Article

Decentralising Data Collection and Centralising Information in the People's Republic of China: Decentralise, Manage, and Service Reforms

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Abstract

Xi Jinping's ascent to power as Chairman of the Chinese Communist Party (CCP) was accompanied by changes in national governance strategies in the People's Republic of China (PRC) that have progressively incorporated the use of big data. Shortly after, in May 2015, the Chinese State Council released a set of policy reforms under the abbreviation *fang guan fu* 放管服 (decentralise, manage, and service). These reforms promoted big data led (1) market regulation, (2) supervision and management systems, and (3) service provision processes. By applying a case study analytical approach, this paper explores how advancements in big data contributed to these reforms aimed at centralising information in China. Combining the joint knowledge of surveillance and China studies scholarship, this paper offers evidence of big data surveillance streamlining China's fragmented intergovernmental policy system. We build on David Murakami Wood's 2017 outline of a political theory of surveillance and argue that decentralisation of data collection points and centralisation of both bureaucratic and public access to information are key components of the Party-state's regulatory governance strategy incorporating the use of big data and comprehensive surveillance. Our findings have implications for future analyses of the relationship between political organisations and surveillance within other nation-state contexts, particularly in situations where Chinese technologies and systems are being adopted and adapted.

Introduction

This study illustrates how decentralisation of data collection points and centralisation of access to information undercut recent changes in national governance strategies in the People's Republic of China (PRC). In this study, we carry out a case study of *fang guan fu* 放管服 (decentralise, manage, and service [DMS]) market and governance reforms launched by the Chinese State Council in May 2015. These reforms are an expansion of Internet Plus, a concept advanced by the State Council earlier in March 2015 and a catchcry for the integration of mobile internet, cloud computing, big data, and internet of things technologies with traditional industries as a means of transforming the Chinese economy (State Council 2015a, 2015b). Within the broader scope of Internet Plus, which has upgraded the hardware and network infrastructure, DMS reforms seek to evolve three functions of the Chinese government: (1) market regulation, (2) supervision and management, and (3) public service provision. In the DMS plan, market regulation refers to the goods and services market in China, with the aim to grow emerging industries, e-commerce, and online banking and financial services as well as help Chinese companies increase their international presence (State Council 2015a). The supervision and management side of reform has connected credit scores to rulemaking in governance, such as deciding which industries or companies can get preferential loans

according to their credit rating or score (European Chamber and Sinolytics 2019). For example, as a response to the economic fallout of the COVID-19 pandemic, the State Council has encouraged banks to grant exclusive loans and postpone the submission of required application materials for trustworthy companies with good credit ratings (Credit China 2020a). The final pillar of the DMS reforms is concerned with upgrading the provision of public services, making these processes easier, more transparent, and accessible online. For example, in Zhejiang province, most of the administrative processes (e.g., reporting and filing annual taxes) can now be completed online via a government app. Despite territorial resistance from provincial leaders against intergovernmental information sharing (Chen, Lai, and Zhou 2020), these "lean government" initiatives have been promoted by Premier Li Keqiang (State Council 2015d) and pushed to implementation by the State Council (2020a) through the creation of reporting items. Ultimately, DMS reforms provide a unique scenario to observe how big data surveillance systems in China are bolstering citizen-to-state transparency while simultaneously creating a leaner government bureaucracy, a new environment of regulatory opportunities and restrictions for businesses, and streamlined public services for individuals.

We apply the insights derived from an interdisciplinary review of literature to contextualise the three primary components of DMS reforms: market regulation, new supervision and management systems, and service provision. Contextualising these developments within David Murakami Wood's (2017: 361–362) outline for a systematic political theory of surveillance, we argue that the contemporary Chinese state ought to be conceived as a "panoptic polyarchy," namely a managed state, because it increasingly relies on self-governance of citizens and organizations, civil society input, and public participation in matters of governance, albeit under close supervision. The paper proceeds as follows: First, we review the governance context in which DMS reforms were introduced, explain the content and timeline of the reforms, and provide recent evidence of policy progress, experimentation, and challenges associated with implementation. Second, we introduce literature from surveillance studies to conceptualise historic trends in data centralisation/decentralisation and examine the state-surveillance relationship in the PRC by employing the political theory of surveillance advanced by David Murakami Wood (2017). Third, we turn to China studies scholarship to describe how the Chinese Party-state, in line with its social management prerogatives, has pursued efforts aimed at public deliberation and consultation to justify an extensive informatisation and surveillance drive. We conclude by highlighting the need for future research into trends in data centralisation and decentralisation in other nation-states where Chinese technologies and systems are being adopted and adapted.

"Decentralise, Manage, and Service" Reforms

DMS reforms were officially introduced by the Chinese State Council in May 2015. The reforms represent a recent phase in administrative transformation that aims to decentralise decision making among government agencies and market actors, simplify administration, integrate and innovate management and supervisory methods, promote fair market competition, and optimise service delivery (China Government Network 2015). Although the national goal of decentralised governance and centralised management was put forth in the 1970s, the administrative attempts had since fallen short (Mertha 2005), and the application of Internet Plus in governance provided a new opportunity. The broad premise of DMS is supporting the economic growth of the country with technological modernisation. At a national level, DMS reforms were introduced to tackle the "new era" challenge of big data governance, shifting from unified data input towards a unified system in which data can be easily shared and used. DMS constitutes the seventh national scale administrative reform and a new era period of taking reformist market action (Junpeng 2018), well aligned with the broad national ideology of "Xi Jinping Thought" discussed in the literature review below. In the words of Li Keqiang: "The essence of DMS reforms is the self-revolution of government, reduction of power in the hands of central authority, departmental cost-savings and benefit, and to encourage actors to 'cut their own meat/drop their own weight' (割自己的肉) by assuming responsibility for the effective management of their own departments" (qtd. in Development and Reform Commission 2016). In line with the past four decades of market reform, this latest State Council initiative aspires to adapt the functions of

government to new technical capacities, moving from "microscopic, direct management" (微观管理、直接管理) towards "macroscopic, supervisory management" (宏观管理、监督管理) of both market and society (Chinese State Council 2017). DMS reforms are targeted at government departments at every level, and thus Li Keqiang has used the phrase "turning the knife inwards" (刀刃向内) (qtd. in Chinese State Council 2017) to describe what these efforts aspire to achieve: the slimming down of bureaucracy, cutting of red tape, innovative use of new supervisory methods enabled by surveillance, and the gathering of big data to enhance service delivery. Government departments from all levels and regions have been granted generous space to actively experiment with measures enabling the implementation of reforms and are encouraged to monitor and engage with both corporate and public opinion (China Government Network 2017b). Trends of centralisation and decentralisation are exemplified in the development of DMS reforms: data collection is now increasingly decentralized, data processing hierarchies are simplified or even eliminated where possible, and data storage is centralized. By clearly assigning reporting goals and making the initiative mandatory on a national scale, the reforms proceeded despite some pushback from local officials against interagency data sharing (Chen, Lai, and Zhou 2020). DMS offer a particularly salient example of the evolving social management prerogatives of the Party-state as well as the innovative use of new surveillance measures deployed to alleviate bureaucratic burdens, all while managing gargantuan amounts of data efficiently. In this section, we detail the three primary components of DMS reforms: new forms of market regulation, supervision and management systems, and service provision processes. We also review the governance context in response to which reforms were introduced, explain the content and timeline of the reforms, and provide recent evidence of progress, experimentation, and implementation challenges.

