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The Chinese government began to implement a new form of social control – grid management – about fifteen years ago. On paper, the country has largely finished setting up more than one million grids in local communities. Grid management, which entails dividing communities into small units (1,000 residents per unit, as in most cases) and equipping them with information and surveillance technology, appeals to the top Chinese leadership because it promises to provide the party-state a new and more capable instrument of social control and delivery of public services. Publicly available materials suggest that most localities adapt their existing local organizations, such as neighborhood and village committees, into grids to comply with the central government's order. As fully effective grid management requires enormous investments in well-trained manpower and reliable technology, it will likely take years for China to build such a system. At the moment, only wealthy cities seem to have made genuine progress in the development of grid management, while most grids are likely no more than relabeled neighborhood committees. Like China's social credit system, grid management is evidence, but not yet reality, of the ruling Chinese Communist Party's aspirations to construct a well-organized and technologically sophisticated surveillance state.

The drastic containment measures the Chinese government adopted to contain the coronavirus pandemic in 2020 have played a critical role in the country's success in suppressing the virus and limiting the number of infections and fatalities. One of the tools deployed in China's war on the coronavirus was "grid management" (网格化管理), a tool of social control initially conceived and endorsed by the Chinese leadership because of its enormous potential to strengthen the state's capacity of surveillance and delivery of public services (such as sanitation, public safety, and upkeep of public infrastructure). Indeed, on January 24, 2020, one day after Wuhan was locked down, the National Health Commission (NHC) issued a document (关于加强新型冠状病毒感染的肺炎疫情社区防控工作的通知) outlining a coordinated mechanism to prevent community spread of the virus. Among other things, the NHC required that local governments adopt "grid management" and treat each community as a "grid." Full-time and part-time personnel would perform health checks, acquire information about the movement of local residents, conduct contact tracing, and implement preventive measures.¹ Chen Yixin (陈一新), secretary-general of the Central Politics and Law Commission (中央政法委秘书长) dispatched to Wuhan by General Secretary Xi Jinping to help oversee the lockdown, emphasized that grid management must play a critical role in enforcing the lockdown, creating "pandemic-free"

¹ NHC, "关于加强新型冠状病毒感染的肺炎疫情社区防控工作的通知," January 26, 2020, http://www.gov.cn/xinwen/2020-01/26/content_5472235.htm, accessed January 24, 2021.

communities, maintaining social stability, and ensuring the delivery of services to residents in lockdown.²

Official Chinese accounts of the government's mobilization of the population to enforce quarantines and lockdowns frequently credit the efficacy of "grid management" as a tool to fight the pandemic. Grid attendants (网格员) were portrayed as heroes who kept residents informed, delivered medicine and food, and manned temperature-checking points.³ Whether grid management performed as well as is claimed by the Chinese government and academics will await further investigation.⁴ In all likelihood, grid management was highly effective in helping the Chinese government enforce restrictive measures to contain the outbreak of the pandemic because this system was designed to enforce pervasive surveillance of residents grouped into small geographical areas (grids).

In this article we briefly trace how the Chinese Communist Party (CCP) embraced grid management as a tool of social control in the mid-2000s and, after the rise of Xi, began to construct a nationwide system of grid management. We then describe and analyze how grid management is organized and maintained in various jurisdictions. Finally, we evaluate grid management as a tool of social control and as a critical component of China's surveillance state.

The Emergence of Grid Management as a Tool of Social Control

Grid management was first adopted as an experiment in Dongcheng district of Beijing in 2004. The district government divided its jurisdiction into three levels of grids. Traditional neighborhoods were considered large grids; smaller communities within each neighborhood were designated as medium grids; residential areas in each community were further divided into small or basic grids of 10,000 square meters each. Small or basic grids were managed by several dedicated personnel. In the case of Dongcheng, they consisted of a grid attendant (网格员), a grid assistant attendant (网格助理员), a grid police officer, a grid supervisor (网格督导员), a grid party branch chief, a grid judicial officer, and a grid fire warden (消防员). These personnel were responsible for resolving disputes among residents, maintaining community correction (社

² 陈一新, "网格化管理要在战疫中发挥重要作用," March 6, 2020, https://www.hubei.gov.cn/zhuanti/2020/gzxxgzbd/zy/202003/t20200306_2173935.shtml, accessed January 20, 2021.

