Policy Overview

Digital Platforms for Ride-Hailing and Food-Delivery Services in China

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IT for Change | June 2019

This report was produced as part of the research project ‘Policy frameworks for digital platforms - Moving from openness to inclusion’. The project seeks to explore and articulate institutional-legal arrangements that are adequate to a future economy that best serves the ideas of development justice. This initiative is led by IT for Change, India, and supported by the International Development Research Centre (IDRC), Canada.

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1. Introduction: China's Long March Toward an Informatized Economy

Information and Communication Technologies (ICTs) are widely acknowledged to have great potentials for economic and social development, especially in developing countries (Imaizumi, Kuek, Ipeirotis, Paradi-Guilford, & Fayomi, 2015). China has witnessed economic and social transformation brought about by ICTs at an unprecedented pace. Informatization of the national economy has been combined with industrialization at the highest-level of policy making, forming what scholars have called "a twin-track strategy" (Dai, 2002, p. 145). The twin track strategy has allowed China to "leapfrog" into the digital age with remarkable progress in information infrastructure and economic and social development (Dai, 2002; Zhao, 2007), reflected in the rapid growth of internet adoption and service sectors pertinent to the internet industry. In less than two decades, the number of internet users in China has risen from 22.5 million in 2000 (a penetration rate of less than two percent) to 730 million in 2017 (a penetration rate of 53.2 percent) (CNNIC, 2006, 2017a). The fact that new internet users are more likely to connect to the internet via mobile phones, a common trend seen in developing economies such as India and South Africa, suggests that mobile phones have become hot beds for the growth of the app economy.

The information sectors, as a result, have enjoyed a faster growth rate than China's overall gross domestic product (GDP) (China Academy of Information and Communications Technology (CAICT), 2015; Schiller, 2008).[1] In 2002, the information economy accounted for 10 percent of China's GDP, and its proportion climbed steadily to 30.3 percent in 2016—approximately 22.6 trillion RMB ($3.35 trillion) (CAICT, 2015; 2017). Home-grown internet companies such as Baidu, Alibaba, and Tencent (the BAT trio), are among the top ten largest internet companies in the world (Statista, 2017). Their extraordinary success has even convinced skeptics about China's ability to become the "lead leap frogger" in innovations in the mobile age (Chua, 2017).

Techno-nationalism has left a distinctive mark in China's policy choices for economic development and national security and has also appeared in some of the most recent policies for telecommunication industries

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In China, techno-nationalism—the belief and practice of developing national economy and prestige through advancing technological progress—can be traced back to the 19th century when the elite class combined the undertaking of fighting against foreign invaders with modernizing the country's technologies and institutions (Qiu, 2003). Techno-nationalism has since left a distinctive mark in China's policy choices for economic development and national security (Feigenbaum, 2003) and has also appeared in some of the most recent policies for telecommunication industries (Suttmeier & Yao, 2014; Zhao, 2010). Since 2013, the new leadership of President Xi Jingping and Premier Li Keqiang have continued with this mind-set, taking it further to assert and promote the idea of "cyber (or internet) sovereignty". This puts informatization, along with internet security, in the domain of national sovereignty and strategic development (Bishop, 2014).

Among others, a tight control by the state has always been a critical factor in China's internet industry and digital environment. Reports from *Freedom House* listed China's internet as "not free" since 2009 for reasons of censorship, controlled cross-border information flow, and lack of privacy and net neutrality. In 2016 and 2017, for

1 This report follows the definition of information economy by China Academy of Information and Communications Technology (2015) to refer to the new economic pattern that centers on digital information as the core production factor and relies on information networks and information technologies as the driving forces of economic development.

example, internet condition has been ranked as worst. Since 2015, internet users' rights have been violated in their entirety (with a score of 40/40, indicating the lowest rank) (Freedom House, 2015; 2016; 2017).

Furthermore, obstacles to access remain daunting for Chinese internet users. Unequal internet access is likely to widen existing social and economic inequality in an increasingly internet-dependent society (World Wide Web Foundation, 2014). Chinese urban residents are twice as likely to have internet access as their rural counterparts, with an internet penetration rate of 71percent and 35.4 percent, respectively (CNNIC, 2018). The internet is also adopted faster in urban China than rural China (ibid.). China ranked below the median score on the Networked Readiness Index—an indicator developed by the World Economic Forum to measure how well an economy is using ICTs for boosting its competitiveness and well-being. China ranked 59 out of 139 countries and presents a mixed picture in leveraging the advantages of ICTs for improving its economy.

On the brighter side, quality education systems have prepared the Chinese with necessary education and skills for a digital economy, and the recent development of broadband connections has made access to the internet more affordable. However, the fact that "China maintains high taxation on businesses (67.8 percent) and has lengthy and complex processes to set up a new business" (World Economic Forum, 2016, p.28), suggests a discouraging legal and business environment for innovation.

To summarize, in the context of a leap-frogging China, some people and certain regions are better equipped than others to reap economic and social gains—the so-called "digital dividends" (World Bank, 2016)—from the informatized economy.

In particular, the "twin track" development strategy falls short in bringing equitable benefits for the state, enterprises (capitals), and more noticeably the workers. Behind China's stunning growth statistics in the past three decades is the sweat and, on some occasions, blood of ordinary workers (Blanding & White, 2015; Ngai, Chan, Selden, & Chen, 2015). In China, factories employ hundreds of millions of workers, and in the electronic manufacturing industry, a majority of workers are cheap migrant labor from rural regions (Hong, 2014). Nearly two-thirds of migrant workers in China have not signed formal labor contracts—those that grant workers legal protections under China's Labor Contract Law (2008). Instead, a majority of workers are working under the agreement of labor relations. A labor relations agreement is a peculiar way devised by employers to avert the enforcement of the Labor Contract Law, which is already weakly implemented. Labor relations agreement prevents majority of migrant workers from getting adequate access to employment benefits, social security programs, health insurance, and labor protections. This makes them an easy target for employer abuse (China Labor Bulletin, 2016).

