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On super apps and app stores: digital media logics in China's app economy

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Abstract

Aiming to enrich the conceptual vocabulary of platform and app studies, this article provides a critical political economic perspective on the media industry to understand how platform power is operationalized in the app economy. Using the China-based tech conglomerate Tencent as a case study, four mechanisms are discussed: conglomeration, financialization, platformization, and infrastructuralization. These mechanisms show how Tencent leveraged both a conglomerated corporate structure and access to finance capital. This was combined with the infrastructuralization of the MyApp app store and the WeChat platform by providing vertically integrated app development and distribution services, which are nested in Tencent's holdings and investments. Taking Tencent as the starting point for theory building, this article attempts to "provincialize" US-based platform companies by charting Tencent's corporate evolution and its path to mobile dominance.

Keywords

apps, platforms, Tencent, WeChat, political economy, app stores, Asia as method

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Introduction

In less than a decade, the Shenzhen-based conglomerate Tencent (est. 1998) came to hold a dominant position in the Chinese app economy. To attain this position, the company followed a markedly different strategy compared to many other media, telecommunication, and technology companies. Before the advent of smartphones in China, telecom companies—such as China Mobile and China Unicom—were able to determine which software developers could access mobile devices by exerting control over access to their cellular networks. After the rapid diffusion of smartphones in the early 2010s, telecoms had to relinquish control to new market entrants and domestic hardware manufacturers. The latter category includes companies such as Huawei and Xiaomi, which launched their own mobile app stores, providing them with direct authority over the means and rules for app production and distribution. Meanwhile, US-based tech conglomerates Apple and Google forwarded an integrated approach, operating their own app stores *and* mobile operating systems. In contrast to these domestic and global competitors, Tencent plotted a different path. It did not start as a telecom company, it does not manufacture mobile devices, nor has it developed a mobile operating system, business strategies crucial for rival companies to control mobile app ecosystems (Ballon, 2009). Tencent has nevertheless been able to achieve a position of market dominance, through a distinct pathway we examine here.

As mobile apps are a prime avenue through which users around the globe access the Internet, becoming mundane yet indispensable software, it is vital to understand how power is organized in app economies (Gerlitz et al., 2019; Goggin, 2021; Morris and Murray, 2018; Steinberg, 2019). Reviewing Tencent's corporate trajectory, we aim to broaden the understanding of four interrelated institutional strategies—platformization, infrastructuralization, conglomeration, and financialization—at play in these economies. Throughout this paper, we consider these four as analytical categories, as historical processes, and as techniques of corporate power. Unpacking and disentangling them enhances our understanding of how platform companies shape the production, distribution, marketing, and monetization of apps by third-party content and service providers. Such research is particularly warranted as the control of major tech companies over app ecosystems has become a contentious issue; cultural producers, policymakers, and state regulators have raised profound questions about the moderation practices and fees imposed by app store operators (Gillespie, 2018).

Investigating how different actors exert control in platform ecosystems, it is important to not only account for quantitative economic indicators (e.g., revenue, market capitalization), but also for a company's ability to forge, aggregate, and shape institutional relations (Van Dijck et al., 2019). Therefore, our understanding of platform power is based on two premises. First, the combination of the processes of *platformization* and *infrastructuralization* is particular to platform companies. It is important to note that these processes extend beyond algorithms and datafication, often seen as the core characteristics of platforms. As we will discuss below, they refer to specific institutional and economic arrangements put in place by platform companies (Poell et al., 2021). Second, the processes of *conglomeration* and *financialization* have a much longer history. For instance, when investigating the media and communication industries, critical political economists have pointed to conglomeration as the centralization of control over cultural production through horizontal and vertical integration (Mosco, 2009). This insight should be combined with an understanding of conglomerates' ability to wield finance capital to increase market share and corporate ownership (DeWaard, 2020). In isolation, these four power mechanisms are by no means unique; they mark corporate strategies that explain how media companies have grown and evolved into multi-divisional conglomerates, and they are indicative of how platform companies create and control markets and exert infrastructural power. It is the specific combination of these strategies of power, as this paper will show, that sets Tencent apart from other key actors in the app economy.

