成果进行了交流。2006 年底,我们又一次获得了国家自然科学基金的资助,从事双边市场研究。^① 本书则综合反映了我们这两年来的一些初步研究成果。

本书是研究团队的智慧结晶。全书的结构与主要内容都经过了研

① 国家自然科学基金项目“具有双边平台特征的产业中平台企业竞争策略研究”(70672070)。

究团队的反复讨论,主要观点反映着团队的共识。第1章由陈宏民撰写,第2章由陈宏民、胥莉、李泉撰写,第3章由胥莉撰写,第4章由程贵孙撰写,第5章由胡雯瑾撰写,第6章由李泉撰写,第7章由曹玉婷撰写,第8章由唐卫俊撰写。胥莉负责协调理论篇的内容,李泉负责协调案例篇的内容。陈宏民统编了全书并撰写了前言。

纵观经济管理学科的发展,理论永远在追逐着日新月异商业实践,无论是学习型组织的提出,还是蓝海战略的实施,都是如此。双边市场理论就是随着产业发展演化而诞生的一种观察企业竞争环境的新视角。这种新视角大大开阔了我们的研究视野,丰富的研究素材让我们每个人感到无比兴奋。我们正是在这种学术冲动的感召下,不断探索双边市场的理论精妙和实践奇幻。我们在此向大家介绍这一理论,正是希望与广大学者和相关业内人士分享这一理论盛宴,吸引更多的学者投身于双边市场的研究,鼓励更多的管理者应用双边市场理论去制订竞争战略,共同推动中国经济的繁荣和中国企业的发展。

Abstract

Industries in both traditional and new economy have been contributing to the world's fast growing economy in different ways. The engine for the everlasting achievements of management and economic theories is the development and evolution of enterprises and industries, and theories give us a better understanding of the world we are in. In retrospect to the 500 Top Enterprise List in the past 30 years, it changed every year. Especially in the new economy era, competition between different enterprises is becoming more and more intensively after 1980s. Based on the empirical evidences, some researchers found something interesting that was paid little attention in such fundamental industries as software industry, internet industry, payment industry, electronic commerce, media and etc. Competition here is no longer on the firms' level; instead, they compete as a business ecosystem. For example, the competition between Windows and Linux (Operation System) depends mainly on how they coordinate all the other entities like application developers, OEMs and after-sale service providers. Despite their respective characteristics, these industries share some commons, which is what we will introduce to our readers "the Two Sided Markets (TSMs)".

The theory of TSMs is received lots of attention after the late 1980s both from business and regulation practices. Since 2002, related papers

have been published in top economic and management journals. Renowned scholars like Jean Tirole, Mark Armstrong, Julian Wright and etc. contribute a lot to the development of the theory of TSMs. Some of them even put theories into practice, doing consultation on competitive strategies (for what they call Catalyst Businesses).

Roughly speaking, one-sided market is focused on “Merchants-Customers” relationship based on pricing and demand. However, two-sided markets deal more with a kind of typical entities called two-sided platforms (TSPs) and focus on the coordination of interactions between the two-sided users. Some of the TSPs are traditional ones like media, intermediate agencies and shopping malls, while others like software industry and payment system which feature the new economy. Applying all the new viewpoints of two-sided, we can get a better understanding of issues associated with TSPs, which will have huge implications for business strategies and public policies.

What is “two-sided markets”? Firstly, there are TSPs, based on which interactions between different parties have happened and both sides benefit from the interactions. Secondly, users on different sides of markets (two or more) are different in terms of what they need from the platforms. Platforms offer products or services to users and each pair of supply-demand relationship form a market. These markets demands are inter-related. That’s why two-sided markets (or multi-sided) matter. Finally, the interactions between different sides of users are coordinated by platforms. The latter improve users’ benefits by increasing the efficiency, etc. Like Visa or Master Card (platforms), they offer the payment system for merchants and purchasers (users). Or even universities can be regarded as two-sided with organizing professors teaching and students studying.

Two Sided Markets: An Innovative Viewpoint for the Research of Enterprises’ Competitive Environments is the teamwork of researchers on Research Center of Industrial Organization and Technology Innovation, School of Economics & Management, SJTU, China. Based on our previous research on network effects, this book offers a detailed introduction

of current development on TSMs theories. Based on that, surveys on several typical industries are well formed to illustrate the operation model and characteristics respectively. We try to make the readers get a better understanding why two-sided matters and what its implication and application on practice.

This book is divided by two main parts: Theory and Case Study. Theory comprises three chapters; they are Introduction, Theoretical Framework and Literature Review. In Chapter 1, we give a clear definition on TSMs and the operation model of TSPs, and analyze the reasons of formation of TSMs theories from both business practices and economics theories development. Chapter 2 extends the characteristics and structures of TSMs and compare two-sided with one-sided. Systematic literature review on the current researches is presented on chapter 3 and several interesting topics have been chosen to induce an intensive discussion.