The historical and socio-economic context sketched above sets the stage for current policies and regulatory frameworks regarding digital platforms in China. Nonetheless, state leaders constantly seek to engineer "technological fixes" (Hong, 2017a, p. 5) for China's development and prosperity. Against this background, what is the state of play of the platform economy in China? How can digital infrastructures and regulatory frameworks for the development of the platform economy in China be characterized? Can the platform economy provide satisfactory "technological fixes"?

By examining case studies on digital platforms for ride-hailing and food-delivery services, this overview aims to address these questions and chart the digital policy landscape for the platform economy in China. Section two presents a review of two relevant categories of policies: internet laws, policies, and regulations, and government documents on development strategies pertaining to digital economy. There is a continued tendency toward developmentalism and pro-innovation rhetoric, which to a certain degree contributes to consolidating power in the

hands of the central government. Section three maps out and assesses existing regulations and policies on these labor platforms at both national and local levels (where applicable). It demonstrates how digital infrastructure, diverse actors in specific sectors, and the market force driven by global capitalism, collectively and contentiously shape the praxis of platformization of service work in China. This report concludes with a brief reflection on the gaps in the state of play of the governance of digital labor platforms in China.

2. The Digital Policy Landscape in China

Given how deeply entrenched the "twin-track" strategy is, two broad categories of regulations and policies have shaped the overall digital infrastructure and environment in China, with one in the domain of internet governance and the other in national development strategies. Consequently, digital policies in China inherently sway in multiple directions: to boost national economy, nurture domestic companies' economic competitiveness, safeguard national (cyber) security, and assist in maintaining social stability. When regulations and policies meet market forces and various stakeholders and actors in the industry and civil society, the implementation and effect of these digital policies are rife with contradictions and inconsistencies.

2.1 Internet laws

Though the idea of internet sovereignty is not new to China and was first articulated by Chinese leaders around 2010, the Cyber Security Law (2017*)* is a landmark legislation, which recapitulates and systematizes prior internet governance thinking. The Law defines the contemporary digital environment in China in a number of ways.

First, it introduces and imposes systematic personal data and privacy protections for the first time in a nation where the data industry was loosely regulated. Before the Cyber Security Law, there were rules and regulations in place for information protection—Regulations on the Security Protection of Computer Information System (by the State Council in 1994), Administrative Measures for the Graded Protection of Information Security (by the Ministry of Public Security and other authorities in 2007) and Decision on Strengthening the Network Information Protection (by The NPC Standing Committee in 2012), to name a few. Nonetheless the Cyber Security Law makes substantial steps towards the protection of personal data and privacy. It aligns with the nine principles outlined in the APEC privacy framework (Deloitte, 2017), which includes preventing harm, notice (informed users), collection limitations, consent for uses of personal information, choice, personal data integrity, security safeguards, access and correction, and accountability (APEC, 2005).

Expansion of the government's role in internet governance is also achieved through the mandate of data localization. It requires all data about Chinese citizens collected within China to be stored in domestic servers and is non-transferable to overseas servers without prior permissions

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Secondly, the Cyber Security Law enforces the rights and obligations of the government, network operators, and users respectively in protecting cyber security and personal data. The most significant aspect in delineating the legal responsibilities for different parties, however, is with regard to the role of so-called network operators. The Law defines "network operators" as "the owners and administrators of networks, as well as network service providers" (Article 71). This broad definition expands the jurisdiction of the Cyber Security Law significantly. Apart from overseeing internet-content providers and traditional telecommunication companies, the Law is now also applicable to any enterprises and institutions involved in offering online services and collecting citizens' personal

information. This may range from financial institutions (e.g. mobile payment apps), and insurance companies to providers of services for cybersecurity and/or networks (such as virtual private network, VPN).

This expansion of the government's role in internet governance is also achieved through the mandate of data localization. It requires all data about Chinese citizens collected within China to be stored in domestic servers and is non-transferable to overseas servers without prior permissions. It also requires overseas enterprises that operate in "critical information infrastructure" to store data that is gathered and generated in China within mainland China.

Thirdly, China's Cyber Security Law, with the underlying framing of information networks (and data generated through and by them) as pertaining to national security, has a profound impact on access/connectivity and online expression. As discussed above, access to the internet is distributed unevenly between urban and rural China. China is also "a working-class network society"(Qiu, 2009), a society where internet users are dominated by low-to mid-income citizens and those with a high school diploma and lower educational attainment (approx. 80 percent). In 2017, about 80 percent of Chinese internet users earn less than 5,000 RMB per month (approx. $770) (CNNIC, 2018). A series of government-led regulations lined up in the aftermath of the passage of Cyber Security Law, including most notably, "cleaning-up" VPNs, imposed internal censorship on internet platforms for news management and online expression.[2] These heavy-handed censorship measures raise the technological and financial barriers for internet users who are interested in seeking diverse sources of news and information. Take the use of VPNs as an example. After the Cyber Security Law came into effect, a large number of domestic VPNs were banned. Now, internet users who plan to keep using VPNs will have to turn to foreign VPN suppliers, which are likely to be more expensive. Scholar Margaret Roberts describes these barriers as a form of invisible "informational tax" of Chinese regulators that imposes extra financial burdens on the consumption and distribution of uncensored information (Ables, 2018). Informational tax puts financially and technologically worse-off citizens in a more unfavorable position than their better-off counterparts.