Pursuing this analysis, we, first, benefit from the historical insights derived from media industry studies (Herbert et al., 2020) and critical political economy approaches to communication (Mosco, 2009). Second, we draw on scholarship in platform and app studies. Platform and media industry scholars have conducted detailed studies of the corporate machinations of Apple, Google, and Facebook (Bucher, 2021; Lee, 2019). Likewise, there are in-depth studies of apps such as Instagram (Leaver et al., 2020) and TikTok (Kaye et al., 2021), as well as studies of Tencent (Tang, 2020), MyApp (Li, 2018) and WeChat (Chen et al., 2018; de Seta, 2020; Harwit, 2017; Negro et al., 2020). In dialogue with these bodies of scholarship, we aim to broaden the conceptual framework of app and platform studies. Taking Tencent as the starting point for theory building, rather than the US-based tech giants, our research can be seen in the tradition of Asia or China as method (Chen, 2010; Davis and Xiao, 2021; de Kloet et al., 2019). Moving beyond the framework of the "West and the rest," the objective is to "multiply frames of reference" and contribute to the deimperialization of knowledge production (Chen, 2010: 222–223).

By interrogating how Tencent has accrued and consolidated its dominant position in the Chinese app ecosystem, we can gain a better understanding of its unique institutional location vis-à-vis both domestic and foreign competitors. In our analysis, we focus on two of Tencent's specific platform services: MyApp and WeChat. Via a combination of institutional and financial analysis, we examine how the MyApp app store, the so-called "super app" WeChat (Chen et al., 2018; Steinberg, 2020), as well as large investments in mobile entertainment have been central to the company's domestic success. Ultimately, we argue that it is Tencent's ability to aggregate a myriad of institutional partnerships and follow specific institutional and corporate strategies—with MyApp and WeChat at the center—that differentiates Tencent from other dominant platform companies.

Power and control in app economies

When it comes to theorizing power in the app economy, three US-based platform conglomerates have, so far, been singled out by scholars across the fields of (mobile) media studies, platform and app studies, and business studies: Apple, Google, and Facebook. To move beyond Silicon Valley as the only frame of reference in theorizing power in the app economy, the first step is to understand that these platform conglomerates constitute *particular* rather than *universal* cases. In the words of Chakrabarty (2009), we need to "provincialize" the US and thus US platform corporations. As he makes clear in his postcolonial critique of supposedly universal concepts such citizenship, the state, and civil society, these "all bear the burden of European thought and history" (Ibid: 4). Similarly, platform theory can be seen to carry the imprint of US platform companies and of the political economic framework in which they are embedded. This section will try to bring the particularities of these companies and their specific position in the app economy to the fore. This will allow us in the remainder of the article to gain a more precise understanding of what Tencent can tell us about power in the app economy.

Examining the leading US platform companies, it is important to see how they substantially differ from each other in terms of their market orientation. Historically, Apple generates the bulk of its revenue from premium-priced hardware, whereas Facebook and Google primarily rely on income from digital advertising (Barwise and Watkins, 2018). These differences, then, impact how these companies have been able to stake out a dominant position in the emerging app ecosystem. Let us look at each in a bit more detail, starting with Apple.

Even though Apple is widely considered to be at the genesis of the smartphone era, the development and distribution of mobile applications predates the 2007 launch of the Apple iPhone (Goggin, 2021). Consider, for instance, the introduction of the mobile Internet platform i-mode, which was introduced in Japan by NTT Docomo at the turn of the millennium (Steinberg, 2019). That said, with *an integrative approach to hardware and software*, and a global reach that eluded i-mode, Apple reconfigured "the power dynamics among network operators and vendors of handsets because it was able to conjure up, and indeed deliver upon, perceived demand for its product" (Goggin, 2021: 17). After some trepidation, Apple's introduction of the iOS App Store allowed for the distribution of mobile applications by third parties. With full control over the iOS operating system and positioning the App Store as the only certified app distribution channel, Apple has followed a strategy of strictly policing the infrastructural boundaries of its mobile platform (Eaton et al., 2015). To that end, the company has set regulatory frameworks and technical standards through an evolving set of "boundary resources": software development kits (SDKs), application programming interfaces (APIs), associated documentations, and elaborate review guidelines (Ghazawneh and Henfridsson, 2013). Thus, Apple's approach to platformization and infrastructuralization forces iOS App Store app developers to integrate with Apple's platform infrastructure and to align with its business model.

Google, for its part, has become a key institutional actor in the global app economy through its *control over the popular mobile operating system* Android (Lee, 2019). Relative to Apple, Google's operating system is much more open as it has allowed hardware manufacturers full integration and customization as well as authorization to third parties to install and operate their own app stores. Google can afford this more permissive path, as its main source of revenue derives not from hardware sales, but its platform subsidiary Google Ads. Consequently, the company is primarily interested in maximizing the number of Android users and making sure that the services through which it harvests user data and serves advertising—Google Search, the Play Store, Google Maps, etc.—are installed on Android devices (Spreeuwenberg and Poell, 2012). Thus, despite the perception of Google's more liberal approach, it exercises extensive infrastructural control over the Android ecosystem. What distinguishes Google's approach to platformization from Apple's is that the former is more focused on data extraction by leveraging Android's infrastructural position in the app economy.

