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Different Evolutionary Paths: Understanding the Chinese Platform Business Group Model

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Abstract:

The current understanding of platform expansion is based upon the experience of US West Coast firms. China, with its largely protected but enormous internal market, provides an ideal "experiment" for examining how platform business models might develop different evolutionary trajectories in different environments. Based upon a study of the two largest platform firms, Tencent and Alibaba, and the far smaller but dominant Chinese online travel agency platform, Trip.com, we demonstrate that a different business model has emerged. In contrast to the West Coast model—in which the expansion occurs through internal development and introduction, acquisition, and venture capital investment—Chinese firms have employed two other strategies. The first is listing some of their existing operations separately on the stock market (what we term "selling off") but not giving up control. The second strategy is interfirm cross investments. The use of these two strategies has led to the formation of an organizational form, that we term the "platform business group (PBG)", which extends and transforms the existing Chinese business group model.

We discuss the environmental conditions that enable PBGs to pursue business strategies in a different manner than their Western counterparts and to identify the key conditions that allowed the PBG model to develop. Our extension of platform studies to China enriches and extends theoretical and practical understanding of Chinese platforms. Finally, we discuss the difficulties that PBG firms face in employing their business model internationally.

Keywords:

China, business group, platform business group, platform economy, Alibaba, Tencent

1. Introduction

Firm growth is a key topic in organizational studies that primarily explores the expansion of organizational size, measured by assets, sales volume, lines of products and services, and so on (Penrose, 1959). Starting with Peng and Heath (1996), the growth of firms in emerging economies (EE) has received increasing attention in the past two decades. One question that scholars considered was whether EE firms had developed unique growth strategies or they generally followed the growth paths employed in developed economies (DE) (Mathews, 2006; Peng et al., 2017). Based on the classic three-strategic-choice model, including organic growth, acquisition, and network expansion, the extant literature debated the potential uniqueness of EE firms' growth strategy (Peng, 2012; Pinkham & Peng, 2017).

The nearly single-minded focus on Western, in particular, US West Coast firms, is noteworthy, as non-Western platform firms are operating in many countries, especially China (Evans & Gawer, 2016). More recently, interest in the globalization strategies of platform firms has grown, as has interest in platforms in EE, especially China (Stallkamp & Schotter, 2019). However, this interest does not include examining whether the Western platform organizational model is consistent across economies. It may have been reasonable to ignore platform business models developed outside the West five years ago, but now Chinese online platform giants are among the most valuable firms in the world and serve hundreds of millions of users. Yet the literature continues to explain China's digital platform business models using the classic model (Cusumano et al., 2019; Parker et al., 2016). This paper poses the question of whether Chinese

online platform firms have adopted a typical Western business model or have evolved a different one that is more suited to the Chinese environment.

The increased centrality of platform firms in the platform economy is based on the unique economics of digital platforms, which benefit from network effects that, under normal conditions, lead to winner-take-all or -most markets (Kenney & Zysman, 2016; Parker et al., 2016). After such firms become successful, they benefit from powerful lock-in. To achieve this outcome, platform owners often subsidize various sides of the market as they endeavor to attract users and complementors and build ecosystems, in which other entities build their own businesses (Cusumano et al., 2019; Cutolo & Kenney, 2020; Eisenmann et al., 2006; Jacobides et al., 2018). The expectation is that the economic dynamics of network effects, winner-take-all markets, and so forth are universal and that the resultant industrial structures are consistent across all countries. Thelen (2018) showed that the political acceptance of Uber in Western European countries varied. In contrast, we explore the differences in organizational forms or models that emerged in the two largest political economies.

The current thinking about how online platform firms grow is based almost entirely upon the experience of West Coast firms, with one exception being studies of Japanese iMode mobile telephony (Funk, 2009; Tee & Gawer, 2009). We show that Chinese platform firms have developed the PBG model, which differs significantly from the business models of the West Coast platform firms.

To explore the differences, we describe the structure and evolution of Chinese platform firms. We suggest that Chinese firms adapted the existing Chinese business group structure to

form the PBG model. By building alliance structures that include firms not directly owned by the dominant platform and selling off internal divisions,[1] Chinese platform firms can address challenges particular to their context. Our study examines two Chinese firms that have become dominant since the rise of the mobile internet—Tencent and Alibaba—and a smaller but also dominant vertical platform firm, Trip.com (formerly Ctrip), the largest Chinese online travel agency (OTA) platform.

The PBG model emerged in the Chinese environment of cutthroat competition, weak intellectual property rights, remarkable growth in mobile internet use, and weak infrastructure. This environment encouraged ferocious oligopolistic interfirm competition in which the two Chinese platform giants compete directly in many different sectors. This differs from the US West Coast platform competition, in which, in most segments, one firm (or two) achieves a dominant market share and leaves little room for new competitors to enter. For example, Google is dominant among search engines, with the remaining market share largely held by Bing, owned by Microsoft. The Chinese market structure can offer new insights into how different evolutionary paths may be possible, thus providing evidence that the growth model adopted by platform firms can vary based on the political economic contexts in which they operate (Autio et al., 2014).

The paper is organized as follows. Section 2 develops the theoretical foundations undergirding platform owners' growth strategies for creating structural advantages. This is

[1] We use the expression "sell off" deliberately, as these are not spinoffs, in which all the stock is returned to shareholders and the firm becomes a fully independent firm with no continuing relationship to the original firm (Han & Qui, 2012).

followed by an overview of the US and Chinese competitive environments in Section 3. Section 4 describes the growth models of Tencent, Alibaba, and Trip.com and demonstrates how they use the PBG structure. This is followed by a discussion of how the Chinese case broadens our understanding of platform dynamics and whether the PBG model can succeed outside China, where they must unseat US incumbents in Section 5. Section 6 concludes by exploring the possible reasons for structural differences between Chinese and US firms.

2. Theoretical Foundations

2.1. Platform Firm Growth

The research has identified three major growth strategies for firms in general: organic growth, acquisition, and network-based expansion (Penrose, 1959; Williamson, 1975; Peng & Health, 1996). Some argue that network-based expansion is more likely to be used by firms in emerging markets and that expansion differs from the other two strategies as it emphasizes that firms build network relationships, usually informal, with other entities, while remaining independent (Peng & Heath, 1996).

In the commercialization of cyberspace, firms such as Amazon initially engaged in ecommerce through their websites. Since then, a dominant business model has emerged in which an online platform provides access to customers and various boundary resources, including application programming interfaces, software development kits, and technical assistance to a large

population of firms (complementors) that transact across the platform.[2] Platform owners are faced with the challenge of striking a balance between sustaining their power while providing resources to and extracting value from their complementors.