At the moment, while concrete measures for law enforcement are in the making, scholars discover a consolidation of power in the hands of Cyberspace Administration of China (CAC, founded in 2014) for guiding other government bureaus on law enforcement (Ahmed & Weber, 2018). Through joining efforts with various regulatory ministries, departments and bureaus, CAC has also become a central administrative office, formulating an array of internet-related policies that go far beyond the realms of online content management and cyber security, extending to, for example, promoting the construction of capital market and financial technologies (fin-tech) and standardizing crowdfunding platforms.[3]

China's Cyber Security Law is emblematic of the long-standing protectionist attitude held by the Chinese government toward regulating telecommunication and internet sectors (Ahmed & Weber, 2018; Zhao, 2010) and equally long-standing geopolitics of internet governance (Aouragh & Chakravartty, 2016; H. Shen, 2016; Yeo, 2016). The Law also reflects the broad techno-nationalist ambitions embraced by state leaders. President Xi, for example, claimed that "there'll be no national security without cybersecurity, and no modernization without informationization" (China Daily, 2015). In this sense, the Cyber Security Law is inspired by the same rationale that is behind high-profile state-issued strategic documents, including *13th Five-Year Plan for Major Science and Technology Projects* (2016) and *1*3th Five-Year Plan for Informatization (2016), National Cyberspace Strategy (2016),

2 Among others, the highest office in charge of Internet governance in China, Cyberspace Administration of China (CAC), issued two new rules in September 2017 for online content management—namely, "Management Regulations on Online Public Accounts" and "Management Regulations on Internet Groups." Both management regulations allocate the responsibility to service providers (the platform companies in most of the cases) for monitoring online content in order to "protect national security and public interests."

3 For a complete list of regulations and policies CAC leads to or jointly formulate, see http://www.cac.gov.cn/

International Strategy for Cooperation in Cyberspace (2017) and so on. These documents reinforce the entanglement of technological development with the nation's economic growth.

2.2 Policies devised to innovate and regulate (digital) economy

According to the China Academy of Information and Communications Technology (CAICT)—the official research institute under the supervision of Ministry of Industry and Information Technology (MIIT) of China—digital economy is defined as including both the emerging business models that ICTs give rise to and the transformed traditional sectors because of ICT— including manufacturing, service, transportation and so on (CAICT, 2017). It is well-documented that the Chinese government's policy choices regarding ICTs are characterized by the tension between China's need to be an integral part of a global (digital) economy and an authoritarian government's need to maintain domestic political stability (Hong, 2017a; Zhao & Schiller, 2001).

In the aftermath of the financial meltdown in 2008, a slow-down in the global economy offered a fertile field for Silicon Valley to experiment with the idea of developing digital platforms to link gig jobs with a vast number of people in need of extra cash—namely, the un- or under-employed (Srnicek, 2016). This new wave of a global platform economy and a slowing down national economy forced China's new leadership to pivot technologies to rejuvenate and restructure the economy that has been relying heavily on manufacturing exports and foreign direct investment (FDI) (Hong, 2017b).[4] In 2015, Premier Li Keqiang proposed an "Internet Plus" Action Plan in his Government Work Report, which later became the signature catch-all government directives standing for the latest version of the informationization strategy (Li, 2015; State Council, 2015). Alongside "Made in China 2025," the Internet Plus, for Li, is "to integrate the mobile Internet, cloud computing, big data, and the Internet of Things with modern manufacturing, to encourage the healthy development of e-commerce, industrial networks, and Internet banking, and to guide Internet-based companies to increase their presence in the international market" (Li, 2015).

'Plus' implies internet technologies being a propelling and fusion agent. A government directive on the implementation of the Internet Plus action plan released in July 2015 specifies four means by which Internet Plus would precipitate "further integration of the outcomes generated from the Internet innovations with the economy and the society" (State Council, 2015).[5] They are: economic growth, social service, the ICT infrastructure, and a more inclusive and open environment for development. As Hong pointed out, the Internet Plus strategy aims to treat the internet and all related network technologies as "the general-purpose catalyst for innovation, structural reforms, and the new industrial revolution" (2017b, p. 1487).[6]

The tech-oriented national development strategy also speaks to a profound change occurring to the Chinese labor market and economic structure in the past five years. Since 2014, the tertiary industry (48.1 percent) has contributed more to China's GDP than the manufacturing industry (42.7 percent). Since 2013, the service industry has employed more workers than the other two economic segments: agriculture and the manufacturing industry (National Bureau of Statistics of China, 2015). From 2014 till 2017 both GDP contribution and the employment number in the tertiary industry has grown steadily and at a faster pace than the other two, making service sectors the most important industry in China to absorb the labor force. The Internet Plus strategy in general offers an encouraging environment for entrepreneurs to transform the service industry into one that combines traditional service forms with Online-to-Offline (O2O).

4 To be clear, China is among global political and economic forces and actions to precipitate the development of platform capitalism. However, Srnicek (2016) has largely overlooked China's role in shaping platform economy in his documentation of the rise of platform capitalism in the developed world.