Lastly, similar to Google, in its early years Facebook derived much of its revenue from desktop-based digital advertising. With the mass diffusion of mobile devices, Facebook then went through a significant transformation to become a mobile-first company (Goggin, 2021). Whereas Facebook does not own or operate a mobile operating system or an app store, the company's "family of apps" (Facebook "Blue," Messenger, WhatsApp, and Instagram) did attract more than a billion users each. In a strategy best understood as *the platformization of the app ecosystem* (Nieborg and Helmond, 2019), each Facebook app extends far beyond its own infrastructural boundaries by providing third parties with external services (e.g., login functionalities, advertising technology) through the infrastructural integration of SDKs and APIs. While Tencent's approach to platformization and infrastructuralization also has unique characteristics, we found that Tencent's approach to leveraging WeChat popularity shares some striking similarities to Facebook's app-based strategy. Yet, we should note that many of Tencent's successes precede those of its US-based peer companies.

Enriching the conceptual vocabulary

Having identified the positioning of the leading US-based platform companies in the global app economy, we can now see more clearly how their corporate trajectories have shaped platform theory. Studies on these companies and app ecosystems have foregrounded the twin processes of platformization and infrastructuralization as key institutional drivers of platform power (Nieborg and Helmond, 2019; Plantin and de Seta, 2019). *Platformization* can be defined as the penetration of digital platforms' economic, infrastructural, and governmental extensions in different economic sectors and spheres of life (Poell et al., 2019). And, *infrastructuralization*, then, can be understood as platforms acquiring "properties that are typically associated with infrastructure, such as scale, ubiquity, and criticality of use" (Plantin and de Seta, 2019: 258). Note that both concepts spotlight attention on platforms as large-scale techno-commercial configurations that connect different types of actors, activities, and sectors.

Barring some notable exceptions (e.g., Jia and Kenney, 2022; Lee, 2019), much less scholarly attention has been paid to how platform companies have leveraged the processes of *corporate conglomeration*—corporations seeking to benefit from economies of scope and scale through integrated organizational structures and diversified, yet concentrated corporate ownership—and *financialization*, or "the accelerated growth of the financial sector and its extractive logic" (deWaard, 2020: 54). As we will show, it is through conglomeration and financialization that Tencent has become a media content and entertainment powerhouse. The paucity of scholarship on these interwoven processes appears to be partially due to the efforts by Google, Facebook, and Apple to eschew the label of media companies (Napoli and Caplan, 2017). Conversely, recent scholarship suggests that Chinese platform companies are less encumbered by the somewhat artificial division between directly funding and commissioning content versus providing a marketplace to host third-party materials (Wang and Lobato, 2019). Therefore, we suggest including corporate conglomeration and financialization as analytical categories to expand the conceptual apparatus of app and platform studies.

The strategy of conglomeration cannot be separated from the financialization of the cultural industries, which permitted "big media companies to take on massive debt to enact mergers and acquisitions" (deWaard, 2020: 78). That is, the extraordinary growth of the financial sector relative to other sectors of the economy has shaped the trajectory of the telecommunications, technology, and media industries (Jia and Winseck, 2018). Starting in the 1970s, to reduce costs, maximize profits, and enlarge economies of scale and scope, conglomerates have taken on debt-financed mergers and acquisitions. More recently, leading digital tech companies have become financial powerhouses because of their relatively large market valuations, which deeply embeds them in the financialization process (Jia and Nieborg, 2022). As we will discuss more in depth below, Tencent's relationship with financial markets is comparable to its competitors. The company benefited from venture capital investments in its start-up phase and raised funds through share issuance to, then, invest in and acquire an extensive portfolio of intellectual property assets. As such, Tencent not only competes in capital markets, but also transformed into a venture capitalist itself, with its own Win–Win Fund. The subsequent public listings of its subsidiaries—Tencent Music and China Literature—have further boosted its market capitalization, making the company and one of its main shareholders, the South Africa-based Naspers, the largest companies on the Hong Kong and Johannesburg stock exchanges, respectively.