In both China and the US, a few mega-platforms have emerged that own multiple platforms, with multiple ecosystems. In addition, many platforms operate in verticals, such as Booking.com in travel and Yelp in local business reviews. The key to creating a platform capable of extracting value is to attract and lock in users and complementors. If these network effects are sufficiently powerful, the results are winner-take-all/-most lock ins. With a service such as payment, it is unclear how to unlock credit card companies' power and create a viable substitute. In the US, PayPal and other services have been unable to displace the existing payment incumbents, Visa and MasterCard.[3] In contrast, in China, Alipay and WeChat Pay have become platforms that are accepted more widely than credit cards. As a result, these payment systems compete directly with the Chinese banking system (Klein, 2020) and thus portend a powerful platform-driven disruption.[4] Only recently, with the introduction of Apple Pay and various Android products—which are still linked to credit cards—have US mobile payment systems begun to gain

[2] Of course, the online platform was not the first platform model. As Cusumano and Yoffie (1998) point out, the Microsoft Windows operating system and game platforms had already developed a platform business model.

[3] Apple Pay is achieving significant success, though it is connected with credit card firms, as is the case of Samsung Pay, which is used on Android phones.

[4] K. Zhai and J. Zhu, China's central bank urges antitrust probe into Alipay, WeChat Pay, Reuters, July 21, 2020, https://www.reuters.com/article/us-alipay-wechat-pay-china-exclusive/exclusive-chinas-central-bank-urges-antitrust-probe-into-alipay-wechat-pay-sources-idUSKCN24W0XD/.

market share.

US online platform firms, such as Amazon, Google, Apple, Facebook, and Microsoft, have been called "conglomerates," as they have businesses in multiple markets (Walton, 2014). However, the classical definition of a conglomerate is a firm with non-interdependent operations managed through financial control. In contrast, an online platform firm is, at a minimum, bound together through use of the same data centers and multiple connections between apps. This can be seen in the ways in which Amazon interconnects Twitch and Marketplace, its advertising platform, as well as Kindle and other apps (Kenney et al., 2020). Yet, with the exception of Amazon and Microsoft, most US platform firms depend on a single-revenue model, though all are attempting to diversify their income streams. For example, Google's YouTube is emphasizing subscriptions to reduce its dependence on advertising. Google was initially wholly dependent on advertising, and in the second quarter of 2020, it still depended on advertising for 78% of its revenue (Alphabet, 2019: 8). The persistent centrality of advertising is remarkable, given that Google has added an enormous number of new services, including Android, Chrome, Cloud, Docs, Drive, Gmail, Maps, and YouTube. Facebook is even more dependent on advertising.

In general, US platform firms use acquisitions, organic growth, and venture capital investment in their expansion strategies. Consider Google's three major growth strategies. First, the motivations for its acquisitions vary—for example, it acquired Android out of a desire for expansion (Pon et al., 2014). Many acquisitions were used as extensions of existing services, such as the numerous acquisitions used to create and extend Google Maps (Kilday, 2018). It acquired others, such as, Waze to foreclose the emergence of a potential competitor. Second, Google

created new services by exploiting existing competencies in managing and searching for sources of big data. For example, in acquiring and expanding YouTube and Maps, Google relied on its existing competencies: the ability to store, search, and deliver vast quantities of data and to offer advertisements. In all its businesses, Google, like other platform firms, continuously adds new functionality. To illustrate, Google added public transit routes and, even more powerfully, Street View to Maps. Third, Google invests venture capital in startups, getting a first look at frontier technologies.

Amazon also used a variety of expansion paths, as well as internal initiatives, acquisitions, and venture capital investments. Established in 1994 to sell books online, it initially outsourced fulfillment to distributors but over time built its own logistics operations. Several key expansions—such as opening its website to third-party vendors in 2000, providing access to its logistics network third-party vendors, and offering its cloud infrastructure—were internally generated initiatives. Acquisitions often extended existing operations or allowed Amazon to enter entirely new fields, such as physical retail, by acquiring the grocery chain Whole Foods, and gaming, by acquiring Twitch (see Figure 1).

The strategies by the mega-platforms are copied by numerous smaller digital platform firms that operate in verticals. These smaller platforms operate independently and are not affiliated with other firms through stockholdings, however, they do interact. For example, Booking.com, Lyft, Uber, and Yelp all use Google Maps, but their operations have no relationship with Google beyond paying for its use. Moreover, each of these firms also uses acquisition, organic growth, and venture capital investment as a central feature of their growth strategies. US firms have not

engaged in selloffs or equity exchanges with independent firms.

2.2. China—Traditional Business Groups and the Platform Business Group

Business groups are meta-organizational forms composed of "firms which though legally independent, are bound together by a constellation of formal and informal ties and are accustomed to take coordinated action" (Khanna & Rivkin, 2001). Business groups have a long history as a growth model that fills the void created by the market and institutional failure in EE, particularly in Asia (Khanna & Palepu, 1997; Yiu et al., 2005; Carney et al., 2011). The member firms of business groups are independent but linked together through equity holdings, cross marketing their various products, purchasing from one another, and directing commerce to their various constituent members (Khanna & Rivkin, 2001). The three best-known examples are *keiretsu* in Japan, *chaebol* in South Korea, and state-owned enterprise (SOE) business groups in China. The horizontal and vertical *keiretsu* embedded in Japanese industrial organizations and business systems are both bank centered and rely on prevalent reciprocal holdings (Gerlach, 1992; McGuire & Dow, 2009). *Chaebol* and SOE business groups have close relationships with the government, which encouraged the formation of business groups as a mechanism for economic catchup (Lee, 2006; Lee & Jin, 2009).

The difference between a PBG and traditional business groups is that in the former a platform firm is the linchpin. This differs from the central fulcrum in traditional business groups: for *keiretsu* it is the main bank, for *chaebol* it is a family office, and for SOEs it is the government itself. Moreover, despite some exceptions, crossholdings do not form a network. Instead, they

often resemble a hub-and-spoke design in which the platform firm has bilateral relations with other members.[5] Additionally, given that state entities rarely have equity positions in PBG firms, PBGs do not directly leverage the government's resources and have no government-mandated role in promoting national development.[6] Despite these differences, PBG firms share some characteristics with traditional business groups, especially in terms of growth strategy. As summarized by Lee and Jin (2009) in writing about Chinese SOEs, PBGs also use acquisitions, selloffs, and equity investments to grow, which confirms our hypothesis that the political and economic context affects platform growth models.

3. The Setting

Chinese and US online platform firms are the largest and most valuable in the world,[7] and China and the US are the two largest and most valuable internet markets in the world. This section

[5] The most notable exception is the crossholding between Tencent, JD, and VIPshop, in which both Tencent and JD purchased equity positions in VIPshop. It is interesting to note that these firms are all publicly listed on US markets.

[6] To be certain, the government has been very attentive to and supportive of the success of Chinese platform giants (Plantin & de Seta, 2019).