³ 人民日报, "小网格撬动大治理," June 9, 2020, http://www.xinhuanet.com/2020-06/09/c_1126090155.htm, accessed January 20, 2021.

⁴ Chinese researchers claim that grid management enabled communities to control outbreaks and maintain effective protective measures. 胡秀英, 甘华田, 程南生, "网格化管理对社区疫情防控的作用及对基层社区卫生服务体系建设的启示," 中华现代护理杂志, No. 26 (2020), <http://rs.yiigle.com/yufabiao/1188758.htm>, accessed January 20, 2021.

区矫正) and public safety, enforcing government regulations, and monitoring the floating population (流动人口).⁵

The potential of grid management as a powerful tool of social control was so attractive that the top leadership of the CCP decided to expand this experiment to more cities. Soon thereafter, the Ministry of Construction designated ten cities as pilots. In 2010, the Central Comprehensive Management Commission (中央综治委), which was part of the CCP Central Political and Legal Commission (中央政法委), selected 35 additional cities as pilots.

Grid management received the full endorsement of the Chinese leadership at the 3rd plenum of the 18th Central Committee in November 2013. The resolution of the plenum, often referred to as General Secretary Xi's blueprint for bold reforms, included grid management as part of a program to innovate the system of social management (创新社会治理体制).⁶ In April 2015 the General Office of the Central Committee and the General Office of the State Council issued a joint document, "Opinions on Strengthening the Construction of the System of Prevention and Control in Maintaining Public Law and Order" (关于加强社会治安防控体系建设的意见). The Opinions laid out a series of steps to bolster public security and social control. Section Two of the Opinions, titled "Strengthening the Construction of a Net of Public Law and Order" (加强社会治安防控网建设), directed local governments to include the implementation of grid management in their planning, with the goal of covering the central urban areas of all cities, counties, and districts by 2020.⁷

Xi publicly endorsed grid management in March 2017 when he said that "grid management should be deepened and expanded, so that, to the greatest extent possible, resources, services, and management can be devolved to the basic level and the masses can be provided with precise and effective services and management" (深化拓展网格化管理, 尽可能把资源、服务、管理放到基层, 使基层有职有权有物, 更好为群众提供精准有效的服务和管理).⁸

Like nearly all major policies, implementation of grid management was left to the provincial authorities, who enjoyed considerable freedom in the design and roll-out of this new mechanism of social control. Based on publicly available information, it seems that some provincial and municipal governments began to establish grid management earlier than others. Tibet began to experiment with grid management in 2012 (in Lhasa and Chamdo) and gradually extended the

⁵ 杨锦炎, "论社会管理创新的动力," *Journal of Wuling*, 38 (1) (2013): 50–56.

⁶ "十八届三中全会全面深化改革若干重大问题决定," November 15, 2013, http://www.chinanews.com/gn/2013/11-15/5509681_13.shtml, accessed January 20, 2021.

⁷ 人民日报, "中办国办印发关于加强社会治安防控体系建设的意见," April 14, 2015, p.1, <http://politics.people.com.cn/n/2015/0414/c1001-26839083.html>, accessed February 22, 2021.

⁸ "习近平总书记关于城市管理的重要论述," March 24, 2018, <http://www.bestcity.com/viewpoint/208008.html>, accessed January 20, 2021.

system to the rest of the region, covering urban communities, villages, and even monasteries.⁹ In Xinjiang, the regional government claimed in early 2012 that half of the region's urban communities would be covered by grid management by the end of that year.¹⁰