5 Author's translation.

6 China's rise in platform capitalism has largely been ignored in Western scholarship.

Digital economy in China has witnessed a stunning development in the past decade. An immediate indicator is the booming online retailing, wherein sales exceeded $1 trillion in 2017, not only dwarfing that of the U.S. market ($455), but also accounting for 40 percent of the global e-commerce market

Digital economy in China has witnessed a stunning development in the past decade. An immediate indicator is the booming online retailing, wherein sales exceeded $1 trillion in 2017, not only dwarfing that of the U.S. market ($455), but also accounting for 40 percent of the global e-commerce market (Tong, 2018). The rapid development of the e-commerce market precipitates the growth of relevant service sectors including logistics, transportation, and customer services. Both internet giant companies and the government place tremendous investment and policy incentives in R&D initiatives in artificial intelligence (AI) technologies. The State Council announced its ambition to develop AI as part of its blueprint for Made in China 2025 and for the Robotics industry. The National Development and Research Commission (NDRC) in China - the top office for economic planning - appointed Baidu as the leader in a freshly launched national engineering laboratory for the research and application of 'deep learning' that is expected to have a budget of billions of dollars (Hu, 2017). Alibaba also announced investment plans worthy of $15 billion in building AI labs (Larson, 2018). AI technologies are anticipated to be widely applied to fields such as autonomous cars, image and facial recognition, hardware design, and the military (Ding, 2018). Government-backed support and resources coupled with the rise of Internet titans has created a great experimentation era for tech companies and entrepreneurs.

2.3 Two distinctive traits about digital economy in China

Long-standing institutional support and policy orientation toward combining informationization with economic development set in motion a distinctive Chinese digital economy with two extraordinary traits.

First is the surge of Chinese internet companies as important global players. In particular, the three leading Chinese internet companies—BAT—are direct rivals of their Silicon Valley counterparts (Google, Amazon, and Facebook) in user size, traffic volume, revenue, and market capitalization (Jia & Winseck, 2018). Take Alibaba as an example. Before its record-breaking IPO in NYSE in 2014, the company was the marketplace for numerous counterfeits sold on its website, but otherwise largely unknown to the western world. Prior to 2014, Alibaba as the online marketplace (previously named 1688.com) already had over 700,000 paying members and $22.7 billion worth of transactions completed through its e-payment app Alipay alone (Erisman, 2016, p. 143). Connecting small business importers and exporters in over 240 countries (ibid.), Alibaba's global presence today is characterized in its stronghold in e-commerce, with its latest investment in Indonesian e-commerce platform Tokopedia (Russell, 2017) and expansion into sectors such as newspapers and logistics. BAT's expansion beyond China shows the transnational logic of capital. It also indicates an alignment with the outward-looking and global expansion strategy adopted by China, such as establishing cultural agency Confucius Institute overseas (Keane & Chen, 2017).

The second characteristic of the Chinese digital economy is the emergence of mega-platforms and cross-cutting applications. WeChat is representative of what a mega-platform looks like. It is a "super-sticky" app (Y. Chen, Mao, & Qiu, 2018) that glues together an array of different horizontal functions, ranging from social interactions, online and online-to-offline monetary transactions, access to city and public services and charity organizations, and so on. More than 93 percent of Chinese internet users are WeChat users in 2018, growing from 91percent from last year

(CNNIC, 2017b, 2018). The closer WeChat reaches the saturation point, the deeper it penetrates into the social and economic fabric of Chinese digital life, and the more dependent Chinese society as a whole becomes on it. WeChat is already the top app for work-related communication among Chinese organizations and the most favoured choice for government agencies to release their policy information (often more popular than official websites) (Y. Chen et al., 2018; China Tech Insights, 2017).

Third-party mobile payment methods are a case in point for cross-cutting applications.[7] At the end of 2017, every seven in 10 Chinese internet users (531 million) had used their mobile phone for payment (CNNIC, 2018). For more than 70 percent of Chinese netizens, mobile payment apps have surpassed cash and bank cards as a means of offline transactions (such as groceries shopping) (CNNIC, 2018). Mobile payments had totaled 81 trillion CNY ($12.8 trillion) by October 2017, and more than doubled from 38 trillion CNY ($5.7 trillion) in 2016 (Song, 2018; The Economist, 2017). China's GDP in 2016 and 2017 are $12.3 trillion and $11.2 trillion, respectively. China's third-party mobile payment market is controlled by a duopoly—Alipay owned by Alibaba and WeChat Pay owned by Tencent, which have facilitated more than 90 percent of the transactions.

The explosive growth of mobile payment apps in China can be attributed to a number of factors: the absence of a traditional credit system, the rapid adoption of mobile phones, and the habit of online shopping established by Chinese in the past decade that makes them familiar with third-party online payment methods like Alipay. Innovative user interfaces that allow users to transfer money via text message or simply by scanning a QR code also contribute significantly to the rapid adoption of mobile payment (Y. Chen et al., 2018). QR codes scanning were responsible for facilitating $5.5 trillion worth of transactions in 2016 (Leng, 2017).

Non-bank mobile payment apps have developed alongside increasingly tight regulation from the established banking system. In June 2010, the People's Bank of China (PBC) officially announced the Administrative Measures for the Payment Services Provided by Non-financial Institutions,[8] which mandated all non-financial payment service-providers to seek approvals and licenses from PBC. Two years later, a national technical standard (13.56 MHz) was set and launched for mobile payment (J. Shen, 2012). This standard was developed by UnionPay, an association of Chinese banking industries. The licensing system and the establishment of the mobile payment standard helped level the playing field and placed third-party payment platforms on a fairer footing in the early 2010s (Miao & Jayakar, 2016). However, in 2017, PBC has implemented ever stricter regulations on mobile payment apps, which mandated that all third-party transaction data be channelled through its newly-constructed clearing house (Wildau, 2017), capping the amount of money transferrable via QR code at 500 CNY, and in 2018, implementing multi-level verifications for QR code-triggered transactions (Leng, 2017). These economic regulations on mobile payment apps help prevent money laundering, fraud, and other illicit transactions in the digital environment, although some worry about the expansion of the citizen surveillance apparatus given the involvement of CAC (Wildau, 2017).