[7] To illustrate, in July 2019, the Japanese ecommerce giant Rakuten was valued at $13 billion, while the Russian search giant Yandex was valued at $19 billion. In terms of stock market valuation, the most valuable competitors to the West Coast firms are Spotify, the music platform, with a valuation of $50 billion and US-based Booking.com (whose main revenue source is its European subsidiary, Booking.com, which is headquartered in the Netherlands), with a valuation of $69 billion.

briefly compares China and the US, as a basis for further analysis of the growth model of Chinese digital platform giants (see Table 1). We mainly focus on two aspects: the origins of the platform firms and the competitive environments in online markets.

<Table One here>

3.1. Origins of Platform Firms in the US and China

The dominant US West Coast firms all began in the era of the personal computer and transitioned to the era of mobile computing. Not surprisingly, online platforms have drawn upon their experience to restructure and evolve, and their current business models are deemed paradigmatic. Although the dominant US platforms originated in different segments of the information, communication, and technology (ICT) industry (Kenney & Pon, 2011; West & Mace, 2010; West & Wood, 2013), they all adopted similar expansion models. Apple was, perhaps, the most internally focused, making far fewer acquisitions and venture capital investments; most of its strategy was based on providing more services to its locked-in users. In contrast, Google, whose original business model was based on search, made critical acquisitions, particularly of online advertising firms and later purchased YouTube and Android. In addition, it grew by offering an increasing number of services that were developed as a combination of acquisitions and organic extensions, such as the Chrome browser, mapping, Scholar, email, Drive, and Google's Cloud services. Further, Google had an active venture capital investment program that allowed it to stay in touch with the newest developments by startups. Facebook acquired the smartphone-centric social media firms WhatsApp and Instagram. These acquisitions ensured that

Facebook would not be outflanked by these two potential competitors. Acquisitions were critical for the growth of these platform giants, and others, including vertical platforms such as Booking, Expedia, Airbnb, and Yelp followed suit, both to eliminate competitors and to extend their businesses.

In China, by contrast, a PC-based internet ecosystem also emerged but slightly later than in the West and at a smaller scale. China rapidly developed an enormous mobile phone market in relative isolation from the rest of the world and spawned a huge ecosystem of downloadable games and other services (Jin & von Zedtwitz, 2008). The introduction of the smartphone and open-source Android presented incumbent Chinese internet platforms with a massive opportunity. Whereas in the PC ecosystem, they were dependent on the Windows operating system, but with mobile phones they could use open-source Android and build their applications on top of it, avoiding the operating system bottleneck (Pon et al., 2015). They could then leverage this potential to expand horizontally into other sectors—many of which were not directly related to the platform's original businesses. As the Chinese platforms expanded, they adopted a "business group" strategy within which the platform firms forged alliances with independent firms, consummated through a cross-shareholding relationship.

3.2. Competitive Environments of Internet Markets in the US and China

Although competitive environments provide the basic conditions for platform firms to emerge and grow, they could also be considered the result of firm growth strategies. Therefore, an analysis of the environments of internet markets in the US and China allows us to better

understand the differences among digital platform giants in heterogeneous political-economic contexts (Autio et al., 2014).

Institutions are critical for structuring competitive environments. For example, over the past two decades, until recently, the US has been far less aggressive in enforcing antitrust law than it was earlier (Khan 2017). US antitrust policy does not prevent firms from developing a powerful market position. Thus, the winner-take-all dynamics in many digital markets, coupled with minimal enforcement of acquisition controls, has contributed to rapid consolidation in online digital industries in the US. Because of this laxity, US firms have been able to secure positions in various vertical market segments that range from powerful to nearly monopolistic. This lock-in can be so strong that even entry attempts by platform giants, such as Google or Apple, are not guaranteed to succeed. For example, Google+ failed to dislodge Facebook, Google Hangouts had limited success competing with incumbent programs, and Apple's counterpart to Google Maps did not gain significant market share, even though it is a preinstalled app on every iPhone. In the largely protected Chinese market, because antitrust is a relatively new concept in the market socialist society, antitrust regulations have received little scrutiny and enforcement, giving platform firms the ability to develop their own business models largely unhindered.

The US has had a continuous flow of entrepreneurial firms providing new services, all of which draw upon affordances such as cloud hosting and the ability to purchase advertising, though they are neither dependent on nor controlled by the dominant firms. To illustrate, Airbnb, Github (acquired by Microsoft), LinkedIn (acquired by Microsoft), Snapchat, Spotify, Tinder, Twitter, Uber, and other firms were launched independently and, with some exceptions, operate

independently. Nonetheless, acquisition has become a critical strategy for expansion or for the defense against entrants that could become competitors (Dolata, 2017).

Leading US firms not only become integrated horizontally but often try to become integrated either up or down the computer and software stack (e.g., Apple now designs its own chips for the iPhone and offers its own apps on its App Store). Another example is that Amazon built its own Android-based operating system (OS) for its (now failed) Fire phone (Karhu et al., 2018). The quintessential example is Google's expansion from search and advertising to both the OS for Chrome and Android. Facebook, which is younger than the other giants, has largely confined its expansion to messaging, video, and building an advertisement platform. These expansions often require significant technological capabilities, in sharp contrast with Chinese firms, which adopted open-source OS and built their businesses on top of them.

4. PBG Case Studies: Tencent, Alibaba, and Trip.com

The PBG model is the result of five expansion strategies: acquisition, organic growth, venture capital investment, cross-shareholding investment, and selloffs. In the following three case studies, we examine the ways in which each of these three firms has used these strategies to build their businesses.

4.1. Tencent's PBG Strategy

Before the mobile internet era, Tencent's core businesses were instant messaging, social

networking, and gaming. The first two of them have a huge user base, but games were Tencent's main source of revenue, as social network advertising in China was still incipient. Initially, Tencent made only a few domestic acquisitions, the most salient of which was Foxmail in 2005. However, it was active in purchasing and investing in gaming firms elsewhere (Jia et al., 2018).

For Tencent, organic growth was the most important; it developed instant messaging (QQ, WeChat), social networking (QQ Zone), gaming (Tencent Games), and payment (WeChat Pay) internally. Moreover, as these applications grew, Tencent constantly added new functionality. WeChat, which was released in 2011, was the most important internally developed platform. Because of its success, WeChat has come to be known as a "super app," that is, an app that has become a platform for other apps (Huang & Miao, 2020). It rapidly added social networking, news and entertainment, emojis, and other services. Perhaps, the best example of leveraging WeChat's platform is the introduction of the payment service WeChat Pay in 2014.[8] It added users extremely rapidly and increased its utility, benefiting from powerful network effects, as it allowed users to transfer money to one another. The rapid growth in users led merchants to accept WeChat as a payment system. By 2019, 38.9% of the domestic online payments were made on WeChat Pay, trailing only Alipay, which had 55.1%. Together, they formed a duopoly that controlled Chinese online payments.[9]

[8] Seven years of WeChat, https://www.techinasia.com/history-of-wechat/.

[9] I Research: The mobile payment market transaction scale in Q1 2020 is 56.7 trillion yuan, a year-on-year increase of 2.3%艾瑞：2020 年 Q1 移动支付市场交易规模 56.7 万亿，同比增长 2.3%, http://report.iresearch.cn/content/2020/04/321900.shtml.