Theory is followed by delicate empirical studies, and the second part we have five chapters focusing on Bank card industry, Media industry, Intermediate industry, Operation system industry and Third-party Certification Authority for online banking. They range from traditional to new economy, from Chinese burgeon-ons to multinational giants. We want to illustrate the empirical motivations for TSMs theories and some interesting issues that theorists might find something interesting to study. The contents of the book are organized as follows.

Part I : Theory

Chapter 1 Introduction

Basics and operation model

Motivations: Business and regulation practices

Some business practices are hard to be rationalized by traditional economic theory. For example, Microsoft gives away application tools to application developers for its Windows system while its strategies for Xbox gains its lion share of revenues from game developers instead of game players. Paypal offers free payment service for buyers but charges

sellers, not vice versa. Such kinds of pricing, product design and competitive strategies are so difficult to understand from traditional theory which is a world of one-sided market. Meanwhile, regulators and antitrust authorities face the same challenge on dealing with Microsoft case, Visa case, etc. Sometimes what they verdict to be predatory pricing turns out to be harmless to social welfare.

Theoretical foundation

The two theories TSMs theory based on are network effects and multiproduct pricing. Based on our center's previous research results on network effects, we complement their impact on TSMs theory.

Chapter 2 Theoretical Framework

2.1 Definition

We analyze the dilemma in offering a standard TSMs definition as a principal to determine whether two-sided or one-sided. In this book we comment on two typical definitions on current literature. One is based on pricing structure that is firstly raised by Rochet & Tirole. In their paper they illustrate the non-neutrality of platforms' pricing. But their "per-interaction price" is not the real price instruments utilized in reality and it is hard to monitor the transfer payment between two-sided users. So it is hard to use this definition. The other is based on cross-group externality which is more often used by Armstrong et al. Externality is easier and more direct for understanding while the expression of this kind of externality and endogenous problems make this definition far from perfect either.

In this book we also offer our definition. It is based on the clarification of platforms and users in the first step, and then focus on the characteristics of interactions between users. It serves as an important evidence for classification of TSMs later.

2.2 Characteristics and classification

There are three types of entities in this book, i. e. one-sided markets, single network markets and two-sided markets. And we compare the differences among them. For example, the complementary concept in one-sided markets is based on complementary products to realize a repre-

sentative consumer's utility. In single network markets, the direct and indirect network externality is different from those of two-sided markets, which are complementary between different inter-related markets. To some extent, such cross-group externality analysis enriches the research on the traditional network effects.

Another popular issue platforms deal with is multihoming. When competition between different platforms is analyzed, multihoming can have a huge implication on their strategies. That's the point previous researchers paid less attention to.

In terms of platform pricing scheme, it is the results that combine the characteristics of elasticity, cost and externality. The subsidies between different sided market users, sometimes even free on one side, are common technique platforms use. For that the platforms operate on more than one market, the effect of competition on pricing becomes more complexed; or interpret in another way, the reasonable pricing strategies for platforms are enlarged.

In order to make a better understanding of TSMs, we also offer well organized classifications. Different kinds of classification principles are applied: technology characteristics, platforms' functions, complexity of structures, organization structure and interaction types.

2.3 Comparison with traditional markets

The entities TSMs deal with is not the new at all. TSMs viewpoint sometimes offers different concepts for us to think over the reality. We analyze why the differences come from, which we mainly focus on the relationship between price and cost, the effect of competition on social welfare, "Chicken & Eggs" puzzle and cross subsidies.

Chapter 3 Literature Review

The current literatures on TSMs are the combination of multiproduct market and network externality researches, beyond which form an independent theoretical field. Competitive strategy analysis, industrial organization, game theory and empirical study have been utilized till now. Our literature review tries to give a comprehensive one on current TSMs re-

search, especially highlighting the differences between what we know from traditional economic theory.

First, the pricing strategies for TSPs are summarized which have been perceived as the most robust results turns out from. We summarize the characteristics of pricing from three aspects: monopoly and efficiency, strategic pricing and skewed pricing, pricing instruments and equilibrium. The specialties here are that on the one hand one cannot split the two-sided markets, and on the other hand marginal cost pricing is far from efficient, instead the demands characteristics should be considered well. As for competition, due to multi-markets and interrelated demands, the effects turn out to be ambiguous. We focus on the product differentiation, strategic behaviors, etc., outlining the competition in TSMs. The third part in our review is about the adoption problem, which is not thoroughly studied in current research. But it is vital for business practice especially start-ups to begin their business in the new economy. We tried to summarize the principle on which side the platform should attract first and its implication for future competition. The last part deals with the current empirical studies. Nevertheless, the theory for TSMs is still immature and data collection is not an easy task, we predicted some promising topics on empirical studies on the basis of recognition of the status quo.