Mega-platforms and cross-cutting technologies like mobile payments and the increasing adoption of AI technologies in various domains indicates a profound feature of the Chinese digital infrastructure that is crucial to the development of digital labor platforms. These super apps and underlying technologies straddle different platforms that facilitate access to services and the infrastructure that serves as the foundation for platforms or applications to connect. In other words, they become quasi-infrastructure; a phenomenon theorized by scholars as "infrastructuralization of platforms" (Plantin, Lagoze, Edwards, & Sandvig, 2018) that also applies to companies like Google. What makes the Chinese mega-platform and mobile payment apps (and forthcoming AI technologies)

7 Third-party mobile payment methods or applications refer to the digital means for monetary transactions that are fulfilled by non-bank institutions.

8 Full text available at http://www.gov.cn/flfg/2010-06/21/content_1632796.htm

distinctive is their ability to serve as the quasi-digital infrastructure to bridge previously discrete domains. For example, social e-commerce—online retailing and purchasing activities enabled and facilitated through social media—has witnessed rapid growth and was reported to complete $170 billion worth of transaction in 2018 (*Xinhua News, 2018)*.

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2.4 Discussion

The digital policy landscape in China is characterized by a strong and proactive role played by the central government that has offered sustained support for the development of the digital economy. While the internet governance legal framework almost makes an ideological turn toward nationalism under the leadership of President Xi, the policies of the digital economy are a mix of pro-business and tightened regulations. A direct outcome of this is the rapid growth of the internet economy and the ascendency of Chinese internet companies. These giant corporations have begun to play a significant role in shaping every aspect of Chinese daily life and its immersion into a new digital infrastructure for public and private services. In areas of online censorship and public information services, the central government also has started to leverage the influence of these giant companies (Chen et al., 2018). The increasing global presence of these companies resonates with the government's aspiration to seek international recognition embodied in other strategies such as One Belt One Road.

The map of digital policy, however, also shows the lack of viable channels for grassroots organizations and members from civil society to even voice their concerns and opinions, let alone to participate in policy-making. The empirical studies are scant to address whether the strong institutional support and the booming digital economy will translate into positive development of digital platforms and benefits to the people affected.

3. Mapping Platformization in Policy and Praxis: The Case of Ride Hailing Apps and Food Delivery Apps

Digital platforms are regarded as significant jigsaws in the blueprint of the Internet Plus Action Plan.

In most of the Chinese government documents, the platform economy is framed misleadingly as "sharing economy".[9] In 2016, the term "sharing economy" first appeared in the Report on the Work of the Government in 2016. The report sent a strong signal about the government's embracing of digital platforms as the vital force for economic growth, social welfare, and sustainable development. Premier Li urged that "[we] need to move faster to develop new technologies, industries, and forms of business, boost the development of a sharing economy through institutional innovations, create sharing platforms, and develop emerging industry clusters such as high-tech and modern service industry clusters, thus creating strong new engines" (Li, 2016). Without offering a nuanced typology of different platforms such as those for assets sharing or for on-demand services, Premier Li singled out sharing as the definitive characteristic of all digital platforms. Since March 2016, there have been a dozen or so government guidelines or directives on the platform economy (see Appendix). Akin to the narrative around

9 I choose to use platform economy rather than sharing economy throughout the paper to avoid confusion and ambiguity.

Internet Plus, the platform economy in these government policies is framed largely in economic and technocratic terms. Firstly, it is among the identified driving forces in the new economy, along with buzzwords like innovation, mass entrepreneurship and innovation, and artificial intelligence and so on. For example, Guiding Opinions on Promoting Development of the Sharing Economy (No. 1245 [2017] of Fagai Gaoji) states that the platform economy is:

> "of great significance to promoting the supply side structural reform and in-depth implementation of innovation-driven development strategy, to promote mass entrepreneurship and innovation, to cultivate new economic development momentum and to transform and enhance the traditional momentum" (2017).[10]

Other governmental guiding documents expand the scope of financial and loan incentives for more tech start-ups in order to "push governmental departments and offices to purchase new products and services" from these innovative firms.

Secondly, these official documents often associate platform economy with green consumption and by extension a more responsible metropolitan lifestyle. The 13th Five-Year National Informatization Planning (No. 73 [2016] of the State Council) is typical in characterizing platform economy as being "open, convenient, economical, and oriented to environmental protection."

Digital labor and service platforms (such as for taxi services) are among the fastest growing sectors in China. The country's platform economy market is estimated to have involved 700 million users and 70 million workers and facilitated more than 49 billion CNY ($7.7 billion) worth of transactions (China's National Information Center (SIC) & Internet Society of China's Commission on the Sharing Economy (ISCCSE), 2018). Participant workers in the platform economy have grown steadily by 10 million annually, since 2015 (SIC & ISCCSE, 2016, 2017, 2018).

The most prominent digital labor and service platforms in China are those for taxi services (ride hailing apps) and for takeaways (food delivery apps). Nowadays, booking ride services and ordering takeaways via smartphones has become a daily habit for a majority of Chinese urban residents. Studying the policy and practical implications of these two types of digital platforms will offer valuable insights into the general state of play for the platformization of work in China.

3.1 Platformization of Ride-hailing Services

In 2017, 278 million people used apps for traditional taxis and 217 million for private hires in China, which in combination accounts for more than 50 percent of Chinese internet users (CNNIC, 2017, p. 26). A total of 21 million drivers use platforms to get and fulfill ride requests, growing from 18 million from last year (SIC & ISCCSE, 2017, 2018).