Tencent made equity and venture investment in a wide variety of firms and industries and, as a result, integrated them into its PBG. Figure 2 exhibits some of the most prominent investments by Tencent. Firms were attracted to cross-investment agreements with Tencent and Alibaba because they could funnel traffic to those firms. Almost invariably, these alliances also enabled data sharing. For example, immediately after the Tencent-JD cross-investment in 2017, the two firms announced the launching of JD-Tencent Retail Marketing Solutions, which integrated "insights on consumer behavior from Tencent's social platforms with online and offline shopping data from JD.com and its brand partners."[10] Further, the firm claimed that it was "the industry's most comprehensive toolkit for understanding consumer shopping behaviors and enabled more precise target marketing and greater impact for brands."[11] Tencent leverages WeChat and now WeChat Pay as key assets in attracting other firms to join its PBG.

As is the case with other PBGs, Tencent sells off operations to public investors, thereby raising capital. In 2017, it listed China Reading, the largest online reading platform in China, on the Hong Kong Stock Exchange (HKSE).[12] ZhongAn, an online insurance company joint venture

[10] Companies to integrate insight from big data across offline stores, JD.com and Tencent social platforms to enable more precise marketing, https://www.globenewswire.com/news-release/2017/10/18/1148983/0/en/JD-and-Tencent-Change-the-Game-Again-for-Big-Data-Marketing.html.

[11] JD and Tencent Change the Game Again for Big Data Marketing, http://ir.jd.com/phoenix.zhtml?c=253315andp=irol-newsArticleandID=2309340/.

[12] The ebook publisher believes novels written by Chinese online authors could become a global cultural phenomenon. See https://www.scmp.com/tech/china-tech/article/2094424/tencents-china-reading-takes-first-foray-overseas-multi-language/.

with the Chinese insurance giant PingAn, established in 2013, was also listed on HKSE in 2017.[13] In 2018, Tencent Music, an online music service, was listed on the NASDAQ.[14] With each of these selloffs, Tencent garners capital from public investors that can be reinvested. However, these selloffs did not require Tencent to relinquish control.

As a result of these expansion strategies, Tencent has developed a complex business group strategy, illustrated in Figure 2. Tencent's PBG extends to many sectors, covering social networking, instant messaging, online-to-offline services, ecommerce, entertainment, the sharing economy, ticket services, and financial services. Its PBG includes firms outside China, particularly through its global gaming investment, resulting in a network of affiliated firms that give one another preferential treatment (Jia et al., 2018).

< Figure Two about here>

4.2. Alibaba's PBG Strategy

Alibaba is one of the most valuable platform firms in the world. As is the case with Tencent, it used all five PBG strategies in building its business. In the West, Alibaba's closest analog is Amazon, though with an evolutionary strategy. Alibaba has built numerous alliances and used

[13] Chinese online insurer ZhongAn wins HK approval for $1 billion IPO, https://uk.reuters.com/article/uk-zhongan-online-ipo/chinese-online-insurer-zhongan-wins-hk-approval-for-1-billion-ipo-sources-idUKKCN1BJ0GU/.

[14] Tencent to spin-off online music unit Tencent Music for US listing, https://www.scmp.com/business/companies/article/2154323/tencent-spin-online-music-unit-tencent-music-us-listing/.

spinoffs to raise capital—the most salient of which is the recent sale of its financial arm, Ant Group, on the HKSE. Alibaba has a huge PBG, which has made it one of the seven most valuable firms in the world.

In contrast to Amazon, which was first an ecommerce website selling from its distributors and warehouse to consumers, Alibaba began as an ecommerce platform that offered separate platforms for business-to-business, customer-to-customer, and business-to-customer commerce. Alibaba's early growth came from offering complementary services, such as an escrow account, discussed below (Zhang, 2020), advertising, and cloud computing. The introduction of the mobile internet dramatically increased the number of its customers, and the payment service expanded to offer smartphone-enabled payment, which was rapidly adopted by merchants—allowing Alipay to subsume what, in the West, was the credit card function. To service these functions, Alibaba rapidly built an enormous computing infrastructure and, following Amazon's example, began offering cloud computing as a service in 2009.

Alibaba also formed equity joint ventures. As the share of ecommerce transacted over Alibaba's platform increased, logistics became an increasingly problematic bottleneck (Wang & Xiao, 2015). Because of its rapidly expanding volume, in 2013, Alibaba formed the Cainiao Network, a joint venture among eight firms, six of which were logistics firms that had different geographic footprints.[15] Mail order, which is quite common in the US because of its efficient

[15] D. Harris, Alibaba and Cainiao: Tomorrow, the world! CargoFacts, September 15, 2015, https://cargofacts.com/allposts/business/strategy/alibaba-and-cainiao-tomorrow-the-world/.

postal service, was uncommon in China because postal service is inefficient and it lacks effective national delivery firms, such as UPS, and because, in many respects, China was a country of local markets and stores. The new network spanned the country and was integrated into the Alibaba data system. With this alliance and massive investment, Alibaba built the largest logistics network in China, though much of the capital investment was undertaken by its partners, which benefited from the increase in volume. To further leverage this network, Cainiao opened its application programming interface (API) to other vendors (Luo, 2016). Cainiao is an iconic example of the equity partnerships that characterize the PBG model, as the joint venture partners are integrated into the Alibaba computer system. For Alibaba, this is a capital-conserving strategy that permits a rapid build out and relational control of its partners. This contrasts with Amazon, which had access to huge amounts of capital from a patient stock market. Without equity partnerships, Alibaba would not have been able to build its system so quickly.

As Figure 3 indicates, Alibaba has used the selloff strategy less than Tencent. However, the recent listing of Ant Group on the Hong Kong market is the largest of all selloffs. Ant was the result of the evolution of Alipay, which was initially introduced to solve the endemic lack of trust between Chinese shoppers and sellers. Buyers were unwilling to pay for an item prior to seeing it and sellers were afraid to ship an item without first being paid (Clemons et al., 2016). Alibaba resolved this trust problem by creating an escrow account into which buyers deposited their payments, which was only released to the seller after the buyer signaled their satisfaction (Kwak et al., 2019).

As Chinese consumers became more comfortable with the payment app, the volume of

online transactions increased, Alibaba accumulated increasingly large sums in these escrow accounts, which were used to offer other financial services (for a graphical depiction of these services and their development history, see Figure 4). The online transaction use accelerated in the mobile internet era, as Alipay introduced a mobile phone payment service linked to users' bank accounts. Adoption of this service was rapid because nearly all Chinese, in particular, those who did not have credit/debit cards, began to use their phones for payment. Alipay therefore filled the credit card market gap as China rapidly evolved into a consumer society. In response to a 2010 ruling by the People's Bank of China (the central bank), Alibaba began to separate itself from Alipay and named the division the Ant Group. Ant became a full service online financial institution, providing customized loans to consumers and micro-enterprises, whose creditworthiness could be judged by transaction data accumulated on the ecommerce platform.