Evolving Market Regulation

The GDP slump to 7.4 percent in 2014 prompted the government into action to fuel a "second spring" of economic growth. In July 2015, the State Council proposed a plan to integrate Internet Plus with traditional industries, proposing to create the technological and regulatory infrastructure for Internet Plus, provide financial support to Internet Plus entrepreneurs in the form of preferential loans and tax reductions, and support internet companies aiming to sell globally through the One Belt One Road Initiative (State Council 2015c). With these initiatives, the State Council advanced nascent technological network infrastructure on a national scale (e.g., 5G), engaged entrepreneurial innovation, and combined international economic and political relationships to promote Chinese start-ups. At a provincial level, the State Council pushed departmental bureaucracies to innovate according to local circumstances. Premier Li Keqiang asserted government departments supporting Chinese businesses had not reacted adequately to the changing landscape of the Chinese economy, describing their operations as "strict evaluation, light supervision, weak service" (qtd. in Chinese State Council 2017). The market regulation side of DMS reforms therefore serve two functions: (1) they allow for the cutting of administrative red tape, the slimming of the bureaucracy, and considerable government cost-savings; and (2) they make it easier for all kinds of businesses to access financial resources by reducing the time spent on lengthy accreditation processes and decreasing the need for close government contact (i.e., financing applications can be filed and processed online).

In 2016, the State Council cut down on the processes previously needed to approve new business projects and financing. For example, the government reduced the rate of investment projects needed to be examined and approved by the central government by 90 percent, thus delegating regulatory power to provincial government agencies (Development and Reform Commission 2016). These changes have impacted administrative and investment evaluations, industry qualifications, high schools and research institutes, and the commercial trading system (China Government Network 2016). A recent example from a Southern Guiyang city municipality demonstrates the effects of the DMS reforms on a concrete level: the city authorities implemented intergovernmental information sharing between different departments, which has allowed businesses to register their government requests on one intergovernmental platform, and reduced business request processing times to one working day (Xiaoxiang Morning News 2021). The municipality also connected market supervision and regulation processes by reducing the number of inspections for

businesses that had good credit ratings and maintained frequent auditing inspections only for businesses with low credit ratings.

In 2017, reforms were concentrated on alleviating financial burdens for market actors via the implementation of structural tax cut policies and reductions in corporate fees (China Government Network 2017b). This included axing restrictions on investment, especially the kinds of restrictions that prevented private investment at the level of the individual. Licence requirements for the industrial production of goods were scaled back, including those covering safety and environmental standards (China Government Network 2017b). Central authorities are confident that through enactment of comprehensive supervision before, during, and after the production process, the quality and safety of products can be guaranteed, meaning most production licences, previously regulated by the government, can be uniformly cancelled (China Government Network 2017b). These changes aim to make the government administration lighter, more efficient, and responsive. Under the old system, government employees were criticised for waiting until they received a request and handling matters in a passive and unresponsive manner, a practice dubbed "worshipping the temple door" (拜庙门) within the state bureaucracy apparatus (Chinese State Council 2017). Li Keqiang emphasises that these changes to market regulation entail "reductions and limitations on government powers in exchange for the vigour of the market and the freeing up society's creative energy" (qtd. in Development and Reform Commission 2016). In line with DMS reforms and the tenant of decentralised decision-making, both government and market actors are being granted more space and autonomy to pursue their respective objectives, but now more than ever before, they are more closely scrutinised to ensure that they do not overstep the acceptable behavioural parameters set by the Party-state.

Strengthening Management through Enhanced Supervision

The second pillar of DMS reforms aims to "promote social fairness and justice" (促进社会公平正义) by normalizing and legitimizing surveillance and data sharing to strengthen government management and oversight of the Chinese market and society (China Government Network 2016). This ideological groundwork has allowed the State Council to integrate reputational-based decision-making underpinned by big data surveillance into all aspects of governance. Social management, discussed in the literature review below, is the fundamental stratagem the Party-state relies on to maintain social stability. Big data governance has introduced a datafied system based on carrot-and-stick principles to effectively transform social management into a project of social engineering. DMS reforms closely overlap with the experimentation, development, and rollout of a second project initiated by the Chinese State Council in 2014: The "Social Trust System" (STS) (社会信用体系), otherwise known as the "Social Credit System" (Trauth-Goik 2019). The STS has a variety of functions; however, the four primary are that: (1) the system grants the government enhanced supervisory control over businesses operating in China in the face of market liberalisation; (2) it strengthens the Party's own self-governance and makes national agencies and provincial and local governments more accountable to the Party; (3) it allows for the intensified collection of data and monitoring of government departments, private companies, and individual persons on a day-to-day basis; and (4) it streamlines or restricts movement and professional, social, and commercial participation based on the target's rule adherence via the use of automated rewards and sanctions (Trauth-Goik 2019). In line with these imperatives, the term "social credit" has gradually expanded to encompass efforts in both market regulation and social governance (Chen and Cheung 2017). Today, the STS exists as the technical engine powering Party-state efforts to construct a gamified society (Ramadan 2018) under the auspices of "a culture of honesty and integrity" (诚信文化) (Trauth-Goik 2019). On a macrolevel, the STS can be divided into two main components. The corporate STS is presently the main focus of government efforts. It targets all businesses operating in China and ensures their compliance with government regulations via enhanced supervision and requirements for businesses to submit data to centralised government databases (European Chamber and Sinolytics 2019). The personal STS targets individual citizens and is in an earlier stage of development. In its present form, the personal STS comprises an ecosystem of pilot local government and commercial projects that rate the behaviour of individuals and automatically dispense rewards or punishments (Creemers 2018; Trauth-Goik 2019: Liu 2019).

