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China's Initiatives to Promote Innovations and Strengthen Regulations in its Digital Economy

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On 12 January 2022, China's State Council released the 14th Five-Year Digital Economy Development Plan (henceforth the Plan). The importance of the digital economy was also highlighted in a recent speech by China's President Xi Jinping, published in the second issue of *Qiushi* (the leading biweekly official theoretical journal of the Communist Party) in 2022. In the speech, Xi considered the digital economy as a major driving force of the Chinese economy in the years to come: "In today's era, digital technologies and the digital economy are opportunities for the world's technological revolution as well as industrial transformation. They are key areas in the new round of international competition".

Among the many initiatives to develop the digital economy, strengthening data governance and promoting indigenous innovation in "core" technologies stood out. To achieve technological self-reliance, a "new type" of whole-of-nation approach has been slated as the way to attain major breakthroughs in key core digital technology areas. As China's digital economy is still growing, strengthening regulations, such as enhancing antitrust laws and introducing data security regulation in the digital economy, has become critical.

One major challenge that confronts the Chinese government is in balancing policy targets for technology advancement, data security and economic growth. High innovation costs for "core" technologies are expected under the self-reliance strategy. Given the resource constraints, the enforcement capacity of regulatory authorities is another concern.

THE RISE OF THE DIGITAL ECONOMY IN CHINA

The continuous expansion of the digital economy has translated to greater gross domestic product (GDP) growth for the country. In 2020, the “core” of the digital economy (i.e. value-added in the Information and Communication Technologies [ICT] industry) contributed 7.8% of GDP, an increase from 6% in 2017.¹ Globally, China has also taken the number one seat in the world in terms of patent applications in the areas of 5G, blockchain and Artificial Intelligence (AI) since 2019.²

Much of this growth could be attributed to the heavy investment in “new types of infrastructure” projects such as AI, 5G, industrial internet and data centres undertaken by both the central and local governments in China. More recently in 2020, the cloud computing industry had also seen stupendous expansion, registering more than 33% annual growth to reach over RMB178 billion.³ So had the total value-added of the industrial internet which contributed RMB3.6 trillion in the same year (3.5% of GDP), up from RMB1.4 trillion in 2018 (or 1.5% of GDP).⁴ Digital trade has likewise expanded. In 2020, import and export volume of cross-border e-commerce reached RMB1.69 trillion (or \$260 billion), an increase of 31.1% from that in 2019.

Digital platforms including Alibaba, JD.com and Tencent were among China’s top companies in terms of revenue and market size.⁵ The market values of tech giants Tencent and Alibaba also reached US\$631 billion and US\$579 billion respectively in June 2020 (Figure 1).

These tech giants are also creating a digital payment revolution with their fintech platforms such as Tencent’s WeChat and Ant Financials’ Alipay which registered 951 million and 600 million active users respectively in China in November 2021. These platforms use transaction-generated user data to perform big-data analytics to attain operational efficiency enhancement, cost reduction and risk control.

Digital platforms have been engaged with intensive innovative activities. For example, Alibaba and Tencent are leading companies globally in terms of the number of patent applications in the area of blockchain technology (Figure 2).

¹ Qian, Jiwei, China Promotes Its Digital Economy, *EAI background Brief*, No. 1541, East Asian Institute, National University of Singapore, 2020.

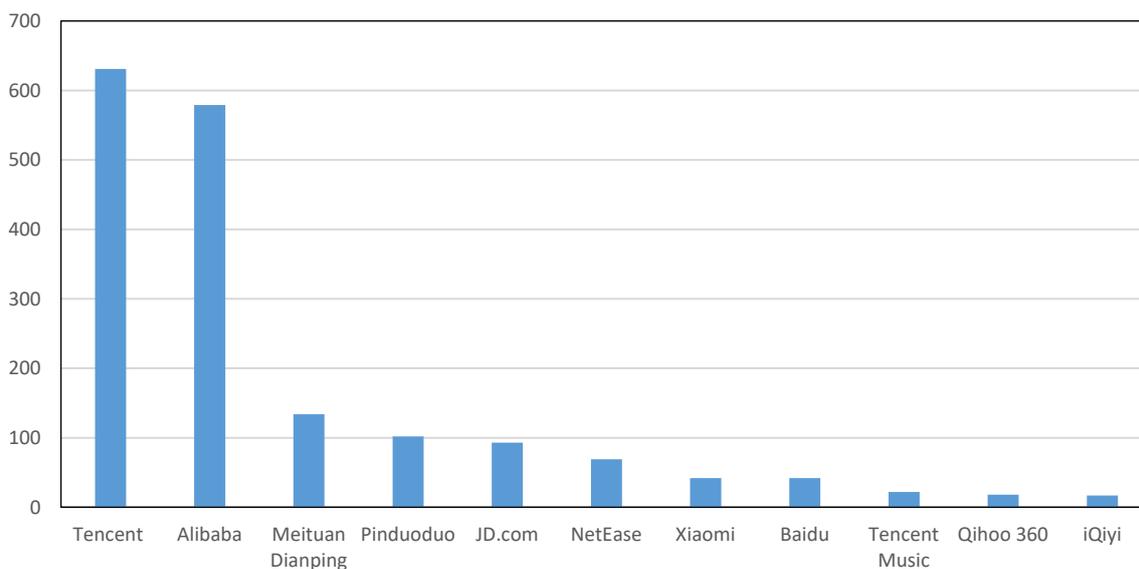
² http://www.cac.gov.cn/2021-06/28/c_1626464503226700.htm, accessed 18 January 2022.