< **Figure Three about here>**

<Figure Four about here>

As Figure 3 indicates, in addition to equity investments and sales, Alibaba used acquisitions and venture capital investments to expand, largely into areas with only a limited connection to its core businesses. For example, Alibaba acquired and then integrated Koubei (2015) and Ele.me (2018) to expand into online-to-offline services. In 2015, it acquired Youku, the largest online video platform to enter the video-sharing and entertainment industry. Although both industries have a limited connection to ecommerce, they further accumulate users' data concerning online-to-offline activities. Further, they can all be integrated into Alibaba's cloud computing.

Additionally, to keep pace with the business and technology frontier, Alibaba invested in startups. From the sharing economy to artificial intelligence (AI), Alibaba's venture investment is among the most active in China.[16]

Like Tencent and US platform firms, Alibaba grew organically and by using acquisitions and venture capital investments. In contrast to Tencent, which was very active in selloffs, Alibaba did not used this strategy until its aborted attempt to selloff the Ant Group in November 2020. In terms of cross-investment, the Cainiao joint venture is one of the most complex. It instantly gives Alibaba a distribution system across China. The particular mix of strategies for growing its PBG differed from that of Tencent; however, the evolution of the Alibaba PBG resembles that of Tencent, and both use strategies that are very different from of US platform firms.

4.3. Trip.com's PBG Strategy

The significance of Trip.com (formerly Ctrip International) is not its size but that it is a smaller, vertical platform that has also adopted a PBG strategy.[17] It used a PBG strategy to become the largest domestic Chinese online travel platform and the third largest globally, trailing only Priceline and Expedia. Founded as Ctrip.com in 1999, it was one of the first Chinese OTAs and introduced a 24-hour online platform on which customers, using personal computers, could compare prices and book travel products online. As with the other Chinese platform firms, Ctrip's growth exploded as Chinese consumers adopted smartphones.

[16] The Alibaba venture investment data are available at https://www.crunchbase.com. Alibaba and Tencent are among the most active investors in the domestic Chinese market.

[17] This section draws heavily on Shao and Kenney (2018).

As was the case with Alibaba, Trip.com received major investments from, and built a partnership with, the international OTA Priceline. In addition, Baidu and Tencent, because of a set of mergers between various Chinese OTAs, became large shareholders in Trip.com. This led to a complex relationship with the two larger platforms, leading Tencent and Trip.com to sell the Tongcheng-eLong OTA, while continuing their relationship with it. As part of the sale, Tencent was expected to push WeChat customers to the newly independent firm.[18] As a smaller vertical platform, Trip.com had to maintain relationships with the larger PBG, even as it endeavored to build its own PBG.

In addition to conventional organic growth, acquisition, and venture investments, as Figure 5 shows, Trip.com aggressively negotiated equity cross holdings with key hotel, car rental, and airline firms. For example, in 2008, as its hotel reservation volume increased, Trip.com purchased 15.39 percent of Home Inns, one of China's largest hotel chains.[19] Because it is a shareholder of Home Inns, Trip.com has preferential access to accommodations information and favors Home Inns on its website.[20] Similarly, in 2013, Trip.com bought a 19.6 percent stake in

[18] L. Moon, Tencent-backed online travel agency Tongcheng-eLong plans to use Hong Kong IPO to build brand awareness, SCMP.com, November 27, 2018, https://www.scmp.com/business/companies/article/2175123/tencent-backed-online-travel-agency-tongcheng-elong-plans-use/; Tongchen-eLong Holdings Limited, Initial Public Offering Prospectus, 2018.

[19] S. So and J.C. Westland, Ctrip: Redefine the formula of success in online travel, Alibaba, July 6, 2009, https://news.alibaba.com/article/detail/business-in-china/100130332-1-ctrip%253A-redefine-formula-success-online.html.

[20] For more details about the relationship between Trip.com and Home Inns, see (Zhu and Ma, 2008) 朱瑛石，马

eHi Car Service, a leading Chinese car rental firm, which was then sold on the NYSE in 2014.[21] As in all these relationships, Trip.com favors eHi on its platform and routes traffic to it.[22] In 2016, Trip.com invested $463 million to obtain a 3 percent stake in China Eastern Airlines, thereby initiating a preferential relationship between the two firms.[23] In 2019 it sold LvYue to a consortium of investors, including Tencent. LvYue, using cloud-based software, has access to Trip.com's data and manages a set of hotel brands established in partnership with local operators in 10 Asian countries.[24]

Like smaller Western OTAs, Trip.com has not expanded in as many different directions as Tencent and Alibaba, because of its size and vertical business model. However, as Figure 5 indicates, it has used all the PBG growth strategies.

< **Figure Five about here**>

蕾. 第一团队:携程与如家[J]. 互联网周刊, 2008:75-75.

[21] K. Prabu, Ctrip helps China car rental service eHi pocket $100M investment, Phocuswire, December 20, 2013, https://www.phocuswire.com/Ctrip-helps-China-car-rental-service-eHi-pocket-100M-investment/.

[22] Ctrip: In-depth cooperation with eHi, transforming from OTA to OTP. translated from 携程：与一嗨深度合作 从 OTA 到 OTP 蜕变. Jan 23, 2015, See http://www.pinchain.com/article/21086/.

[23] S. Ren, Ctrip buys into China Eastern Airlines: Biggest winner Is Qunar, *Barron's,* April 21, 2016, https://www.barrons.com/articles/ctrip-buys-into-china-eastern-airlines-biggest-winner-is-qunar-1461290464/.

[24] S. O'Neill, Tencent bets big on Ctrip-backed LvYue Hotel Group: Travel startup funding this week, Skift, November 22, 2019, See https://skift.com/2019/11/22/tencent-bets-big-on-ctrip-backed-lvyue-hotel-group-travel-startup-funding-this-week/ .

5. Implications of the PBG Model for Platform Theory

Existing platform growth theory accepted the three-choice model proposed by Peng and Heath (1996). Remarkably, even Asia-centric scholars assumed that the Western experience would be replicated in Asia. In particular, platform scholars assumed that expansion strategies would be limited to organic growth, acquisition, and venture capital investment. In the context of Western platform firms and their strategies, this was completely justified.[25] The PBG model, illustrated by Chinese digital platform giants, exemplifies alternative growth strategies in a novel market structure. Equity investments and selloffs were widely employed, forming an alliance structure with a hub-and-spoke design within which the core platform firm develops bilateral or more complex relationships with other firms that become integrated into its PBG. Thus far, Alibaba has had only one sale, Ant Financial, though it was expected to be the largest in Chinese history. Even the far smaller Trip.com undertook a selloff. Moreover, the selloff strategy has been commonly used in China. For example, in late 2020 JD.com announced that it was selling JD Health.[26] The point is that many Chinese platform firms undertake selloffs, whereas we see no examples of US platform firms undertaking a similar strategy.