The key DMS trends of decentralising data collection points and centralising access to information are a fundamental component of the STS. Since 2015, the National Development and Reform Commission (NDRC) has been overseeing the development of a National Credit Information Sharing Platform (NCISP) (全国信用信息共享平台) fed by data streams from commercial and government agencies. Data stored within the NCISP consists of two main categories. The first comprises general identity information such as personal ID numbers, social security registration, and unified social credit codes.[1] The second draws from records that agencies are already generating through their routine operations and the provision of public services, such as licenses, permits, court judgments, and administrative punishment decisions (Chen and Cheung 2017: 16; Daum 2019). In November 2017, this platform connected forty-two State Council departments, such as the NDRC, People's Bank of China, Ministry of Transport, and Ministry of Commerce; all provinces; autonomous regions and municipalities; and fifty private market actors in their data sharing efforts, with Alibaba and Baidu being two key commercial contributors (Xinhua 2017a). The list of State Council agencies submitting data to the NCISP had grown to forty-six as of August 2019, demonstrating that more actors are being brought on board as the database develops (Trivium China 2019). Information is becoming increasingly centralised in China through the development of such master databases, and they are underpinned by rules of collecting data through different surveillance assemblages managed by respective state and extra-state actors. In other words, the STS is comprised of independent platforms owned by various private and government entities; however, these platforms rely on information from centralised databases in order to apply judgements about trustworthy or untrustworthy behaviour to their particular targets (Liang et al. 2018).

Cooperation between different government agencies granted access to the NCISP is facilitated through the "Joint Rewards and Sanctions mechanism" (联合奖惩). The mechanism is built upon a series of Memorandums of Understanding (MOU) that ensure agencies enforce each other's blacklists (Trivium China 2019: 17). When an agency includes an actor on one of their specific blacklists, this information is attached to the target's social credit file and shared with all other government agencies via the NCISP. Respective agencies then proceed to use their own institutional powers to reward or punish the actor in question, resulting in a cascade of benefits or restrictions (Trivium China 2019: 17).[2] Meanwhile, private companies such as Alibaba are required to assist authorities in the application of blacklist judgements by preventing individuals from making certain purchases through their platforms (Creemers 2018; Trivium China 2019). Alibaba is also required to forward non-compliance of payment obligations to master STS databases (Mac Síthigh and Siems 2019: 18). In July 2015, Ant, a subsidiary company of Alibaba, signed an unprecedented MOU with the Supreme People's Court promising enhanced one-way sharing of data. The document specified that the Court would provide data on individuals who had defaulted on their court orders to Ant's commercial credit system Sesame Credit for disclosure on the platform (Chen, Lin, and Liu 2018: 24). Although far from being a reciprocal exchange, commercial credit systems do receive credit data from government agencies. Sesame Credit is known to collect some of its data from government sources, including legal financial institutes, the Public Security Ministry, and the Taxation Office, for analysis and credit scoring (Chong 2019: 295).

Information accrued in centralised databases such as the NCISP is available not only to participating private and government actors but also to individual persons. In the "Planning Outline for the Construction of a Social Credit System (2014–2020)," released in June 2014, the State Council stressed that social credit information, evaluation assessments, progress reports, and blacklist and redlist (rewards) judgements be made accessible to the public (China Copyright and Media 2014). Alongside the NCISP, in June 2015, the

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[1] Since June 2018, every company with a business licence in China as well as government-backed public institutions, social organisations, foundations, private non-enterprise units, grassroots self-governing mass organisations, and trade unions have been designated an eighteen-digit "unified social credit code" that forms the basis of their social credit record (Hoffman 2018).

[2] For a brilliant visual depiction that can provide greater clarity to this process see: https://socialcredit.triviumchina.com/wp-content/uploads/2019/09/Understanding-Chinas-Social-Credit-System-Trivium-China-20190923.pdf (Trivium China 2019).

NDRC partnered with the State Information Centre and Baidu to co-design and launch the "Credit China Platform" (中国信用网站) (Creemers 2018: 21). Credit China is the front-end website of the NCISP. According to the "About Us" section of the website, the platform operates as "the official window for praising honesty and integrity and punishing the untrustworthy" and is "mainly responsible for publishing credit information and announcements" (Credit China 2017). An estimated 75 percent of all datasets transferred to the NCISP are ear-marked as "open to the public" and appear on Credit China (Trivium China 2019). Example uses of Credit China would be a company accessing the platform to evaluate the trustworthiness of a potential business partner or an individual checking to see whether a private tourism company had been blacklisted for fraud prior to traveling. In accordance with DMS reforms, the development of such master databases for the STS demonstrate how centralisation of information is facilitating decentralised decision-making, albeit decision-making constrained within acceptable behavioural parameters set by the Party-state.

Administrative Service Provision

DMS reforms aim to enhance service provision in China through efforts aimed at database integration and streamlined access to government services. As discussed in the literature review below, making governance more efficient and less opaque to citizens is an administrative goal that stems back to the 1990s. Considering the complexity and amount of red tape within the Chinese administrative bureaucracy, it is obvious why further reforms remain necessary. The State Council is seeking to simplify how the average citizen handles life matters by doing away with unnecessary, circular, and duplicate government accreditation processes. It wants to improve the supply of water, electricity, gas, heat, and other public utilities and ensure all enterprises, work units, banks, and other service providers deliver the most effective and highest quality of service (China Government Network 2017b). Pre-approval processes and restrictions covering health care services for seniors, medical rehabilitation, technical training, and culture and sports activities, among other social service industries provided by the market, are being comprehensively repealed (Xinhua 2017b). The greater ease and convenience associated with public access to government services is meanwhile being pursued via the integration of databases and efforts aimed at connecting "Information Islands" (信息孤岛) (Xinhua 2017). DMS reforms, therefore, promise to streamline service delivery of all kinds for individual citizens and residents.

DMS reforms are making government services easier to access, more intuitive, and centralised. By applying new technological solutions, the reforms are extending some of the reformist ideas from the 1970s and 1980s. For instance, in the 1980s, the Party-state conceptualized the reformist concept of unifying (一体化) governance and market processes (Huang 1986; Li 1989). The DMS reforms have furthered that idea by introducing a "National Unified Government Service Platform" (全国一体化政务服务平台), which is currently in its pilot phase and aims to promote a government objective called "service anywhere through one platform" (一网通办，异地可办) (General Office of the Chinese State Council 2020). The National Unified Government Service Platform currently connects thirty-one provinces and forty State Council departments and government service platforms, provides access to local departments and more than 3,000,000 government service items, and handles a large volume of important public services (General Office of the Chinese State Council 2020). Using the platform, businesses and members of the public can receive government service from local authorities and departments across the country in real time. In 2018, the Ministry of Public Security developed and implemented streamlined application and service processes in line with DMS reforms. These included introducing new online service functions, reducing the amount of materials needed for all kinds of applications, granting access to a combination of services using only one means of proof, optimising self-service, and encouraging autonomous internet service (Xinhua 2018). In 2018, thirty-six large cities had taken the lead in implementing DMS reforms and the Transportation Management Bureau of the Ministry of Public Security had encouraged other localities to implement the lessons these city authorities had learned through experimentation (Xinhua 2018). One of the authors personally lived through these transitions in the eastern city of Ningbo: previously working in a professional

capacity in the area of international business, the author would frequently need to visit the local government offices for the purposes of obtaining exports documents and annually renewing residence permits, frequently requiring travel to more remote suburbs of the city. In 2018, the local government departments transitioned most of those processes online, saving days of travel and queueing. Beijing Public Housing Fund is currently advancing DMS reforms by optimising the delivery process for personal housing loans and reducing the amount of required materials for housing loan applications to convenience borrowers (Credit China 2020b). In 2016, in Anhui province, eleven out of sixteen prefecture-level cities had reportedly reduced manual inter-government administration tasks (行政权力事项) by over 50 percent and citizen-facing administration tasks (行政审批项目) by 40 percent while making a recommendation for provincial-level development commissions to create a standardized, unified, and interconnected e-government approval network system (Yao 2016).