By the end of the 2010s, grid management appeared to have been implemented widely in most Chinese provinces, meeting the goal, at least on paper, set by the General Office of the CCP Central Committee and the General Office of the State Council in 2015. Xinhua reported that grid management covered 93 percent of Chinese urban and rural communities by the end of 2016.¹¹ Beijing claimed that grid management covered the entire city by the end of 2018.¹² Jiangsu boasted that by the end of 2020 it had 300,000 grid attendants manning 120,000 grids that covered the entire province.¹³ Zhejiang recruited 330,000 grid attendants to operate 61,000 grids in 2020.¹⁴ With nearly 100,000 grids and 123,000 grid attendants, Hebei completed rolling out grid management in the province in 2020.¹⁵ In Guangdong, the provincial political and legal committee reported that, by 2020, the province was divided into 140,000 grids staffed by more than 170,000 full- and part-time grid attendants.¹⁶ In a briefing at the end of 2020, the deputy secretary of the CCP provincial political and legal committee in Shandong disclosed that the province had set up 168,000 grids and staffed them with 275,000 grid attendants.¹⁷ Of course, such official claims must be treated skeptically because they tell us little about the effectiveness of grid management in achieving its stated objectives. In all likelihood, provincial authorities

⁹ “西藏实现“网格化”管理全覆盖,” November 3, 2014, http://www.xzcd.com/_news/xicangxinwen/20141103/47652.html, accessed January 20, 2021.

¹⁰ “网格化年底将覆盖新疆半数以上的城市社区,” April 9, 2012, http://www.gov.cn/gzdt/2012-04/09/content_2109104.htm, accessed January 20, 2021.

¹¹ 新华社, “治理走出网格化服务管理精准之路,” September 19, 2017, http://www.xinhuanet.com/legal/2017-09/19/c_1121689554.htm, accessed January 20, 2021.

¹² 新华网, “北京城市管理网格化实现 16 个区全覆盖,” December 12, 2018, http://www.xinhuanet.com/local/2018-12/12/c_1123843069.htm, accessed January 20, 2021.

¹³ 新华日报, “江苏 30 万网格员坚守一线 社会治理大小事一网打尽,” January 3, 2021, <http://js.people.com.cn/n2/2021/0103/c360300-34508033.html>, accessed January 20, 2021.

¹⁴ 吴结兵, “网格化管理的实践成效与发展方向,” 人民论坛 (October 2020), http://paper.people.com.cn/rmlt/html/2020-10/11/content_2019942.htm, accessed January 20, 2021.

¹⁵ 河北日报, “河北全面深化平安建设纪实,” August 14, 2020, <http://www.hbgrb.net/news/HBXW/2020/814/208149112JE03CCJ8JJ24B5IJ8J6B.html>, accessed January 20, 2021.

¹⁶ “三部门发布 9 个新职业, 广东配备 17 万名城市管理网格员,” July 10, 2020, http://lsj.gz.gov.cn/gzdt/content/post_6450153.html, accessed January 20, 2021.

¹⁷ “山东网格化服务打通社会治理最后一公里,” November 30, 2020, http://news.shm.com.cn/2020-11/30/content_5178983.htm, accessed January 20, 2021.

provided these numbers to show to the central CCP leadership that at least on paper they had carried out its policy on implementing grid management.

The Organization of Grid Management

Although grid management differs from one jurisdiction to another in terms of details, all Chinese local governments adopt a variation of the model pioneered by Dongcheng district in 2005. In urban areas, each district (区) counts as one large grid. The neighborhoods (街道) in the district are considered a sub-grid. The neighborhood is then divided into several communities (社区), each of which is a small grid. Each community is further divided into several grids (网格). Comprehensive management and service platforms (综合管理服务平台) are established at three levels – community, neighborhood, and district. In rural areas, each county is considered one large grid, with the townships (乡镇) (equivalent to an urban neighborhood) as sub-grids. The equivalent of an urban community in the rural areas is the “administrative village” (行政村). The “natural villages” (自然村) within each administrative village are the basic grids.