The first car service app in China was Yidao Yongche which was launched in 2010. Yidao operates like Uber in that it only allows private car owners to undertake ride services. Unlike Yidao and Uber, DiDi Chuxing (hereafter DiDi) initially started with offering traditional taxi services and later on expanded to offer a variety of car services including taxis, private car services, designated drivers, mini-buses, and so on. Today, DiDi is the monopoly player that controls 94.6 percent of the internet-enabled ride-service market (Xiao, 2017), delivering 25 million rides on a daily basis. Additionally, there are more than half a dozen active ride-hailing platforms in China, including Shouqi Yueche, developed and owned by the largest state transportation enterprise called Shouqi Group.

10 Author's translation.

DiDi's financial strategy resembles that of the leading Chinese and global internet companies in its integration into the global financial market (Jia & Winseck 2018). Among top investors in DiDi are tech companies such as Apple, Softbank, Tencent, and Alibaba. In addition to these private funds, DiDi also attracts investment from prominent state-owned enterprises like China Life Insurance, the largest life insurer in China, and China Investment Corporation, a sovereign wealth fund that manages China's foreign exchange reserves and reports to the State Council.[11] Globally, DiDi, now with a comparable market valuation with Uber, has expanded to Brazil, Europe, Africa, Middle East, Southeast and South Asia, and North Africa.

Partly because of the booming ride-hailing market, the Chinese government outpaces governments elsewhere in taking the initiative to regulate ride-hailing platforms. China became the first country in the world to legalize ride-hailing platforms. Interim Administrative Measures for the Business of Online Taxi Booking Services, jointly passed by seven State Ministries and led by the Ministry of Transport, took effect in November 2016 (hereafter Interim Measures). The choice of using "online taxi-booking" (*wangyueche* in Chinese) in the official document indicates that it places the regulatory parameter for digital platforms squarely along with taxi services and the urban public transport system. The traditional taxi industry in China, as in most of the countries, is under strict state regulation. Tensions thus arise because ride-hailing apps like DiDi allow both taxi drivers and private drivers to access the app-facilitated online market for transport services, although the service each group of drivers is able to offer through the app is different. Nonetheless, legal regulation on drivers seems to apply differently, since the taxi drivers need to abide by the existing local regulations for the taxi industry but the private car owners face a much more ambiguous regulatory environment.

The Interim Measures set the rules and license or certification system for platform companies, vehicles, and drivers. It requires the platform companies to, among other things:

1. maintain their servers in mainland China (Article 5, Clause 2)
2. apply for and obtain an Online Taxi Booking Business Permit from the corresponding competent administrative department of taxis (Article 6)
3. ensure network information service recordation[12] to the competent department of communication at the provincial level at its place of registry (Article 10)
4. provide database access to and cooperate with government authorities
5. conclude full-time labor contracts or part-time services agreements with drivers, depending on the length and frequency of the drivers' services (Article 18)
6. give notice to the public about the promotions, bonus, reward information, ten days in advance

Several requirements listed above are imposed in accordance with the Cyber Security Law. In addition, to differentiate from traditional taxi services, the Interim Measures also set criteria for vehicles allowed to be part of ride-hailing platforms:

1. To be less than eight years old or have logged less than 600,000 kilometers (Article 39).
2. To have 7 or less seats equipped with satellite positioning and emergency alarm devices (Article 12).
3. To obtain a Road Transport Business License and register for passenger transport (Article 13).

According to the Interim Measures, Drivers for ride-hailing platforms need to:

1. have more than three years of driving experiences with less than 12 penalty points in the past three years, among other records for safe driving (Article 14)
2. go through the criminal record check implemented by the Public Security (Article 14)
3. apply for and obtain Road Transport Practitioners Qualification Certificate (Article 15)
4. meet other criteria set by the local authorities

11 State Council, the highest administrative authority in China, is chaired by Premier and consists of the heads of chief cabinets.

12 Recordation means registering relevant information at the concerning department of communication, including Business Permit, Operator's ID, etc.

The Interim Measures set preliminary criteria for both vehicles and drivers nationwide, but they allocate the responsibilities for "guiding the administration" of online taxi bookings to the transport departments at the levels of province or autonomous region and the responsibilities for "implementing the administration" of online taxi booking to corresponding transport departments of the municipal level, respectively. It is crucial to note that Interim Measures for the ride-hailing platform market in China run counter to the character of centralization of regulatory power as discussed in the previous section for internet governance. The real regulatory power in relation to the ride-hailing sector lies more in the hands of local jurisdictions than the central government.

This regulatory vacuum gives rise to diverse localized regulations for ride-hailing services, which lead to diverse disparities and restrictions. By the end of 2017, 24 provinces have issued their own versions of guiding opinions on the administration of ride-hailing apps, 133 municipal governments (including Beijing) have passed implementation bylaws for the ride-hailing market. There were 86 other published draft bylaws in 2018 in the public domain, for comments (SIC & ISCCSE, 2018). Disparities in the local regulations center on differed business licensing schemes for vehicles and certification schemes for drivers.

Beijing's municipal rule on ride-hailing services is among the strictest in the nation. It mandates a "double-local" rule—that is, only drivers with Beijing residence registration, and operating vehicles with Beijing plate numbers are eligible to work legally on the platforms

For example, Beijing's municipal rule on ride-hailing services is among the strictest in the nation. It mandates a "double-local" rule—that is, only drivers with Beijing residence registration, and operating vehicles with Beijing plate numbers are eligible to work legally on the platforms. Other cities impose relatively loose restrictions on the eligibility of drivers, but strict rules on vehicles. Shenzhen, a migrant city in southern China, allows those without local residence permits to become ride-hailing app drivers as long as they meet criteria under criminal record checks, driving history, and so on. Overall, three quarters of city transport departments impose local residence mandates for Road Transport Practitioners Qualification Certificate (Ma & Li, 2017), which legally precludes migrant workers from becoming ride-hailing platform drivers. Even for DiDi, as of June 2018, it had operational licenses in only 51 cities out of the more than 400 cities where it operates (Yue 2018). Legitimate platform drivers on DiDi are reported to account for a meager 0.6 percent of the entire workforce (ChinaNews, 2017). Legal constraints at the local levels force most of the drivers out, also putting them at greater risk of fines and police-led crackdowns. This undermines their labor rights and prevents them from benefiting from the booming platform economy.