Some early adopters of DMS have reported difficulties with the implementation of the reforms. For example, government departments in Shandong province struggled to attract users to the new network platforms and reported transient information sharing barriers between departments and difficulties with the compatibility of online service platforms (Gao and Li 2016). In Henan, reforms have been implemented with success, but issues of delegating power efficiently and a lack of supervision and approval services have stalled the speed of implementation (Qing 2019). Nationally, similar issues have been reported: a lack of trained officers responsible for implementation of new policies and insufficient information and guidance (Cui and Li 2019). In July 2020, the State Council commanded that departments from all levels of government start systematically combing through existing mechanisms for freedom of information requests (信息公开), updating their regulations, and standardising documents. By the end of 2020, departments were expected to have unified information from external databases, dynamically updated services, and resolved key systemic issues as part of this drive (Credit China 2020c). As the following sections demonstrate, progressive unification of databases in China supports the Party-state ambitions to rule over the algorithm and make society legible. Figure 1 below provides a visual description of DMS reforms and highlights the emerging big data surveillance architecture in China.
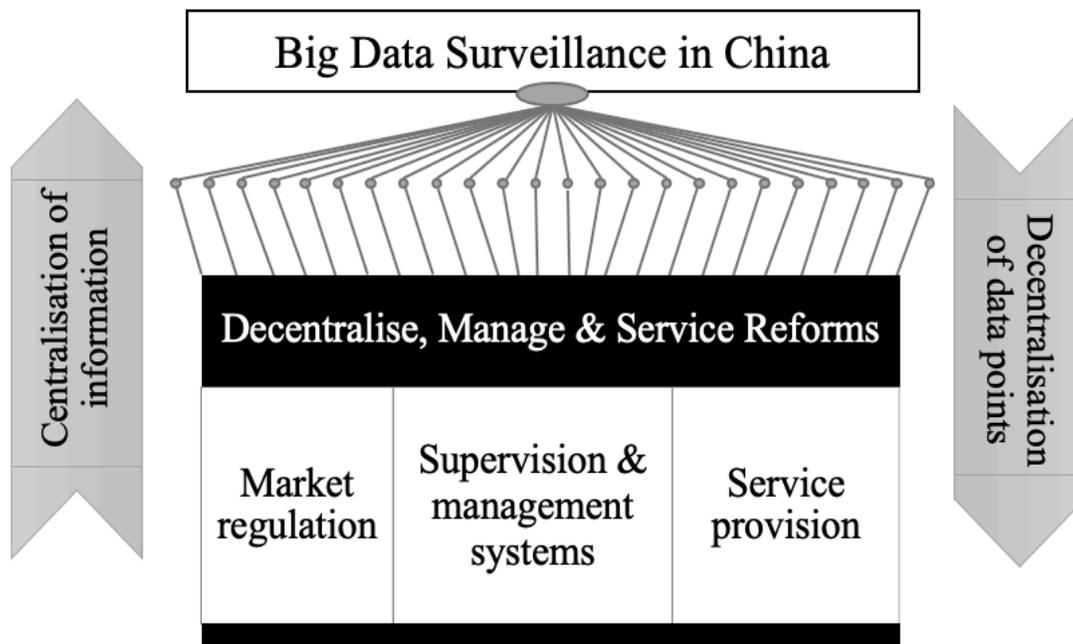
Figure 1: *DMS reforms and trends in big data surveillance in China.*

Digital Panoptic Polyarchy: Governing with Data

Chinese governmentality has placed science and technology at the heart of social and political developments since the beginning of reforms in the 1970s. Current Chairman of the CCP Xi Jinping's style of governance has relied heavily on the incorporation of surveillance technologies and technocratic political strategies. Striving to cultivate a feeling of digital freedom amongst the general population and constructing a vision of reclaimed national glories underpinned by advanced technology (Jiang and Fu 2018), the Party-state has employed surveillance mechanisms for increased monitoring and control of knowledge, behaviour, and movement of populations. This section draws from surveillance studies literature to detail the processes behind datafied state governance and positions Chinese governance rationality within David Murakami Wood's (2017) political theory of surveillance.

Surveillance studies scholars have long observed the complex interplay between trends of centralisation and decentralisation when considering the disembodied and datafied character of contemporary surveillance practices. As far back as the 1960s, Alan Westin (1967) warned of the profound way in which data processing by computers was altering the ability of government authorities and private agencies to use, in an efficient and coordinated fashion, the mountains of information they had stored to manage individuals and control social processes. Roger Clarke (1988: 499) coined the term "dataveillance" to further emphasise the centrality of computer processing systems within the operation of emerging surveillance practices, defining it as "the systematic use of personal data systems in the investigation or monitoring of the actions or communications of one or more persons." Where traditional surveillance monitored select individuals for a specific purpose, dataveillance entails the continuous tracking of the masses for reasons that are unstated and predetermined (van Dijck 2014: 205). Via the automated collection and scrutiny of personal data, computers have now been assigned the role of ever-wakeful and attentive watcher, replacing the need for a physical human to monitor the routine operation of surveillance. Gary Marx (2004) has noted that, within this model of "new surveillance," data collection is typically mediated through remote means and is stored in locations far removed from the point of extraction. Information created through such processes is available in real-time to government and private collectors and can offer insight into past, present, and future events (the latter being achieved through data mining and statistical modelling) (Gandy 2006; Andrejevic 2019; Zuboff 2019). In contrast to the panoptic model of surveillance predicated on a centralised authority, dataveillance is characterised by decentralisation and has been made into a shared responsibility of multiple actors (Romein and Schuilenberg 2008: 341) for purposes that range from security and law enforcement (Monahan 2012; Haggerty 2012; Kroener and Neyland 2012; Linder 2019) to mobilising voters and shaping their choices (Howard, Carr, and Milstein 2005; Andrejevic 2007; Howard and Kreiss 2010; Bennett 2015) to predictive commerce (Lace 2005; Turow 2006; Andrejevic 2010, 2012; Zuboff 2015, 2019).