Studying Tencent

Examining Tencent's efforts to stake out a central position in the Chinese app economy allows us to give empirical substance to conglomeration and financialization as key modalities of power as well as analytics within the platform economy, as well as to demonstrate how these processes tie in with platformization and infrastructuralization. Pursuing this objective, there is valuable research on which we can build. For example, striking aspects of Tencent's corporate origin story are said to be its focus on media convergence, gaming and youth culture, Sinicization, and mobility (Negro et al. 2020). These last two aspects recognize how Tencent felt it was forced to reckon with the opportunities and challenges of mobile communication infrastructures in its domestic market. At the turn of the millennium, one of Tencent's first business ventures was to develop creative services for pagers. For example, early 1999 it launched QQ, a cross-platform instant messenger application that was widely adopted in China. While this technology did not have the ubiquity smartphones have today, developing applications for these wireless telecommunication devices made Tencent one of the few "mobile first" companies. Rather than developing desktop apps or mobile hardware, it saw mobile communication and associated services as an important growth market, collaborating with telecommunication provider China Mobile to develop "mobile Internet" programs (Negro et al., 2020).

How Tencent subsequently morphed into a multi-divisional Internet giant via a strategy of conglomeration has been widely recognized among scholars. For instance, online gaming was said to be "the Trojan horse to achieve" the goal of attracting youth to the company's apps, signaling a corporate strategy deeply mindful of the potential of synergies across business divisions (Negro et al., 2020: 217). Over the last decade, Tencent leveraged a series of targeted investments, and capital-intensive merger and acquisitions to devour a large chunk of the global game industry pie: seemingly out of nowhere it jumped to the number one position as a global game publisher within 3 years (Nieborg et al., 2020).

In correspondence with this longer corporate history, Tencent has developed MyApp and WeChat as its leading platform subsidiaries. On the one hand, MyApp can be seen as "an app and a marketplace" and came to function as an important "guiding portal" for creative workers to develop apps for migrant workers (Li, 2018: 45–47). On the other hand, WeChat has become synonymous with mobile communication in China, research on Tencent's corporate history and the widespread adoption of its popular app has proliferated (Harwit, 2017; Tang, 2020). As a mobile app, WeChat is deemed "super sticky" and habitual, sinking into users' everyday activities and gluing an increasingly diverse range of users and actors to the platform (Chen et al., 2018). As a computational platform, WeChat shows the agility of a programmable and modular platform design, with more functions updated with every iteration of the app (Brunton, 2018). The app has become a one-stop shop of digital services for the ever-mobile Chinese society. Given its ubiquity, Plantin and de Seta (2019) argue that WeChat successfully transitioned from an app, to a platform, to an infrastructure by adding different functionalities and affordances that serve different publics and actors.

Finally, to gain insight in how power is mobilized in the Chinese app economy, we need to consider the central role of state governance, which has consistently played a large and visible role in the development and regulation of the nation's digital communication infrastructure and market. Like telecom giant Jio's close affiliation with India's political class (Mukherjee, 2019), Tencent epitomizes a textbook example that mixes a profit-seeking Internet company with a (digital) infrastructure-building state (Plantin and de Seta, 2019). Tencent's successes, therefore, are not incidental. They are said to represent the state's ambiguous attitude toward the regulation of the company's financial foundation, known as a "Variable Interest Entity," as well as toward its monopolistic market power.[1] MyApp and WeChat are nurtured by China's long-standing techno-nationalism into infrastructure-like digital services, with the government-mandated Health Code as a prime example during the COVID pandemic (Liang, 2020).

In the following analysis, we will describe how Tencent has evolved to occupy key infrastructural nodes in app production and distribution and how it turned MyApp and WeChat into platform subsidiaries. In so doing, it cemented Tencent's position in the Chinese app economy by creating new markets, but also by becoming an investor, incubator, and data and advertising service provider. To systematically analyze the company's mobile strategy, we draw on a combination of historical documents to focus on a specific period of Tencent's mobile development: from its Open Platform Initiative in 2011 to late 2021. Pursuing this inquiry, we have collected and analyzed tech news, reports by commercial market data providers such as iiMedia on the development of MyApp, WeChat blog posts, Tencent corporate documentation (e.g., annual reports), speeches given at Tencent's developer conference WeChat Open Class, press interviews by and coverage of Tencent's CEO Ma Huateng, as well as other corporate promotional materials, such as podcasts made by engineers explaining WeChat's development. To understand WeChat's design choices and strategic direction, we conducted a close examination of the governance of Mini Programs by looking at Mini Program developer guidelines. Lastly, to be able to contextualize broader shifts in the Chinese media economy, we draw on data provided by the Chinese Internet and Network Information Center (CNNIC), as well as other commercial services specialized in mobile app development in the Chinese market, such as AppInChina.