³ <https://tech.huanqiu.com/article/45BIfJ3E8o6>, accessed 18 January 2022.

⁴ China Academy of Information and Communications Technology, 2020, *Industrial Internet Economic Development Report* and http://www.gov.cn/xinwen/2021-10/24/content_5644677.htm, accessed 18 January 2022.

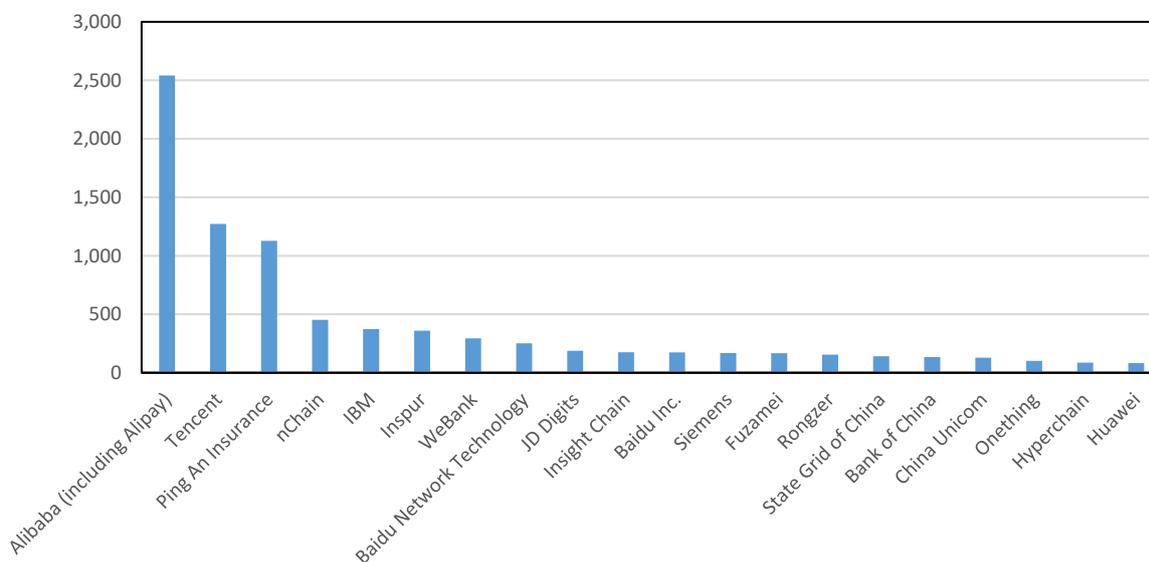
⁵ Qian, Jiwei, Applying Competition Law to Digital Platforms In China, *EAI background Brief*, No 1612, East Asian Institute, National University of Singapore, 2021.

FIGURE 1 LEADING INTERNET COMPANIES IN CHINA, BASED ON MARKET VALUE ON 30 JUNE 2020 (Billion US\$)



Source: South China Morning Post: China Internet Report 2020. Only data of public listed companies are used.

FIGURE 2 NUMBER OF BLOCKCHAIN INVENTION PATENT APPLICATIONS WORLDWIDE IN 2020, BY LEADING COMPANIES



Source: incoPat, Global blockchain invention patent ranking 2020.

MAJOR CONCERNS

Based on the Plan, the Chinese government expects the core industries of the digital economy to account for 10% of its GDP by 2025, from 7.8% in 2020. While China’s digital economy continues to surge, its upward trajectory could spiral downwards if certain concerns are not addressed. First is the reliance on the imports of some “core” or “chokepoint” technologies,

such as semiconductors and software, making many Chinese digital companies vulnerable in the US-China trade war.⁶

Second is the need for regulating big data and algorithm-backed anti-competitive behaviours. Platforms could collude via algorithms⁷ rather than via meeting, telephone call or email. To maintain market power, platforms also use technologies to impose restrictions on users' access to other platforms' business or by manipulating recommendations and the ranking of businesses for instance.

Further, as platforms have created their own ecosystem including e-commerce, social media, payment, logistics and cloud computing, they may also take advantage of the huge volume of data they have acquired to enjoy market power in adjacent markets. A case in point is Ant Group, a company affiliated with Alibaba, one of the world's most integrated fintech platforms that provides services including payment, consumer lending, asset management and insurance. It uses data collected from its payment arm for application in adjacent markets such as microlending.

Third is in data security including cross-border data transfer. According to a recent draft of the amendment of the cybersecurity review measures released on 10 July 2021, Chinese companies which process personal data of more than one million users are required to undergo a cybersecurity review before seeking initial public offering (IPO) outside China. In particular, the draft explicitly stated that foreign IPOs risk having "critical information infrastructure", "important data" or "a large amount of personal information" "influenced, controlled and abused" by foreign governments.