The importance of decentralisation to the dynamics of dataveillance dovetails neatly with Haggerty and Ericson's (2000) concept of the surveillant assemblage. Drawing on Gilles Deleuze and Felix Guattari's (1987) conceptualisation of interconnected multiplicities as the botanical rhizome, Haggerty and Ericson (2000) advanced the idea of the "surveillant assemblage" to describe the classificatory transformation inherent to the operation of computer-based surveillance systems. The theorisation of surveillant assemblages signposts the hierarchical re-organisation of networked data: through dual processes of levelling and solidifying surveillance hierarchies, surveillance practices result in increased social control (Hier 2002). Across multiple contexts and situations, surveillant assemblages operate to extract information from human bodies by condensing behaviour into quantifiable data flows. These data streams feed into diverse and decentralised centres of calculation that reassemble personal information to create a virtual "data double" of selves. A variety of institutional actors appraise these data doubles in the development of their own strategies of governance, commerce, care, and control, which they deploy to influence and shape the behaviour of the original physical being from which the data were extracted (Haggerty and Ericson 2000: 605). Government and corporate actors are able to harness specific surveillance efforts, promote the use of new technologies, and cooperate together to integrate information flows. These institutions, therefore, continue to occupy a key position within the rhizomatic ordering of surveillance (Ericson and Haggerty 2006). To serve their respective purposes, public and private agencies work to connect the roots of different

surveillance systems together and encourage the growth of new shoots, establishing the rules of networked data sharing.

Decentralisation accurately captures the automated, dispersed, and datafied aspects of contemporary surveillance practices, yet it occurs alongside a dual trend of centralisation. As heralded by David Lyon (1994: 51): "What seems to be happening in many countries is that both greater centralisation and increased decentralisation is occurring. Surveillance is indeed more dispersed, but the same technical systems make it easier for individuals to be traced by central institutions such as government administrative departments or the police." The new organisation of surveillance systems allows for individuals to become more transparent by securing access to data flows through new disciplinary orders incorporating elements of both coercion and consent (Shearing and Stenning 1985). Clarke (2007) characterises centralisation as an approach towards "meta-surveillance." Achieved through the integration of different assemblages, meta-surveillance is defined as "an architecture intended from the outset to develop a set of feeds into a single 'master', with all of the subsidiary surveillance processes serving the centrally-determined objectives" (Clarke 2007). Trends of decentralisation and centralisation intrinsic to the development of surveillance remain highly respondent to the encapsulating socio-political environment. The nature of political organisation within any one context determines the extent of governmental objectives and, therefore, mediates the relationship between centralised versus dispersed strategies of data collection, particularly those actions and strategies taken on the basis of the information gathered.

Recognising the importance of political context, David Murakami Wood (2017) sketches the outlines of a political theory of surveillance that aspires to explicate the relationships between surveillance, democracy, authoritarianism, colonialism, and capitalism. Murakami Wood (2017) observes that much of the theorising concentrated on the development of surveillance within Western liberal democracies extenuates Anthony Giddens' assertion that "all surveillance tends towards totalitarianism, in other words that state surveillance itself is a marker for a drift to a totalitarian state" (Murakami Wood 2017: 358). However, Murakami Wood (2017) notes that little academic exploration connecting the concepts of political authority and surveillance exists, leaving a gap in the scholarship of a political theory of surveillance. Following in the footsteps of William Robinson (1996) and Robert Dahl (1971), Murakami Wood (2017: 360) asserts that the political reality in contemporary democratic nation-states more closely resembles "polyarchy," or "situations in which a mixed form of rule occurs, somewhere between democracy and authoritarianism." He subsequently advocates for a model of state-surveillance that can demonstrate the relationship between the traditional state-type in question (e.g., anarchy, democracy, polyarchy, or autocracy) and the extent of surveillance (e.g., high, moderate, or low). Murakami Wood (2017: 362) highlights that a "panoptic autocracy" most closely resembles a totalitarian society, a context within which "there are no limits on what the state can know about the citizen…. There is no accountability or openness from the state. Further, what constitutes 'knowledge' in the totalitarian state is determined by the state itself." Evidently, in China today, surveillance is highly sophisticated and extensively applied across both online and offline spaces, thus we can characterise the level of surveillance in China as "high." A state high in surveillance though a degree less politically rigid than a panoptic autocracy is described by Murakami Wood (2017) as a "panoptic polyarchy." This surveillance state form "has some democratic features, but these are controlled forms of representation. The state is dependent on information for governing, yet at the same time makes only limited information available and mostly in a propagandist form. Such states tend to be based in formal and often constitutional law, but the law is skewed strongly in favour of the state's priorities" (Murakami Wood 2017: 362). In light of the case study examined above, we proceed by interrogating the surveillance state form that is most applicable to the contemporary Chinese Party-state.

Enhancing Social Management through Surveillance

In 1992, Kenneth Lieberthal (1992: 39) coined the term "fragmented authoritarianism" to demarcate the shift from Maoist-era governance in China. Lierberthal posited that fragmented authoritarianism was organised along the lines of the *tiao-kuai* matrix: *tiao* referring to vertical functional organisations, such as ministries, and *kuai* outlining geographical denominators (Lieberthal 1992). This division of responsibility

ensures that central power is maintained while governance goals and responsibilities are horizontally assigned across jurisdictions. The incorporation and growth of big data surveillance in China since 2015 has further embedded this trend of fragmented authoritarianism. Meanwhile, the Chinese Party-state's willingness to deliberate with market, civil society, and public actors and grant them greater operational freedoms has accompanied its embrace of digital technologies. Since 2013, when Xi Jinping assumed leadership of the CCP, this shift has been gradually accommodated in the broad ideological vision of "Socialism with Chinese Characteristics for a New Era," otherwise simply known as "Xi Jinping Thought." By advancing the CCP's "socialist rule of law," the Party-state has simultaneously allowed space for digital technologies to freely reshape Chinese society and, through rule by law, outlined clear social and political boundaries that those freedoms should contain. This section demarcates the changing modes of public deliberation and consultation in China and explains how those changes have been incorporated under the basic tenets of Xi Jinping Thought.