However, from the reviews, we find that the researches till now are more industries specific and stylized to different settings. The general principles on TSMs are not quite built yet. Based on this, we picked out some representatives, analyzing their model setting, assumptions and results. We choose the papers like Baxter (1983), Rochet & Tirole (2002), Armstrong (2004) and Doganoglu & Wright (2004).

Part II : Case study

Chapter 4 Bank card industry

Bank card industry offer customers new way of payment, organizing

card issuing and acquiring. It relates to two sided users: merchants and customers. In this chapter, we first introduced the international bank card industries: market concentration, local structure and product lines. And the competition between different brands is analyzed as well. In special, we surveyed the China bank card industry development and the effects of the establishment of China Union Pay in the industry.

As a typical example for TSMs, we analyze the characteristics like cross-group externalities between customers and merchants. Also the interchange fee mechanism card associations used differentiate it from other TSMs examples. We analyze the interchange fee from its leverage function, its ability to balance issuing banks and acquiring banks, and adjusting the needs of customers and merchants. Besides, the regulations in this field all over the world are hot topics too. So based on the current antitrust issues of Visa, comparison between different antitrust practices is done on this chapter.

Chapter 5 Media Industry

Media industry has its long value chain and full coverage over information services and culture. Here we use newspapers, TV, broadcasting and internet as the main examples, with the consideration of both traditional and new media.

Through the case study, we found that some commons in TSMs also applied to media industry, while the latter shows other particulates for further research. First the ads supported media have multi-sided like ads agents, viewers and content developers. The cross-group externalities are asymmetric among different sides and even negative externalities exist.

We analyzed the different multi-sided pricing strategies for media and took i-mode as an example to illustrate how the negative externalities influenced the media competitive strategies. Last but not the least, we talked about the interesting topics such as new media issues and multi-media competition that have not been studied yet.

Chapter 6 Intermediate industry

Intermediate industry covers a wide range of businesses as well. So we took real estate agency and E-commerce as the representatives. Commonly, the intermediate will connect buyers and sellers and facilitate the trade between them.

We did a preliminary empirical study here on multihoming and pricing. In summary, the less the information sharing is, the more the incentives for users to multihome between incompatible networks. And for a specific profit maximizing agency, price instruments are important between flat fee and usage fee based on trades between users. Such problems as investment and differentiation strategies are the point to obtain competitive advantages. Here we offered a detailed data set on real estate agencies and E-commerce.

In addition to that, we surveyed the E-commerce platforms in China and compared them with world renowned ones from pricing, function, market specifications. Using the popular case eBay, we traced the evolution of its pricing for buyers and sellers, its ownership design, etc. Finally, we talked about new issues like the mergers between platforms of different forms, platform innovation in this industry.

Chapter 7 Operation system industry

Operation system industry is a special kind of TSMs. The OS firm (platform) offers customers operation system like Windows or Linux, while it licenses application tools and interfaces to application developers. But the OS is the essentiality for the use of application software which is studied on traditional economic theory. But the coordination between customers and application developers by OS through different pricing scheme has not raised enough attention till the debut of TSMs theory. But the complementarities between OS and application software differentiate OS industry from other TSMs examples.

Based on this consideration, "Chicken & Eggs" problems become especially typical here. Different timing of the participation of customers

and developers will result in different pricing equilibrium. And we find it interesting enough is that one firm can set two opposite pricing scheme for their two kinds of platforms, taking Microsoft's pricing for Windows (PC OS) and Xbox (game console) as the example. Besides, there are competitions between proprietary and open-source operation system. The choices of compatibility between different platforms are also studies for its implication on competition. Similar as the other parts, we surveyed OS for PC and cell phones on their market structure, pricing status, etc.

Chapter 8 Third-party Certification Authority for online banking

This case is a typical Chinese issue. In addition to that, it is still on its infancy. Our purpose is to use the TSMs framework to better understand the mechanism of the industry and its evolution process. Foreign counterparts set good examples for us. In this chapter, we summarize the current development of China online banking services and formed a prediction on the role and function of the newly established China Financial Certification Authority (CFCA). We offered tentative suggestions toward this emerging platform and predict its evolutionary process.

In all, case study in part II is the application of the theory in part I and provides a bunch of interesting issues for future researches. The two-sided markets theory is the necessity of the fast pacing economy growth, which helps us get a better understanding of what is going on around us. The business practices are far more abundance than we can illustrate here. Through this book, we want to share TSMs insights with researchers both home and abroad, encouraging more to indulge in the TSMs researches. And as for business practitioners, especially for Chinese managers, they will find it a useful tool to establish business strategies to cope with ever-changing competitive environment.