The size of a basic grid (基层网格), the smallest unit in the grid management system, appears to vary slightly. While Dongcheng district in Beijing used physical size (10,000 square meters) to designate each basic grid, other jurisdictions chose to form grids on the basis of the number of residents. For example, in Guangdong each basic grid consisted of about 1,000 people in 300 to 500 households.¹⁸ The city of Tangshan in Hebei also set the size of its basic grids at 1,000 residents each (in about 300 households)¹⁹ In Chengdu, however, the size of a basic grid – averaging 1,400 residents per grid – was larger.²⁰ The rule of the provincial government of Jiangsu on grid management stipulates that a basic grid in urban areas should include 300–500 households and a basic grid in rural areas should include 300 households.²¹

As in the case of Dongcheng district, a typical grid consists of several key personnel, such as a police officer (who is responsible for several grids), a grid director, a grid attendant (either full-time or part-time), and an unspecified number of assistant grid attendants. To extend the CCP’s presence, a grid usually has a party cell or a party branch. Chengdu, for instance, uses the so-called a “1+3+N” model. A police officer works with three other grid personnel – one assistant police officer, one grid attendant, and one member of the comprehensive management team (综治队员). These four individuals are assisted by an unspecified number of community activists, such as “building chiefs” (楼栋长), public safety activists, and volunteers wearing red

¹⁸ “三部门发布 9 个新职业, 广东配备 17 万名城市管理网格员,” July 10, 2020, http://lsj.gz.gov.cn/gzdt/content/post_6450153.html, accessed January 20, 2021.

¹⁹ 河北日报, “河北深化平安建设,” August 14, 2020.

²⁰ 刘航颖, “新时代枫桥经验推动网格化管理,” *Journal of Sichuan Police College*, 31 (2) (2019): 24–29.

²¹ “江苏省城乡网格化服务管理办法,” December 22, 2020, http://www.jiangsu.gov.cn/art/2020/12/22/art_64797_9611723.html, accessed January 20, 2021.

armbands (红袖套).²² In the resort city of Beidaihe in Hebei, each grid has a grid director, a grid instructor (网格指导员), one grid attendant, one grid supervisor (督导员), and several assistant grid attendants (网格协管员).²³ In rural communities, grid management depends critically on CCP members and village officials. In Taizhou in Zhejiang, for example, a grid is supervised by an instructor, who assumes overall management of the grid. The instructor is usually a village official and usually a party member. Grid directors are village party chiefs. They mainly rely on full-time grid attendants and part-time workers or volunteers.²⁴ In one county in Hubei, township officials are grid supervisors, while the party chief of an administrative village (行政村) serves as the grid director. Village group leaders (村民小组长), other village officials, informants (信息员), and party group leaders (党小组长) serve as assistant grid attendants.²⁵

Despite the impressive titles given to those staffing the grids, most of them appear to be part-timers, volunteers, or government employees with other full-time responsibilities. Perhaps the only full-time personnel dedicated to performing the responsibilities assigned to each grid is the grid attendant. But in many jurisdictions, lack of funding forces local officials to label people already employed by the neighborhood committees as “grid attendants.”

For example, in one urban district in Suzhou, grid attendants are mainly public security management assistants (公安协管员). It seems that local authorities merely re-label an existing auxiliary security force to show that they are implementing the central government’s order on grid management.²⁶ In Dazhou municipality in Sichuan, existing party officials double up as grid leaders. The neighborhood committee party chief, most likely already a salaried employee of the state, concurrently serves as the neighborhood grid director. Only 3 percent of all grid attendants are paid full-timers. The rest are part-time.²⁷ In Jing’an district in Shanghai, the party branch chief of each residential district or neighborhood concurrently serves as the head of the large grid covering the neighborhood, while the heads of the neighborhood committee serve as deputy heads of the same grid.²⁸ Hebei has adopted a similar approach to staffing grid management. Salaried community officials serve as grid directors, while a police officer assigned to maintaining law and order in the community is given the title of grid instructor. Grid

²² 刘航颖, “新时代枫桥经验推动网格化管理。”

²³ 刘艳芳, “河北省城市社区网格化管理模式优化路径研究,” 中国集体经济 No. 6 (2019): 35–36.

²⁴ 陶建钟等, “双向互动:基层网格化管理的逻辑,” 中共杭州市委党校学报 1 (2020): 67–72.

²⁵ 陈寒非, “网格化简约治理,” *Academic Exchange*, No. 314 (2020): 61–76.

²⁶ 吴昌蓉等, “公安大数据背景下的网格化社会治理创新,” 森林公安 1 (2020): 14–19.