Rebecca MacKinnon (2011) has demonstrated how the previously rigid bars of the government bureaucracy have progressively been replaced by the controlled development and selective application of less-invasive digital technologies. MacKinnon (2011) describes how the CCP has come to embrace digital technologies as inevitable and shape them in ways congenial to the imperatives of single-party rule by co-opting the private actors responsible for their design and maintenance. James Pieke (2016) later coined the term "neo-socialism," pointing to China's extensive market liberalisation and the emergence of a vibrant society and relatively autonomous civil society to describe elements of political reality in contemporary China that contradict classical ideas associated with a strictly authoritarian Party-state. Others have echoed these sentiments, contending that to view the contemporary Chinese political system purely through the lens of authoritarianism focuses attention on the Chinese state's repressive characteristics to the exclusion of its growing ideological and hegemonic capacity (Wright 2010; MacKinnon 2011; Teets 2013; Hui 2017; Xing 2017). The intention of the Party-state in actively incorporating digital technologies under the ideological umbrellas of informatisation and modernisation is to take full advantage of science and technology as a means to advance the nation, but to do so in a politically, socially, and legally controlled manner. This idea is not new: in explaining the development of the internet in China, James Griffiths (2019) outlines how the internet first started on a small scale available only for a select group of researchers, continued to incorporate the Great Firewall of China that censors unwanted content, and eventually outcompeted international suppliers of hard and soft technology by relying on home-grown companies compliant with the rules set by the Party-state. A similar adoption strategy is now being employed with big data applications. The Party-state is allowing for a change in public discourse and consultation in lieu of its embrace of the new big data era, but it is doing so on its own terms.

The Chinese Party-state cares greatly about expanding its capacity to rule through the consent of the masses as demonstrated through its subscription to "social management" (社会管理), a technique of state security that aims to integrate and automate responses to internal and external security threats. Samantha Hoffman (2017a) traces the origins of social management within Party rhetoric to approximately 1949. However, it was noted that the current iteration of the term, conceived as a functional process, grew in prominence during the 1970s and early 1980s (Hoffman 2017a: 17). Xi Jinping further reshaped the concept in 2013, after the CCP Central Committee's Third Plenum, when the term "social governance" was introduced to replace social management (Steinhardt and Zhao 2014). While the two concepts may be used interchangeably, the term social governance expanded to include self-governance and service functions that mirror the role of DMS reforms in the social structuring vision of the Party-state. Social management embodies a Leninist, scientific method of "shaping, managing, and responding" (Hoffman 2017b), which guides the Party leadership's governance of both the Party machination and wider Chinese society. The CCP has proven that authoritarian socialism can be compatible with the development of a capitalist economy, with the two forces now tied together in an increasingly symbiotic relationship (Wright 2010; Pieke 2012). As a consequence, the Party has been forced to evolve its attitude of pluralistic accommodation away from a narrow focus on socialist ideology and towards the inclusion of different actors within the administration and supervision of Chinese society (Tsang 2009; MacKinnon 2011; He and Warren 2011; Xing 2017; Kornreich 2019; Meixi 2020). This has not, however, necessitated the diffusion of power from central Party

control into the hands of civil society. Instead, social management should be conceived of as a top-down attempt at refining the Party's political control over Chinese society in the face of pluralisation (Shi 2017). The diffusion of tasks and responsibilities of restructuring social governance have been allocated within the *tiao-kuai* matrix (vertical functional organisations within geographical denominators). This strategy of leadership ensures the continued relevancy of the Party as China's transition toward a market economy intensifies and the country experiences unprecedented technological and societal change.

Subscription to the idea of social management by successive Party leaders demonstrates their recognition that managing the complex development of modern Chinese society cannot be achieved through government intervention and control alone. In this regard, social management techniques facilitate processes of social self-governance pursued by private business, non-governmental organisations (NGO), and wider civil society while they simultaneously strengthen Party legitimacy by reinforcing the laws, rules, and regulations that serve to steer and standardise these processes (Hoffman 2017c; Guo and Jiang 2017). At every stage, the underlying goal is to improve governmental capacity to shape, manage, and respond to social demands (Hoffman 2017b). Within this hierarchal system constructed around the scientific principles of observation, propagation, and revision, the CCP exists as the leading class. It regards itself as the "vanguard of the people," the Leninist idea that a scientifically educated few can lead the people in the direction of social prosperity (Tsang 2009; Hoffman 2017c). This belief has been further developed ideologically by Xi Jinping in propagating socialist rule of law and the Party-state as the central figure of leadership in "socialism with Chinese characteristics for a new era."

The core principles set to manage the changing means of social management are both ideological and legal—they politicise morals and moralise politics (Lin 2017). In 2017, Xi Jinping Thought was added to the Party's constitution during the 19th National Congress of the CCP. Michael Peters (2017: 1300) argues that the changing political landscape has introduced a "new 'development philosophy' that… turns its gaze to structural market reforms as well as an enhanced governance with a system of socialist rule of law with Chinese characteristics based on 'consultative democracy.'" Participatory tenants of social management have been recently demonstrated in the Party-state's approach towards internet communication and the regulation of public discourse on Chinese social media. Contrary to previous assumptions, in their highly influential paper, King, Pan, and Roberts (2013) demonstrate that the primary function of the Party-state's censorship program is not to censor negative criticism of the state or its policies. Instead, through their analysis of over 1,400 social media platforms in China, these researchers argue that censorship in China operates to "forestall collective activities that are occurring now or may occur in the future" (King, Pan, and Roberts 2013: 326). Thus, despite enhanced government crackdowns on internet regulation beginning in 2013 (Tong 2015: 342; Lui, Xu, and Li 2019), a degree of criticism on social media aimed at government ineptitude and administrative reforms is still permitted (Yang 2013; Tong 2015; Nip and Fu 2016; Kornreich 2019), though this excludes criticism intended for the Party leadership. Communications scholar Angela Ke Li (2015) characterises this as a dual strategy of censoring critical information and proactively guiding public opinion on the internet. Through analysing crowdsourced lists of filtered words on the Sina Weibo microblog, Vuori and Paltemaa (2015: 409) discovered that censorship efforts were concentrated primarily on "controlling public debates on the Party and its leading personages" rather than strictly eliminating critique of the government apparatus. Others have affirmed these findings, highlighting how controlled participation in online forums and polling is encouraged by the Party-state as a means of developing policy that is responsive to public opinion and interest group expertise (Kornreich 2019). These trends demonstrate how Chinese authorities "use freedom as a technique of autocratic government" (Vuori and Paltemaa 2015: 419) in order to secure continued ruling legitimacy.

The willingness of the Party-state to adopt an instrumental approach towards new modes of governing as well as ways of engaging with the Chinese public has resulted in experimentation, albeit selective and tightly controlled, with tools of governance reflective of, rather than strictly inimical to, democratic processes. This mirrors David Murakami Wood's (2017) proposed concept of panoptic polyarchy, which is defined by some existing democratic features as controlled forms of representation. Although some outside commentators deride the inclusion of "freedom" and "democracy" as part of China's Core Socialist Values, their inclusion

by the Party-state ought to be appraised as an actual interpretation of democratic values. In line with the Leninist concept of democratic centralism, across recent years, Chinese authorities have exhibited a higher degree of responsiveness to public opinion concerning a range of political, economic, and social issues; delegated more power to market actors; and largened the scope of individual freedoms, conditions albeit tied to the acceptance of the single-party status quo (Tsang 2009; Gow 2017; Kornreich 2019). Social management reasoning helps to illuminate why this has been the case, particularly when it comes to the development of new governance strategies incorporating the use of big data in China today, such as those being pursued via DMS reforms.