MyApp: from portal to app store

Tencent's dominance in China's app economy is powered by its ownership of one of the country's largest mobile app stores, MyApp, and its *super app strategy*, predicated on WeChat. Retracing this history, we gain insight in how platformization, infrastructuralization, conglomeration, and financialization are entangled.

Particularly striking is that Tencent initially focused on, what one could consider "proven" corporate strategies of *conglomeration* and *financialization* by heavily investing in media and entertainment production and distribution. While the company ultimately gained a central position in the Chinese app economy by developing MyApp into a successful app store, initially the app did not primarily function as a *platform* (i.e., a two-sided market) to connect complementors with end-users. Instead, launched late 2013, MyApp functioned more like a *portal* aiming to distribute Tencent's own content. That is, MyApp was positioned to integrate Tencent's digital content efforts across audio-visual content, online games, and online literature, thereby jumpstarting and subsequently solidifying Tencent's lead in app distribution. From the perspective of app studies, we argue that MyApp's successful rollout demonstrates that platform power does not solely revolve around the dual logic of platformization and infrastructuralization, but also involves corporate strategies traditionally associated with media companies.

To understand why and how Tencent initially focused on the production of media and entertainment, we need to look at the socio-technical and infrastructural development of the Chinese Internet, the company's history, as well as broader industry dynamics. In contrast to the Google/Apple app store duopoly, what has set the Chinese app economy apart has been the proliferation of multiple app stores (Goggin, 2021). For various reasons, Google's Play store has failed to gain a foothold in China as the go-to app store for Android users. This vacuum in the Android ecosystem enabled the development of some 400 app stores, owned and operated by a variety of players in the mobile value chain: handset manufacturers, telecommunication operators, Internet companies, and third-party mobile app stores.

Amid this turmoil, Tencent emerged as one of the leading app store operators. It did so by building on its previous investments in mobile services, coupled with new investments in media content. By the early 2010s, Tencent's instant messaging app QQ and the QQ browser were among the most popular products in their respective markets (connectivity and browsers), reaching a 99% adoption rate among mobile phone users (CNNIC, 2012). In September 2011, "App Center"—a precursor to MyApp—was launched, further integrating apps and software distribution for mobile and desktop devices, with a

50/50 revenue distribution of advertising revenue between Tencent and developers. Building on the success of QQ in the 2000s, the adoption rate of MyApp took off quickly.

A cornerstone of MyApp's rollout has been Tencent's investment in digital content production. Tencent has long been cultivating its "content universe" (Wei, 2020). Under the policy of "neo-cultural creativity," a phrase which later picked up by the Party's news outlet *Xinhua News Agency* and thus entered official policy discourse, Tencent embarked on a "content franchise" model (Guo and Liu, 2021), or "spin-off driven, derivative platform culture creation" (Wang, 2021). Indicative of its bourgeoning status as a conglomerate, over the years Tencent invested heavily in IP-oriented subsidiaries focused on motion pictures (e.g., Tencent Pictures, Tencent Animation and Comics), games studios, music (Tencent Music Entertainment), and online literature (China Literature). This model—to exploit the commercial value of Chinese culture—is endorsed by the state and aligns with the state-led media convergence agenda, which seeks to enhance the online visibility of "mainstream" culture. In this context, Tencent's investments have paved the way for and is reinforced by its mobile dominance.[2]

Unlike Apple and Google that both have secured dominance through controlling hardware, operating systems, and app stores tied to these operating systems, Tencent leveraged its integrated content ecosystem, pursuing a strategy of conglomeration. Recall that Tencent already amassed a significant userbase with its instant messaging application QQ, which made it a dominant player in the mobile media ecosystem. MyApp, then, further centralized pre-existing distribution services via the developer facing Tencent Open Platform, which allowed for the infrastructural integration of advertisers and developers. All of these efforts put Tencent in an advantageous position to highlight one of its key assets: mobile games, which made up 71% of all available apps (Beijing Morning Post, 2012). Tencent's gaming and mobile investments prior to MyApp gave it a crucial first mover advantage in the app economy. Through its connection to Tencent's social media services, MyApp became one of the popular destinations to download mobile games for the fast-growing and entertainment-seeking mobile users in China (Li, 2018). Crucially, the domestic investments in MyApp ran parallel to foreign acquisitions of game studios and intellectual property (Nieborg et al., 2020). As a result, since 2016 Tencent has ranked as the top mobile game developer in terms of global app revenue.