The crackdown on Didi also underscores China's growing sensitivities towards data security as a key area of national vulnerability. China's major ride-hailing platform Didi Chuxing raised US\$4.4 billion via an IPO in the New York Stock Exchange on 30 June 2021. Two days after Didi's IPO on 2 July, the Cyberspace Administration of China announced that a cybersecurity review had been launched against Didi Chuxing and new users' registration was suspended.

PROMOTING INNOVATION IN "CORE" AREAS

In the Plan, major targets for core technology breakthrough include high-end chip, operating system and industrial software. In the speech published in *Qiushi*, Xi also argued that China should be stronger in "critically core technologies" to enable the country to be self-sufficient and place in "in its own hands" the firm control of the development of the digital economy. The government will strengthen its support for R&D activities related to "chokepoint" technologies.

In the "new type" of whole-of-nation approach, the private sector also plays an important role in the country's effort to achieve self-reliance on key core digital technology areas. In September 2021, the Cyberspace Administration of China together with other regulators met

⁶ Qian, Jiwei, Promoting Innovation in China, *EAI Background Brief*, No. 1608, East Asian Institute, National University of Singapore, 2021.

⁷ Ezrachi, A and Stucke, M, *Virtual Competition*, Harvard University Press, 2017, p. 56.

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representatives from live-stream platforms mainly Tencent and NetEase. Platforms were urged to “place their focus on promoting technological innovation”.⁸

With this directive, major digital platforms began to redirect their resources from developing consumer-oriented technology to “hard” and “core” technologies. For example, both Alibaba and Tencent have established semiconductor businesses in recent years (“t-head” under Alibaba and Enflame Technology invested by Tencent).

STRENGTHENING REGULATION IN ANTITRUST AND DATA SECURITY

Regulatory reforms in the digital economy are likely to continue. In his speech published in *Qiushi*, Xi announced that “preventing platform monopolies and the disorderly expansion of capital” will continue for years to come. He also highlighted the importance of regulations for antitrust, data security and labour protection. Xi concludes that “[i]t is necessary to regulate the development of the digital economy”.

Government regulators, especially State Administration for Market Regulation (SAMR), have strengthened competition policy enforcement with the introduction of new rules for digital platforms since 2020. Amendments to Antimonopoly law and Anti-Unfair Competition Law were released for comments in 2020 and 2021 respectively.

The regulatory reforms led to a slew of clampdowns on tech giants. In April 2021, Alibaba was fined a record high RMB18.2 billion (4% of Alibaba’s turnover in China in 2019) by SAMR for market dominance abuses. In October 2021, on-demand local service provider Meituan was also fined RMB3.44 billion (3% of Meituan’s total domestic revenue in 2020) for the same violation.

The Plan also mentioned the establishment of a grading and classification-based data-protection regime to deal with data security issues such as data collection, processing, sharing and storage.

According to the Plan, cross-border data transfers are subject to a cybersecurity review by the central and local cyber administration. Further, the government will also enhance regulatory efforts for critical-information infrastructure in the telecom, finance, energy, transportation and other sectors. Cybersecurity reviews are highlighted as a major mechanism to address the concern of data security.

PROSPECTS

Both innovation and regulations are highlighted in the Plan. China's digital economy will be driven by technological innovations and regulatory reforms will continue. Guidelines for classification and grading of data (i.e. core data, important data, ordinary data) were released in December 2021.

Nevertheless, how to balance technology advancement, data security and economic growth could be a major challenge. For example, a free flow of cross-border data can reduce transactional costs for companies and individuals to engage in economic activities in the international market, a rationale that the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) adopts. China’s data security regulations on the other hand impose

⁸ <http://politics.people.com.cn/n1/2021/0909/c1001-32221841.html>, accessed 18 January 2022.

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restrictions on economic activities in the digital trade which might affect China's future negotiation of its entry to CPTPP.

Further, the efficacy and cost of the self-reliance strategy is an issue. For decades, the foreign sector has made significant contributions to R&D activities in China via foreign direct investment and the technology market.⁹ However, under the self-reliance strategy, the share of foreign funding of R&D activities has been decreasing in recent years. It would be costly and time consuming for China to develop a wide range of technologies under this new strategy.

Innovators' incentive for innovation under the whole-of-nation approach could be a concern if institutions for allocating research grant and protecting intellectual property rights are not reformed. As of now, the enforcement capacity of regulatory authorities in competition policy and cybersecurity is still uncertain despite the reforms announced. Staff on the payroll of the competition policy division in SAMR was reported to be fewer than 50, much smaller than its counterparts in the United States and the European Union.¹⁰ In April 2021, due to constraints in capacity, 34 platforms were requested to engage in self-review of their compliance with regulations.

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⁹ Hu, A G and Jefferson, G H, *Science and technology in China* and Brandt Loren and Rawski Thomas G (eds) *China's Great Economic Transformation*. Cambridge University Press, 2008.

¹⁰ Zhang, A, "Agility over Stability", forthcoming in *Harvard International Law Journal*, 63(2), 2022.