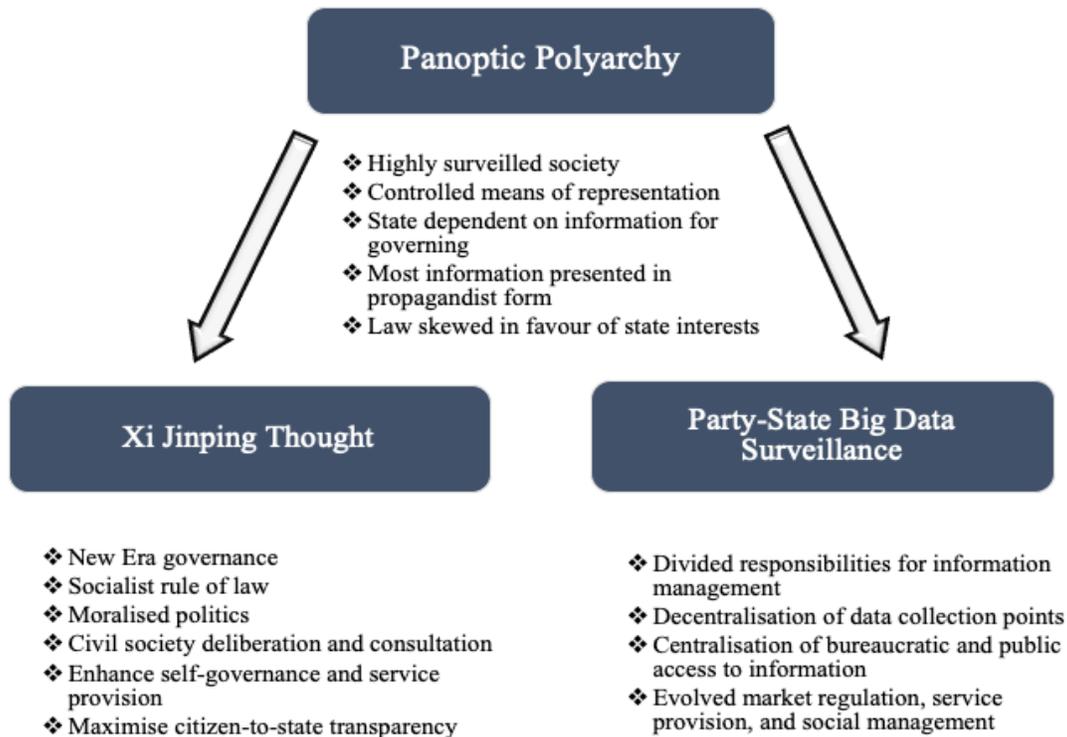## Ruling the Algorithm: The Making of Legible Society

The surveillance studies literature adds greater depth to social management inquiries by demonstrating how decentralisation strategies in China have divided responsibility for information system management while simultaneously securing Party-state access to more data. The Chinese scholarly literature complements these insights by showcasing China's fragmented authoritarianism and highlighting the development of varied civil society input channels for the purposes of fine-tuning governance under single-party rule. This section explains how the Chinese Party-state has incorporated new technology to national-level planning processes since the 1990s, allowing it to plan, support, and govern new technologies. Progressive incorporation of surveillance technologies in particular have culminated in a high degree of individual-to-state transparency, making Chinese society transparent and legible. Unlike its North American or European counterparts, the Chinese leadership has not been guided by the algorithm but rather allowed for the creation of the algorithm under government supervision.

Xi Jinping's leadership has introduced significant changes to the means of social management. Upon assuming his position as paramount leader, Xi Jinping established the Central Leading Group for Cybersecurity and Informatisation (CLGCI). Xi appointed himself as chairman and assigned deputy manager positions to Premier Li Keqiang and Liu Yunshan, the latter of whom is a member of the Politburo Standing Committee as well as the Director of the Central Propaganda Department (Segal 2014). The group started work in 2014 and was quick to drastically change the process of information management in relation to national security. By tightening legal and regulatory measures, the group reassigned national security responsibility to private information communications technology (ICT) operators and introduced regulatory penalties for non-compliance, thus virtually reorganising the apparatus of China's internet governance (Creemers 2017: 95). In the words of Chinese law and governance scholar Rogier Creemers (2017: 95), the CLGCI has "made the society legible." Creating a transparent, or visible, society has been the overarching vision of shifting processes to big data social management. Creemers (2017) iterates that this goal was furthered by consolidating ICT provision in the hands of a few large companies (e.g., Baidu, Alibaba, and Tencent) that are united with the broader national goals of internet governance (Creemers 2017). Indeed, this is reflected in Xi Jinping's "Six Thoughts on the Internet" that are guided by the core principles of decentralisation, openness, and participation under the slogan of: "My thoughts benefit the People, and the thoughts of the people help me" (我思献人人、人人助我思) (Xi Jinping qtd. in Du 2014). This new approach embodies Lyon's (1994: 51) observations on two data processes blending: decentralisation of data collection points and centralisation of access to information. As the DMS case study advanced in this paper demonstrates, these processes manifest themselves in comprehensive efforts aimed at regulating the market, strengthening supervision and management systems, and enhancing service provision.

The Party-state has not allowed the possibilities afforded by new technologies to dictate political revolution in China. On the contrary, Hoffman (2017a) has demonstrated how complex systems management theories buttressing the design of computational technologies have been incorporated into the Party-state's stratagem of social management. In line with the Party-state's application of such theories for political system design, the ideological umbrella of informatisation has long carved out a space to introduce and finance new national-scale development initiatives. Informatisation has been a strategy of national development promoted in China since the 1990s with the First National Informatisation Work Conference. The first large-

scale informatisation reform was the "Twelve Golden Projects" (十二金工程), also known as e-governance reforms, introduced to modernise government operations of the country, including anything from administrative operations to policing. According to Ma, Chung, and Thorson (2005: 20), the "Chinese e-government initiatives can be best understood as vehicles intended to support economic development through an increasingly transparent and decentralized administration while at the same time providing the central government the information and ability to efficiently monitor and potentially steer economic activity."