Apart from leveraging MyApp's infrastructural position in the app ecosystem and pushing intellectual property from its subsidiaries, what distinguishes Tencent from other app store operators is its ability to strategically leverage financial power to enhance its presence and collaboration throughout the app development and distribution processes. For example, in 2011, Tencent established the Industry Collaboration Fund and invested Tencent's entire annual revenue (20 billion RMB) into the fund (ithome, 2011). Tencent, subsequently, went on to deploy the in-house Win–Win Fund to manage its "investment portfolio with a primary objective to strengthen (its) leading position in core businesses" (Webb and Yang, 2021). In the meantime, Tencent pursued mergers and acquisitions as a comprehensive strategy to expand and consolidate its market power and as an emerging source of profit (Jia and Nieborg, 2022; Tang, 2020).

The outcome of Tencent's investments in content and technology is a series of *vertically integrated app development services*. There is, for instance, the "Game +" model, where game developers can pitch, fund, and access technical support provided by

Tencent's Industry Collaboration Fund. In this case, the development, distribution, and promotion of mobile games are integrated with MyApp, with insights provided by its user data, advertising, and traffic subsidies; the monetization of the app is processed via Tencent's payment systems: QQ Wallet and WeChat Pay. The ultimate goal for Tencent is to fully encapsulate the production, development, and consumption cycle within its own content ecosystem. Taken together, we can observe the development of a vertical integration model by Tencent, in which control and power are established via strategic investments in content and entertainment, as well as through internal data and revenue sharing. This model is different from the complementor model of the dominant US platforms, which focus less on investing in self-owned intellectual property or becoming a multi-divisional entertainment conglomerate.

Further illustration of vertical integration and the confluence of infrastructuralization—via investments in vital app distribution technology—and conglomeration have been Tencent's active role in domestic policymaking. Under the auspices of China's state policy of "Mass Entrepreneurship and Mass Innovation," Tencent supported and institutionalized app production via incubation centers and various partnerships with local universities, training institutions, and vocational schools. By 2016, Tencent's investments in quality boundary resources—support systems, developer resources, etc.—coupled with direct investments into mobile start-ups and content creation have paid off dearly. With about a quarter of market share, MyApp became the largest app store in China in 2016.[3] Other Tencent subsidiaries benefitted by seeing increases in mobile traffic, app downloads, data services and analytics, all of which functioned as a fertilizer for Tencent's broader business ecosystem.

Following a strategy theorized as "interplatformization," China-based platforms are said to follow a collaborative, integrated approach, signaling a deep level of economic and infrastructural integration among competing platforms and thus a more frictionless experience for users (Lv and Craig, 2021). That said, since 2017, MyApp faced increased competition from handset manufacturers (for more on handset manufacturers as a site of platform power, see Seyram Avle's contribution to this special issue). With their unique position in the app economy, Huawei, Xiaomi, Oppo, and Vivo and four other Chinese companies, formed the Mobile Hardcore Alliance, a partnership of different hardware manufacturers in 2014 (Sohu, 2015). The Alliance collectively represents an immediate challenge to MyApp's institutional position and revenue model, especially its ability to maintain its 50/50 revenue sharing agreement. This revenue split can be upheld by Tencent as its mobile games are one of the most lucrative mobile app products. Early 2021, Huawei aimed to renegotiate MyApp's terms. Failing to reach an agreement, Huawei went on to remove Tencent's online game catalog from Huawei AppGallery (Bloomberg News, 2021). Nevertheless, although the growth of Tencent's mobile app store slowed down, MyApp remains a dominant market player with around a quarter of market share.[4]

In sum, more than controlling third-party app distribution, the strategic importance of Tencent's MyApp app store is based on its media and entertainment content ecosystem, as well as the ability to cross-subsidize other Tencent services, such as online advertising, social media, content business, and digital payment. Operating its own app store has become one crucial way to promote access to the vast and growing library of media and digital content produced and owned by its subsidiaries, such as mobile games.