The academic literature has paid little attention to the growth strategies of Chinese online

[25] Kenney et al. (2020b), in their studies of the platformization of agriculture, find a proliferation of platform business models with new organizational forms, such as multi-stakeholder platforms and stakeholder-owned cooperative models.

[26] B. Godfrey, JD Health to Debut on Hong Kong Stock Exchange in $3.5B IPO, November 25, 2020, https://www.coinspeaker.com/jd-health-hong-kong-ipo/.

platform firms. Existing platform theory has largely focused on the strategies of individual platforms for recruiting ecosystem members and Western strategies, such as organic growth and acquisition, to expand into adjacent markets (Gawer, 2014). Because the extant literature is entirely focused on US platforms, it has not considered how firms in other countries develop novel strategies that draw on indigenous templates. Our analysis on Chinese digital platform growth strategies thus contributes to the firm growth theory as well as existing platform research.

PBGs have common characteristics. Independent or quasi-independent firms are interconnected in ways that reinforce one another. The core firm uses its position to route traffic and data or provide infrastructural services to the other PBG members. Of course, some applications initially established as complements can evolve into new platforms, and a core firm must decide whether they should be sold, or, in the case of Ant, government regulators might force a sale. Today, Ant is a quasi-independent firm that is a core platform in the Alibaba group, through which many online-to-offline services, such as food delivery, operate. Not surprisingly, Alipay and WeChat Pay have become fulcrums for expansion, acting as leverage to integrate yet other firms into the PBG.

PBGs have interesting dynamics. Competition between business groups is particularly fierce because firms compete directly and actively use cross-subsidies in efforts to drive rivals out of the market. For example, Tencent and Alibaba initially competed in separate vertical segments. However, as they expanded, they increasingly competed with each other directly or formed alliances with weaker firms in their rival's market segment. Tencent allied with the smaller JD.com, and together they invested in VIPShops to form an alliance against the larger

Alibaba retail platform. More recently, Alibaba began to develop games and support independent game makers to compete with Tencent. In all these cases, PBGs used equity crossholdings to enter their platform rival's market or reinforce existing competitors in it. These PBG competitions can become expensive, as was the case between Alibaba and Tencent-funded rivals in ride hailing, and they eventually agreed on a truce when they merged, forming Didi.

At the moment, the PBG model seems to be confined to the Chinese market and might not be exportable, because it involves an entire package of firms. The PBGs co-evolved in parallel with the growth of the Chinese economy. The transition to the smartphone catalyzed Chinese platform firms to move beyond simply copying US business models. Essentially, this transition enabled Chinese firms to develop a different industrial architecture. Moreover, the isolation of the Chinese market allowed a variety of sociotechnical innovations to emerge, which might not have been possible if the US giants had had free rein in China during that period.

In 2020, some of the Chinese technical and platform business model innovations are the most advanced in the world. For example, some commenters, both Chinese and non-Chinese, consider WeChat's technology superior to that offered by US firms, such as Facebook (see, e.g., Chan, 2015). The Chinese mobile internet payment platforms are undoubtedly far larger and more sophisticated than those in the rest of the world (Mozur, 2016). They are so ubiquitous and advanced that they have become part of the Chinese financial infrastructure (Plantin & de Seta, 2019). Yet, with few exceptions, Chinese firms have not generated significant revenue outside China. One of those exceptions is the TikTok app, which has experienced global adoption despite its recent tension with the US government. Otherwise, growth outside China has been

largely through acquisition, the most salient example being Tencent's purchase of significant equity stakes in or purchasing gaming firms, such as the Finnish firm Supercell (Jia et al., 2018). Thus far, the hope that these gaming firm investments would facilitate wider adoption of its social media platform, WeChat, by gamers and presumably their fans has not been borne out.

Based on an analysis of the development processes of these three firms, Chinese digital giants might have difficulty in globalizing the PBG model for three reasons (Jia et al., 2018).

First, global markets already have a large number of incumbents—many of them West Coast US firms that have had a long time to adapt their products to local markets, leaving limited space for Chinese digital platforms. As mentioned above, the lack of credit card usage in China played an important role in the success of Alipay and WeChat Pay. So, these firms would have to compete not only with non-Chinese mobile payment systems but also with credit card companies that have already locked in users.

Second, Chinese PBGs' attempts to globalize might be hindered by the different regulatory environments elsewhere. The Chinese domestic market continues to be regulated rather loosely. The Chinese government allows equity investments in established firms and various consortium strategies, which can result in powerful business combinations (Jia & Kenney, 2018). These strategies might not be accepted in other countries because of local resistance to a "takeover" of large market segments. Additionally, the high cost of delivering entire service packages to foreign markets might inhibit entry to those markets.

Third and related to the previous point, the ability to acquire firms is constrained in an increasing number of countries. For example, in 2018 the US government blocked Ant from

acquiring MoneyGram, the second-largest US money-transfer firm.[27] MoneyGram could have become a vehicle for Alibaba to introduce Alipay into the global money transfer system.[28] The investment was blocked because of purported national security concerns. Moreover, the short video-sharing application TikTok, the most successfully globalized Chinese app to date, is at risk of being banned in the US, as is WeChat. Whether the US can convince other countries to ban Chinese applications remains to be seen, though in 2020 India on its own initiative also banned several Chinese applications.[29]

In sum, Chinese platforms might suffer from what has been called a "Galapagos phenomenon," i.e., a firm or technology that is successful in its large but isolated domestic market but is unable to translate that success to the global market. However, Chinese firms have engaged in joint ventures with existing local platforms in other countries—something that US platforms have been largely unwilling to do. For example, Alibaba and Tencent together have invested in 11 Indian unicorns (Li, 2019). Similarly, Trip.com has invested in the Indian travel platform MakeMyTrip.

[27] The US Government blocks MoneyGram's $1.2B sale to Alibaba's Ant Financial, TechCrunch, Jan.3, 2018, See: https://techcrunch.com/2018/01/02/moneygram-ant-financial-alibaba-deal-collapses.

[28] MoneyGram is of vital importance for Ant Financial if it is to become a globally powerful payment platform (see http://fortune.com/2017/04/17/moneygram-ant-financial/).

[29] India bans TikTok and 58 other Chinese apps after border clash, CNET, Jun.30, 2020, See: https://www.cnet.com/news/india-bans-tiktok-and-58-other-chinese-apps-after-border-clash/.

6. Discussion and Conclusion

Platform growth theory is based on the experience of the West Coast platforms. This paper described China's PBG model, which is the organizational structure of two of the most valuable platform firms in the world as well as many other successful platforms (Evans & Gawer, 2016). The Chinese firms have developed a successful organizational structure that differs from that of the West Coast giants. Chinese firms have used joint ventures, interfirm equity relationships, and sales. In the PBG model, the core platform firm attracts users and channels them not only to its own platforms but also to sold-off firms (e.g., Ant), joint ventures/consortiums (e.g., Cainiao), and equity-related independent firms (e.g., Tencent/JD/VIPShops).