With the dawn of big data, new opportunities for social governance emerged. In 2015, during the Two Sessions,[3] Li Keqiang introduced the new concept of Internet Plus, examined at the beginning of this paper, which sought to apply new internet technologies to traditional industries as a means of modernisation. The informatisation plan that is laid out in the current *13th Five Year Plan* promotes the development of Internet Plus, which entails a modernisation project of government communications called "Internet+ Government Services" (互联网+政务服务). The Internet+ Government project aims to modernise and ease government information sharing and was set to be implemented in the 2016–2020 "Five Year Plan" (China Government Network 2017a). By building the infrastructural basis, this project informs the new shift in data governance in China and assists in the development of new surveillance systems and governance strategies. This shift is characterised not only by enhanced political control of the Chinese Party-state but also, as this paper has illustrated, the emergence of a regulatory environment where private capitalism can flourish alongside a leaner and more accountable government bureaucracy. Figure 2 below contrasts the panoptic polyarchy model, Xi Jinping Thought, and aspects of the big data surveillance architecture described above to conceptualise the state-surveillance relationship in the PRC.

Panoptic Polyarchy
- ❖ Highly surveilled society
- ❖ Controlled means of representation
- ❖ State dependent on information for governing
- ❖ Most information presented in propagandist form
- ❖ Law skewed in favour of state interests

Xi Jinping Thought
- ❖ New Era governance
- ❖ Socialist rule of law
- ❖ Moralised politics
- ❖ Civil society deliberation and consultation
- ❖ Enhance self-governance and service provision
- ❖ Maximise citizen-to-state transparency

Party-State Big Data Surveillance
- ❖ Divided responsibilities for information management
- ❖ Decentralisation of data collection points
- ❖ Centralisation of bureaucratic and public access to information
- ❖ Evolved market regulation, service provision, and social management

Figure 2: *The State-Surveillance Relationship in the PRC.*

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[3] The Two Sessions refers to an annual meeting between the National People's Congress of the People's Republic of China and the Chinese People's Political Consultative Conference.

Conclusion

This paper has introduced a case study of State Council DMS reforms to highlight how the Chinese Party-state has harnessed big data surveillance to increase the legibility, and thus control, of society. DMS reforms represent an obvious shift towards a more expert means of sharing, utilising, and managing big data that paradoxically may be leading to a more invasive but less "hands-on" Party-state. The reforms have taken shape within the governance space that has been in planning since the 1970s and fits within the Xi Jinping administration goals of comprehensive governance: while presented as processes that increase government transparency, they only achieve transparency on a superficial level of administrative operations. The reforms are packaged as a radical change of the governance apparatus by "turning the knife inwards" to reduce the amount of red tape and enhance transparency (Chinese State Council 2017). And indeed, DMS reforms are eliminating administrative hierarchies and superfluous reporting processes and modernising the bureaucracy apparatus in the three core areas of market restructuring, management and supervision, and service provision. Concurrently, the Party-state has employed an ideological toolset to brand the DMS reforms as a means to increase the legibility of society. These changes assist both self-governance and service provision within the ideological framework of Xi Jinping's social governance for the New Era (Steinhardt and Zhao 2014). Simultaneously, the DMS reforms are creating a leaner and more transparent government bureaucracy capable of facilitating an environment of regulatory opportunities and restrictions for businesses as well as streamlined public services for individuals. Therefore, in this paper, we present an analysis of the reforms that considers the positive aspects of creating new economic growth and building more accountable governance by harnessing the welfare maximising potential of digital surveillance. Utilising Murakami Wood's (2017) surveillance model of state forms, we have classified the contemporary Chinese Party-state as a "panoptic polyarchy," namely a managed state. This classification is justified by virtue of the facts that the PRC: (1) has some democratic features, but these are controlled forms of representation; (2) the state is dependent on information for governing, yet at the same time, makes only limited information available and mostly in a propagandist form; and (3) is based in formal, constitutional law, but the law is skewed strongly in favour of the Party-state's priorities. As evidenced by DMS reforms, lower levels of government and market actors are being granted more discretionary power and space to pursue their respective objectives due to central authorities' reliance on new supervisory techniques enabled by big data.

Elements of this model are now being exported abroad. Within the four decades since the enactment of the Open-Door Policy, China has established itself as a global leader in ICT research and manufacturing. According to the WTO, China's share of global ICT exports was 22.5%, or USD 300.4 billion, in the period of 2011–2013 (World Trade Organization n.d.). The country has aggressively supported national technology development initiatives, such as the strategic "Next Generation Artificial Intelligence Development Plan," to achieve a position of global leadership over technology supply by providing new, more comprehensive technological solutions cheaper (Yu 2017; Cave et al. 2019). Before the COVID-19 pandemic, multiple countries participating in the Belt and Road Initiative (BRI), including Saudi Arabia, the Czech Republic, and Thailand, had begun cooperating with China to establish central databases for credit sharing, both nationwide and at the city level (European Chamber and Sinolytics 2019: 31). Chinese telecommunication company ZTE operates in more than fifty of the sixty-four countries included in the BRI while its competitor Huawei supplies equipment for two-thirds of the commercially launched 5G networks outside of China (Segal 2020). A MERICS research team has meanwhile found that, since 2013, Chinese entities have provided more than USD 17 billion for Digital Silk Road projects comprised of "at least USD 7 billion in loans and FDI for fibre-optic cable and telecommunication network projects…[,] USD 10 billion for e-commerce and mobile payment deals," at least several hundred million for smart and safe city-related projects, and an unspecified amount for data and research centres (Eder, Arcesati, and Mardell 2019). In other contexts where Chinese technologies and systems are being adopted and adapted, directing attention towards trends in centralisation/decentralisation could illuminate whether China's particular model of big data governance is being comprehensively replicated, and if not, whether divergent evolutions in state-surveillance based on unique data collection and sharing dynamics are possible.

In this paper, we employ the Chinese DMS reforms to offer an empirical application of Murakami Wood's (2017) emergent political theory of surveillance in a non-Western liberal context. The DMS reforms in China offered the country a new impetus of economic development by applying internet-based technologies to government processes, identifying and removing administrative red tape, and enhancing the self-governance of individuals and businesses. While increasing citizen-to-state legibility through data and, thus, social control, the Chinese State Council has simultaneously created government processes that are leaner, more transparent, and less hierarchical. Driven by the objective of invigorating economic growth and innovation, new technological industries have been created and grown. For example, nascent during the time of Internet Plus and the DMS reform introduction, 5G technologies in China have now become the technological backbone of technological governance and created internationally competitive products of network infrastructure (Segal 2020). Furthermore, five years after the application of Internet Plus, the infrastructure of lean and interconnected government services has been remodelled and applied to a suite of other purposes, such as medical care amidst the COVID-19 pandemic (State Council 2021a), national security (State Council 2021b), and tourism and directing consumer trends (State Council 2019; State Council 2020), among others. In the theorizing of surveillance, these insights complicate popular appraisals of the Chinese surveillance state as a controlling Big Brother and posit the idea that the Chinese authorities are concerned with upkeeping economic growth and state legitimacy while automating the coercive aspects of government surveillance.

Acknowledgments

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