The super app strategy

The second element of Tencent's efforts to dominate the Chinese app economy is the *super app strategy*. Faced with growing competition, Tencent has increasingly focused on developing its "super app" WeChat (Goggin, 2021). Launched in 2011, WeChat morphed into a stand-alone super app with every iteration, offering instant messaging, social networking, payments, and video services all in one discreet mobile application. The engineers of WeChat envisioned this fully integrated, always-on use case as one with no "log out" button (WeChat Chatterbox, 2015). With the slogan "WeChat is a lifestyle," Tencent set out to morph into a platform for all sorts of social and technical interactions and economic transactions. For that reason, WeChat steered its branding efforts to labeling itself as a "tool" (WeChat Chatterbox, 2019), which speaks to developers, advertisers, and other institutional users, who are invited to further integrate with the app to access its 1.25 billion end-users. One significant development in this respect is the launch of Mini Programs in 2017. Allen Zhang, one of the main developers behind WeChat, envisioned Mini Programs to be similar to Web 2.0-era websites, which seamlessly integrates functionalities from different institutions all on one screen. WeChat serving as the infrastructure upon which such third parties can build, end-users would no longer have to leave WeChat, but could quickly access external products and services. Hence, WeChat has become much more than an app through which Tencent delivers its products and services. Deploying a super app strategy, the company developed WeChat as an infrastructure, a portal, and a platform.

By selectively opening the WeChat platform to external developers, Mini Programs greatly enriched the functionality of WeChat, while at the same time centralizing the app as a key access node in the app economy. This logic of super apps *expanding inwards*—by incorporating third-party functionalities and institutional connections—is an example of the ongoing platformization of the mobile ecosystem (Nieborg and Helmond, 2019; Steinberg, 2020). Put differently, as a cloud-based lightweight applet hosted on WeChat, Mini Programs are an iteration and further atomization of this logic. Unlike mobile apps that require downloads from different app stores, the Mini Program product is system- and hardware-agnostic. The size of external applets is limited to 12 MB, much smaller compared to other native apps. The naming of Mini Program was meant to distinguish itself from an "app" and to avoid WeChat being treated as a third-party app store, which is not allowed on Apple's App Store. Indicative of its *outwards expansion*, then, are the ways in which end-users can access the many thousands of Mini Programs outside of WeChat's boundaries: via a friend's referral, scanning Quick Response (QR) codes, or by using WeChat's search function.

In both its technical design and corporate positioning, WeChat has morphed into a "platform instance"—"a technical and economic platform configuration that facilitates connectivity and interactions among end-users and multiple partners" (. . .), which offers "different functionalities tailored to distinct user groups" (Nieborg and Helmond, 2019: 199). It did so by pulling Mini Program developers and advertisers into its app boundaries: there is no "Mini Program store," nor a distribution center. Tencent claims to have no editorial or curatorial power either and has offloaded the task to promote and distribute Mini Programs to its creators. Because of this, a common way for developers to generate attention to their applets is by embedding QR codes in various physical and virtual environments. It is worth highlighting that the everyday use of QR codes in China makes WeChat a highly portable and accessible platform infrastructure (de Seta, 2020).

Despite its lofty rhetoric as a neutral arbiter, and in line with its global peers, Tencent's expanding control over the app economy defies the company's positioning as a neutral intermediary. Much like Apple's App Store, the creation of Mini Programs is extremely formatted. To grant platform access to third-party developers, Tencent provides boundary resources that include SDKs, APIs, developer documentation, and review guidelines. In the creation of Mini Programs, it also enforces an extensive set of standards, design styles, as well as a strict set of rules on how Mini Programs should be shared on WeChat.[5] Different categories of Mini Programs come with predefined affordances. For example, there are e-commerce, booking, information, and enterprise Mini Programs that primarily service businesses and government institutions. The Mini Programs for individual end-users, on the other hand, have limited functionalities and are banned from conducting online sales and from the use of WeChat Pay.

Since 2017, in a move indicative of the process of financialization, Tencent invested in several Mini Program businesses that focus on e-commerce, third-party services, and education (itlaoyou.com, 2019). In addition, Tencent is the largest shareholder of Mini Program software-as-a-service companies WeiMob and Youzan. This approach of investor-cum-shareholder not only allows Tencent to generate a return on its investments, but it also enables the conglomerate to exert power vertically over the value chain through shareholding and board members nominations. Financially speaking, Mini Programs have become a key driver for Tencent's market share in Chinese mobile advertising. Hence, the process of financialization also involves strategies of financing to enhance control of the platform ecosystem.

Furthermore, much like how MyApp follows the logic of conglomeration, Mini Programs allow Tencent to leverage the content of its subsidiaries. However, unlike MyApp, which connects to Tencent's social-mobile-content ecosystem, Mini Programs provide a bridge between different corporate actors and state institutions, providing WeChat with infrastructural properties of a different kind. It is reported that the most used Mini Programs are in the life, online shopping, short video, and games sections (Aldwx, 2020), which transformed WeChat from a mere payment app into an e-commerce, booking, gaming, and short video app. By 2020, there were roughly 3 million Mini Programs, equivalent to the total available apps in China (CNNIC, 2021). For Tencent, the Mini Program strategy helps the company expand into business terrains which were not in Tencent's forte and it allows it to compete with domestic platform conglomerates such as Alibaba (e-commerce) and ByteDance (short video).