The platformization of ride-hailing services seems to bring divergent trends. On the one hand, DiDi, as the leading industry player, is in an ideological alignment with the technocratic rhetoric of restructuring the economy through network technologies. The central government and DiDi reap most of the gains from the booming ride-hailing services; the former, politically and the latter, economically. However, it is unclear whether benefits are distributed to drivers in a just fashion since not only is the leading platform company de facto illegal in over 300 cities which inadvertently engender its registered drivers, but drivers also face localized discrimination against their migrant workers' status.

Platform-enabled driving is promoted by both the company and central government as the benign solution to absorb millions of newly laid-off factory workers or under-employed workers. However, in the terms of service of DiDi (Article 9), it is explicit that the relationship between drivers and the platform is an "affiliated partnership."

The terms deny any direct or indirect labor relations between drivers and the platform and by extension, end up denying the application of Labor Law.

Ironically, DiDi constantly resorts to the job-creation rhetoric, performing the "cultural work" (Irani, 2015) of sublimating the platform's pursuit of private interests as a social service supportive of the national strategy for economic restructuring. For example, in 2016, DiDi claimed to have created 17 million flexible jobs and stressed that 2.4 million jobs were taken by workers from sectors affected by the national initiatives to cut excessive industrial capacity (e.g. steel and coal production sectors) (DiDi, 2016). Along with job creation figures, DiDi tends to highlight how platform drivers represent a new type of flexible work that helps mitigate the infliction of an economic slowdown on ordinary workers.

3.2 Platformization of food-delivery service

As of February 2017, there are 322 million food-delivery app users in China, with a year-on-year growth rate of 66.2 percent (CNNIC, 2018). There used to be three dominant food-delivery apps, namely Baidu Deliveries, Ele.me, or Meituan Waimai. In August 2017, Ele.me acquired Baidu Deliveries, and at present, the online food-delivery market is controlled by Meituan Waimai and Ele.me, which in combination control 90 percent of the domestic market. Meituan,the market leader (62 percent), is reported to have fulfilled 18 million orders on a daily basis, with 0.5 million active riders (SIC & ISCCSE, 2018). Ele.me was reported to have employed more than one million carriers in 2016 (CNNIC, 2017).

Meituan Waimai belongs to Meituan Dianping—an internet company that offers local services for customers, including booking services for hotels, restaurants and movie tickets, on-demand takeaway, and retailing services. Its subsidiary company includes Mobike—the famous bike-sharing platform. Meituan Dianping went IPO in September 2018, with an initial market valuation of $53 billion. Its largest investor is Tencent. Ele.me was acquired by Alibaba in 2018. Though the online food-delivery market seems to be divided between Ele.me and Meituan, the actual controllers are Alibaba and Tencent. This proves once again the dominance of the leading internet companies in the Chinese digital economy.

Even as popular discourse frames online takeaway business as part of the internet-enabled new economy, regulations and policies on online food delivery in general are known to be lagging. Measures for the Supervision and Administration of Food Safety in Online Catering Services (hereafter Food Safety Measures), passed by the Food and Drug Administration of PRC, is the only regulation in effect (on January 1, 2018) in China for online food-delivery. The measures outline the responsibilities of online catering service providers (including third-party platform companies as well as catering restaurants) for food safety and consumer protection. Specifically, among others, the Food Safety Measures detail the requirements for the third-party platform companies to obtain relevant business licenses, register with the local competent communication department, ensure the use of "innocuous and sanitary" carriers and boxes for food, maintain information consistency between online ads and offline offerings, and protect consumer rights, such as the right to know and, protection from sham promotions. Only one article (Article 12) touches upon delivery persons, requiring them to, "maintain personal hygiene, use safe and non-hazardous delivery containers, keep containers clean", and ensure food is not contaminated during the delivery thereof.

There are no laws or regulations that clarify the relationship between riders and platforms. The platform companies seem to have the final say in defining the relationship between them and riders. Meituan, for example, in its user agreement, unilaterally stipulates that the relation between the platform and crowd-sourced riders working on its

platform is only subject to the PRC Contract Law and General Principles of Civil Law, but not to the Labor Contract Law. Thus, it precludes the possibility for the platform to shoulder any employer's responsibilities for workers.

3.3 A final note "new forms of employment"

Several guiding administrative directives on the platform economy attempt to grasp the changes to employment norms caused by digital platforms and to promote reforms in social security systems. For example, Opinions on Efforts Relating to Employment and Entrepreneurship for the Moment and Near Future (No. 28 [2017] of the State Council) (hereafter Efforts) expressed the regulators' attempt to reform existing employment and social security system "to accommodate the characteristics of new forms of work."

Specifically, Efforts encouraged the construction of an "online social security [platform]" so that workers can participate in the social security programs more easily and make their benefits "transferable". Efforts also stressed the responsibilities of platform companies for contributing to social security for those workers who are under labor contracts with the platform companies. However, as discussed earlier, the barrier for a majority of workers to benefit from social security programs or employment benefits is precisely the difficulty to obtain labor contracts, rather than the absence of laws to protect them.