The reasons for the emergence of the PBG model were not only economic but also shaped by the political and legal conditions in China (Chang, 2006). The extant literature explains it in three ways: the institutional void hypothesis, the resource-based view of firms, and state activism as a catchup device (Lee & Jin, 2009). The core of the PBGs are entrepreneurial firms that initially emerged and grew without a strong relationship to the Chinese state—in fact, the funding for many of these firms came from foreign venture capital firms. When they formed, they were on the periphery of the Chinese economy, which entered the platform era about a decade after its emergence in the West. Of course, these platform firms are now among the most important in China and thus have built far closer relationships with the government.

On the one hand, the PBG model was established in what, at the time, was a relatively underdeveloped Chinese business infrastructure with a laggard technological capacity, uncertain legal context, and even less-developed norms of business behavior. China lacked modern

infrastructure, including credit cards, package delivery systems, landline telephones, and much more. Although the use of credit cards increased over time, in general, small businesses did not accept them. These infrastructural weaknesses meant that Chinese platforms firms did not face entrenched incumbents but also had to invest massively to fill these voids. After they were filled, however, they offered vast opportunities for generating revenue. Alibaba illustrates that the nonexistent infrastructure, in fact, presented a great opportunity. Because Alibaba's success depended upon buyers' ability to purchase products online, and few consumers had credit cards, Alibaba introduced software that enabled buyers to transfer money from their bank accounts to online sellers. To put it differently, they had to build the infrastructure for their businesses from the ground up.

The importance of the larger political and legal context cannot be overestimated. First, Chinese regulators did not enforce non-compete agreements, introduce rules against preferential treatment of affiliated operations, holding companies, or adjudicate disputes in ways that might restrain the expansion of digital platforms. The only significant exception was government intervention to restrain the expansion of Alibaba and Tencent into payment and other financial services. In this instance, regulators established boundaries between banking and the platform giants—largely to protect the banks.[30] Second, the legal uncertainty of data protection, platform

[30] Another example is the acquisition of the Hengsheng Group by Alibaba in 2014. Hengsheng was the largest information technology supplier for financial institutions in China and gained a market share of more than 80%. After a nearly four-month investigation of this merger, the US Department of Commerce approved it unconditionally. See: https://blogs.cfainstitute.org/marketintegrity/2015/02/12/are-tencent-alibaba-innovators-or-a-

liability, and related issues on digital platforms stimulated the formation of PBGs. By comparison, the US laid the legislative foundation for US platform firms as early as the late 1990s in the Digital Millennium Copyright Act and other such actions (Chander, 2013). Only recently has China begun to draft laws to regulate the business practices of platform firms with regard to ecommerce, data protection, and so on. Further, scrutiny of Chinese antitrust law has only begun recently and presents the Chinese government with a conundrum, because it sees these firms as powerful national champions.

Previous research on business groups suggests that this business form may be transient (Peng, 2003; Peterson, 2016). However, our study of the PBG model does not indicate that these groups suffer from obvious inefficiencies or management problems that would lead to their dissolution. We have seen little evidence that the US model of integration is likely to fail for internal business reasons; government divestment is possible, but that is a political decision.

In the West, concerns have increased over how platform firms exploit complementors and, in certain cases, how platform firms expropriate their complementors' businesses by entering the latter's markets as direct competitors (Cutolo & Kenney, 2020). As we have shown, Chinese platform firms have developed a portfolio with a variety of ecosystem relationships. Whereas West Coast platforms do not seem to differentiate between complementors, the PBG model is one of explicit preferentialism. In the case of selloffs, an existing part of the firm is marketized and thus transferred to the ecosystem, where it is still controlled by the core firm, often through

new-cog-in-the-chinese-regime/.

the use of two-tiered equity voting. The PBG model questions the assumption of a modular and clear separation between platform firms and ecosystem complementors in current platform theory (Jacobides et al., 2018). In the PBG model, this boundary appears to be more fluid than is postulated in platform theory. Further research is necessary on the conditions under which Chinese platforms sell components and the advantages of joint ventures over integration. This could provide important insights that would broaden platform theory to encompass developments in different contexts.

In conclusion, we have shown that Chinese platform firms have developed a business model that differs markedly from the one employed by their West Coast counterparts. Given the success of these firms, the model cannot be dismissed as a mere oddity. Whether the Chinese model is merely an outgrowth of the unusual Chinese environment or is reproducible in other countries remains an open question. Their success suggests that far more research into the economics and industrial structure of the PBG should be welcomed and can be used to sharpen platform theory by observing the evolution of platforms based on their particular context. The PBG model has allowed China to effectively deploy technologies such as AI and develop global-class technical expertise, highly profitable firms capable of making large capital investments, and the huge data pools necessary for developing novel digital products (Lee, 2018).

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We have no pecuniary or other personal interest, direct or indirect, in any matter that raises or may raise a conflict with the research presented in this paper.

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Tables:

Table 1: Comparison of US Platform and Chinese Platform Business Group Models

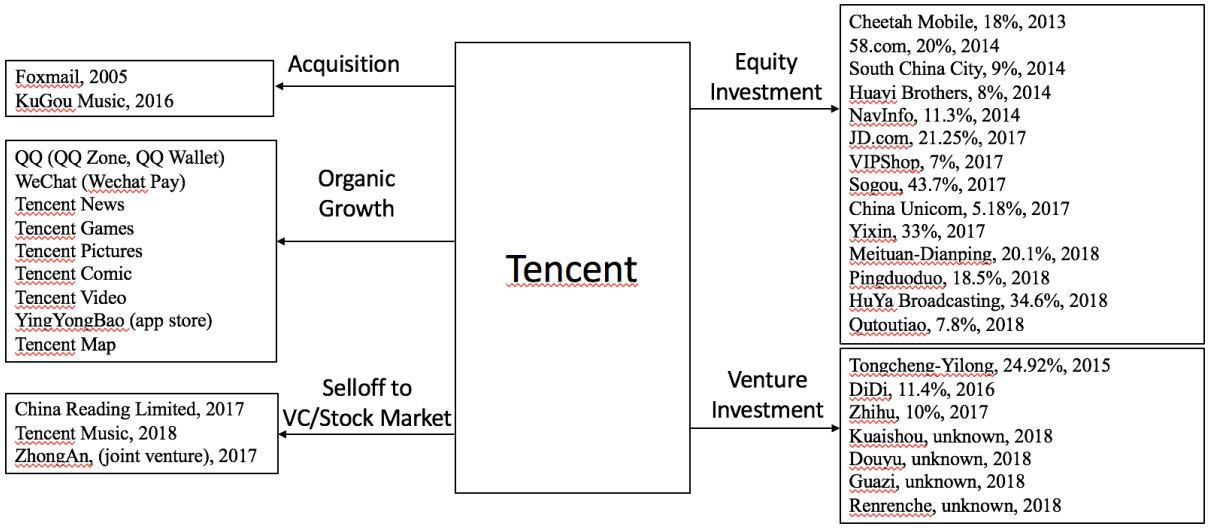
US Platform Expansion	Chinese Platform Business Group Model
Organic	Organic
Acquisitions	Acquisitions
Venture capital investment	Venture capital investment
	Public listing of a division
	Equity cross-investment, consortia, etc.