WeChat's history illustrates how Tencent derives much of its institutional power from three sources: first, similar to other platforms, WeChat provides boundary resources that govern the creation of highly app-dependent Mini Programs; second, Tencent provides vertically integrated institutional and financial support for Mini Program developers, from initial financing, to technical training, and the marketing and promotion of applets; third, by controlling WeChat as a key node in China's mobile Internet, Tencent's outsized role impacts market competition. As we demonstrated above, strategies of conglomeration and financialization are critical to these sources of institutional power.

Discussion and conclusion

This article shows that Tencent primarily accrued its power in the Chinese app economy through conglomeration and financialization, strategies typically associated with media companies. Combining these strategies with tactics of platformization and infrastructuralization, the company could turn its platform subsidiaries, MyApp and WeChat, into key gateways for content and service providers and super sticky destinations for end-users. Analyzing Tencent's mobile strategies, in turn, allowed us to revisit current theories on power in the app economy and expand the conceptual apparatus of app studies to acknowledge the crucial roles played by conglomeration and financialization. We retraced the evolution of Tencent's platform power in the mobile economy: From a leading market participant in China's app economy providing mobile entertainment via MyApp, Tencent quickly remade itself and turned WeChat into a platform in its own right with the introduction of Mini Programs. Tracing this corporate trajectory helps us to demonstrate that investments in and acquisitions of media content and entertainment can be highly effective strategies to gain a central position in the app economy.

As apps are always embedded within broader infrastructures and markets, Tencent's roadmap to mobile dominance has gradually shifted from controlling its own portal, to distributing of apps through the MyApp app store, to developing WeChat into a super app. Through the provision of a specific set of boundary resources, Mini Programs are highly integrated applets that are deeply embedded into the WeChat platform and far beyond. In other words, the conglomeration approach to platformization positions WeChat as the infrastructural gateway to mobile traffic, data, and revenue. However, as we have argued, Tencent's mobile dominance is just as much derived from institutional power mechanisms with a longer history: conglomeration and financialization. The strategic deployment of financialization as a corporate growth strategy, which includes founding the corporate venture capital Win–Win Fund, together with extensive mergers and acquisitions, have fortified Tencent's position in the vertically integrated mobile app ecosystem.

From a theoretical perspective, this examination can be seen as a contribution to the project of developing Asia as a method in platform studies. Doing so, we have tried to provincialize US platform companies. And, subsequently, to use the analysis of Tencent's corporate trajectory as an opportunity for theory building. The following step for future research is to more systematically theorize how platform power and platformization works across Asian contexts. As Chen (2010) points out, ultimately the objective of Asia as method entails taking inter-Asian connections, for example between China and India, or between China, Korea, and Japan, as the point of reference. Evidently, the emerging platform research on South Asia and East Asia increasingly provides the ground for such comparisons (Athique and Parthasarathi, 2020; Jin, 2015; Steinberg, 2019). Building on this research, the challenge, moving forward, is to gain insight in how processes of platformization, infrastructuralization, financialization, and conglomeration take shape across South Asia and East Asia, as well as to consider the variations in these processes in this region.

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Notes

1. The Variable Interest Entity (VIE) structure is composed of a wholly foreign-owned enterprise as the holding company registered in an offshore jurisdiction that controls operating companies in China through contractual agreements. The purpose of a VIE is to bypass national restrictions on foreign investments while allowing access to capital markets to distribute profits among foreign investors.
2. According to available statistics published by the CNNIC (2011), Tencent's media portal was popular prior to MyApp. Tencent Reading ranked fifth in 2010 and 50.4% of Internet users played Tencent games in 2010.
3. MyApp has consistently took up a quarter of China's Android app store markets, with 26% (AppInChina, 2021), 26% (2019), 21.28% (2017), and 24% (2016).
4. The growth rate in terms of active users for mobile app stores was 2.4% from 2016–2017, 1.7% from 2017–2018, 1.1% from 2018–2019. And 0.8% from 2019–2020 (iiMedia, 2020).
5. Specific rules are outlined in Weixin Mini Program Design Guidelines, Mini Program Development Guide, Weixin Mini Program Access Guide, Weixin Mini Games Access Guide, Weixin Mini Games Development Guide, and Weixin Mini Program Platform Terms of Service and Operation Rules.

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