In taking stock of relevant policies for digital platforms, this review finds a series of asymmetries existing among the regulatory bodies, platform companies, consumers, and workers. These asymmetries take the form of information and technological disparities between the companies and the public (including the government, consumers, and workers) and uneven discursive power between institutions (including companies and the government) and consumers and workers. Voices and perspectives from workers are particularly marginalized in the current policies and public debate on how to regulate platform economy. Despite the rhetoric around innovation-driven economy and new forms of employment, the platform economy in China maintains a high dependence on cheap labor. With few exceptions,[13] policy studies and reports released by platform companies far outnumber the critical empirical studies on the Chinese platform economy from workers' perspectives.

4. The path forward for platform economy policies

Though it is beyond the scope of this policy overview to predict specific future directions of China's digital policy, what is evident is that a techno-nationalistic orientation toward development seems likely to continue. Government's policy incentives and institutional support will continue to boost the growth and expansion of Chinese tech industry. However, this by no means implies a perfect accordance between the industry (and capital market) and the nation state. Government's increasing dependence upon giant internet companies for governance and a tightening grip imposed by the government on the industry are likely to cause even more friction than is present now. The latest manifestation is that after five years of quasi lassiez-faire policy toward the online ride-hailing market, the Transport Ministry recently condemned DiDi's lack of social responsibility after multiple cases of rape and murder of DiDi passengers (Goh, 2018). Several branches of the central government, including the National Development and Reform Commission, have urged more cooperation from the monopoly, for a better regulated market.

More questions and challenges arise. The Chinese government's deep involvement in the booming digital applications sector (e.g. super app and mobile payment) and future technological breakthroughs and initiatives in areas like AI and the social credit system are likely to be significant for policy research. For instance, the state never

13 Notably, J. Y. Chen, 2017; DiDi Institute of Policy Study, 2017.

shies away from acknowledging the use of AI technologies for "governance." In its AI road map, the State Council articulated AI's importance to "significantly elevate the capability and level of social governance, playing an irreplaceable role in effectively maintaining social stability" (Larson, 2018). Discussions among academics about AI ethics and algorithmic fairness and openness are emerging (Ding, 2018), but there is no sign of ethical considerations translating into substantial changes in policy orientation (Wagner, 2018).

Regulation and policies specifically in relation to platforms lean toward the interests of the government and the successful enterprises. Pro-business discourse outweighs labor-oriented perspectives

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Regulation and policies specifically in relation to platforms lean toward the interests of the government and the successful enterprises. Pro-business discourse outweighs labor-oriented perspectives. The absence is remarkable of empirical studies on work conditions and workers' experience with digital platforms and thus empirically informed policy suggestions. Moreover, gender inclusion and equity is absent in most of the development policy frameworks. Since China's Reform in the late 1970's, female migrant workers (*dagong mei)* have made unparalleled contributions to making China a global powerhouse (Ngai, 2005). The on-demand labor platforms that have grabbed most attention from media, scholars, and policy-makers, however, are those dominated by male workers. This kind of gendered bias does not conceal the fact that female workers also enter the platform-facilitated labor market in large numbers. For example, a leading company for domestic service called Ayibang, has at least 300,000 workers registered on its platform and they are all women (Liang, 2017). Despite the large numbers of women workers on digital platforms, their work remains "invisible" and informal (Liang, 2017) and hence tends to be ignored in the mainstream policy framework.

Without a more inclusive perspective, the blueprint drawn in the government guiding policies and corporate PR documents is one-sided and can never bear positive results for society. A good sign is that there are budding efforts made by the municipal branches of All-China Federation of Trade Unions (the only official trade union in China) to conduct survey-based investigations into platform workers livelihoods, which covers drivers, care workers, food delivery riders, among others. This is only the beginning of a long march towards building inclusive policy agendas based on comprehensive empirical studies.

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Appendix

Selected Policies Related to Digital or Platform Economy since 2016

(Source: www.gov.cn)[14]

Time	Policies and correspondent documents number (if applicable)
March, 2016	'Report on the Work of the Government 2016' (State Council)
March, 2016	'Guiding Opinions on Promoting Green Consumption' (No. 353 [2016] of Fagai Huanzi)
April, 2016	'Opinions on the In-depth Implementation of "Internet + circulation" Action Plan' (No. 24 [2016] of the State Council)
May, 2016	'The Guidelines of the State Council on Deepening the Integrated Development of the Manufacturing Industry and the Internet' (No. 28 [2016] of the State Council)
July, 2016	'The Outline of National Informatization Development Strategy' (Central Committee General Office and State Council General Office)
August, 2016	Implementing Proposals for Promoting "Internet plus" Convenient Transportation to Advance the Development of Intelligent Transportation No. 1681 [2016] of Fagai Jichu)
November, 2016	Issuing the 13th Five-Year National Plan for the Development of Strategic Emerging Industries (No. 67 [2016] of the State Council
December, 2016	Issuing the 13th Five-Year National Informatization Planning (No. 73 [2016] of the State Council)
January, 2017	On Innovation Management, Service Optimization and How to Build up Powerful New Engines to Accelerate the Shift in Driving Forces for Economic Growth (No. 4 [2017] of the State Council)
April, 2017	Opinions on Efforts Relating to Employment and Entrepreneurship for the Moment and Near Future (No. 28 [2017] of the State Council)

14 Author's translation. Errors are mine.

July, 2017	On Strengthening the Implementations of the Strategy for Innovation-driven Development to Promote the Deepening Development of Mass Entrepreneurship and Innovation (No. 37 [2017] of the State Council)
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