Figures:

Figure 1: Amazon Expansion Vectors

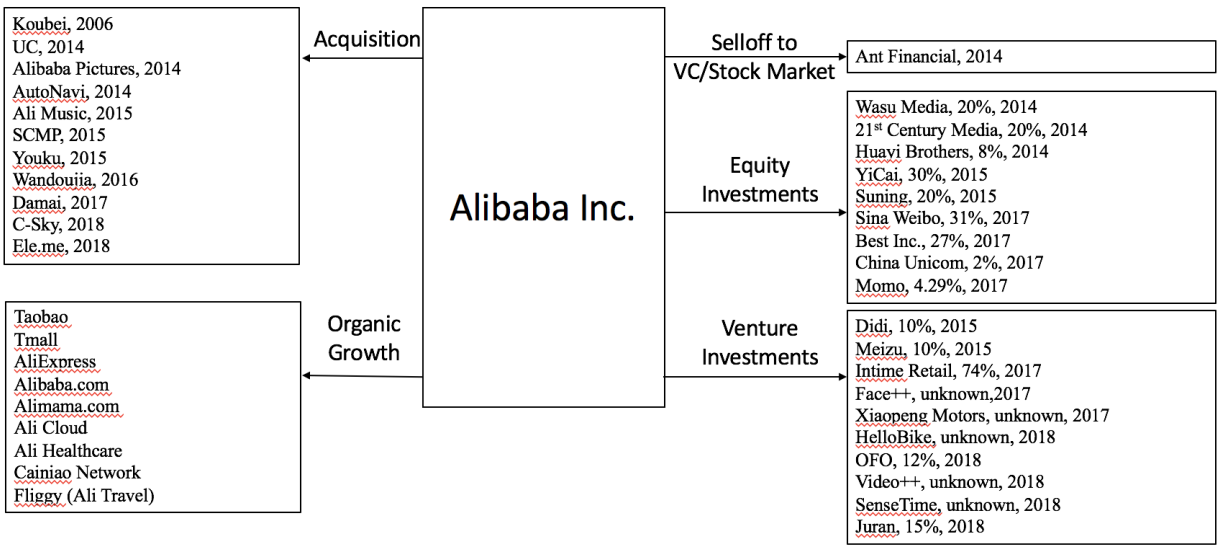
Source: Kenney et al., 2020a.

Figure 2. Tencent PBG Strategy in the Chinese Market through 2018



Note: The data were collected by authors from various sources. The Acquisition and Selloff boxes list related firms and the year they were acquired or sold. The percentages in the Equity Investment box indicate the percentage of ownership by Tencent in the investee firm at the date of first investment. Because of the many expansions, we note only the investees that are public or among the top five firms in the corresponding market segment.

Figure 3. Alibaba PBG Strategy in the Domestic Market through 2018



Note: The data were collected by the authors from various sources. The Acquisition and Selloff boxes list related firms and the year they were acquired or sold. The percentages in the Equity

Investment box indicate the percentage of ownership by Alibaba in the investee firm at the date of first investment. Because of the many expansions, we note only the investees that are public or among the top five firms in the corresponding market segment.

Figure 4. The Evolution of Ant Financial

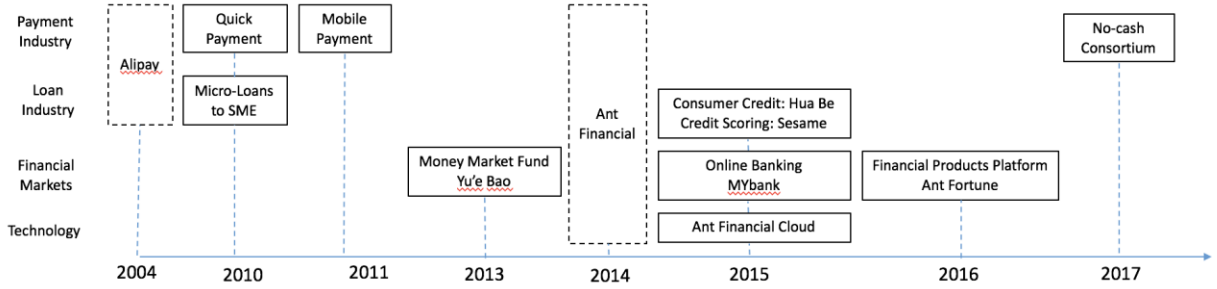
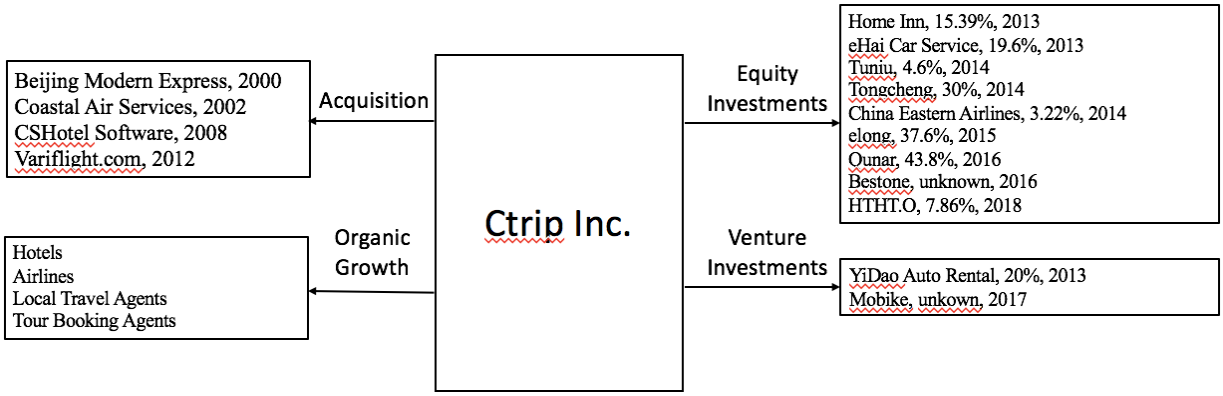


Figure 5. Trip.com PBG Strategy in the Domestic Market through 2018



Note: The data were collected by the authors from various sources, of which Crunchbase was the most useful. The Acquisition and Selloff boxes list related firms and the year in which they were acquired. The percentages in the Equity Investment box indicate the percentage of ownership by Trip.com in the investee firm at the date of first investment. Because of the many expansions, we note only the investees that are public or among the top five firms in the corresponding market segment.