²⁷ 刘卓知, “城市基层社区网格化管理中的问题与对策研究,” *Sichuan University of Arts and Science Journal* (July 2019): 62–68.

²⁸ 董幼鸿, 魏箐 “超大城市社区安全风险精细化管理,” 上海城市管理(Shanghai Urban Management), No. 6 (2020):10–21.

attendants and supervisors are representatives of residents who are supposedly nominated democratically.²⁹

The most likely explanation for staffing grid management with essentially the same personnel as the neighborhood and village committees is the cost of paying for additional dedicated full-time positions. In an urban district in Quanzhou municipality in Fujian, the cost of a full-time grid attendant, including salary, benefits, and equipment, was 36,000 *yuan* in the mid-2010s. The expense was shared evenly between the district and the neighborhoods.³⁰ Grid attendants in Hebei province were reportedly paid 1,500 *yuan* a month (after deduction of payroll taxes) and grid directors were paid 2,000 *yuan* a month (also after deduction of payroll taxes). Although the amount may seem relatively low, the total cost may be unaffordable for local governments, which must also fund the operating expenses of grid management. For instance, if we accept Hebei's claim that it has set up nearly 100,000 grids and hired 123,000 grid attendants, the personnel costs of 100,000 grid directors and 123,000 grid attendants each year will total 6.1 billion *yuan* (including the payroll taxes).³¹ Few revenue-starved neighborhoods and districts can afford this extra expense.

The Functions of Grid Management

As conceived by the Chinese government, grid management complements other components of the Chinese surveillance state, such as the widespread deployment of surveillance technology (video cameras, facial recognition, big data analytics, and sensors). If implemented fully, with grids staffed with well-trained and equipped attendants, grid management can conceivably strengthen the capabilities of China's surveillance state. At the same time, Chinese authorities also appear to see real potential of improving the delivery of social services, such as public sanitation, safety, fire prevention, traffic management, and resolution of routine disputes among residents.

The Chinese government's objectives for setting up grid management can be seen in the implementation documents issued by the local governments. Some local governments, such as Shanghai, emphasize the delivery of social services, while others, such as Jiangsu, focus more on social control. Shanghai's rules on grid management require that grid attendants inspect public facilities and infrastructure, such as manhole covers, fire hydrants, public telephone booth, traffic lights, trash cans, gas stations, and trees on streets, and report incidents, such as graffiti, illegal structures, soot and smoke pollution caused by cooking, illegal practice of medicines, illegal

²⁹ 刘艳芳, “河北省城市社区网格化管理模式优化路径研究.”

³⁰ 陈春华, 郑文平, “网格化服务管理的洛江模式,” 人民法治, No. 7 (2017): 76–78.

³¹ The number of grid directors and attendants is from 河北日报, August 14, 2020, “河北全面深化平安建设纪实.” Total personnel costs include payroll taxes paid by employer and employee, averaging 33 percent at the lowest end of the range. <https://www.gpminstitute.com/publications-resources/Global-Payroll-Magazine/november-2018/what-you-need-to-know-about-payroll-in-china>, accessed January 30, 2021.

food processing operations, and so forth.³² By comparison, Jiangsu’s regulations on grid management, issued in November 2020, make it clear that grids should be used to strengthen public security and maintain social control. The main functions of grid attendants in Jiangsu include collecting, registering, and verifying information about all residents and housing in the grid and “information about the dynamic movement” of residents; fully investigating (排查) and reporting conditions and problems of law and order (社会治安) and potential hazards to public safety; providing assistance for the prevention and handling of “unexpected incidents” (突发事件), handling of routine law enforcement incidents and security operations of major events (重大活动安全保卫工作); providing assistance for the handling of petitions, domestic violence, and other conflicts affecting social stability; providing assistance for the investigation of and visits to individuals subject to community correction, released ex-convicts, drug users, serious mentally ill patients with records of creating incidents and harm, beggars, and other “key groups” (重点人群); providing assistance to the work of protecting against infiltration, espionage, splittism, terrorism, and evil cults.³³

The document on implementing grid management issued by the CCP political and legal committee of Pingdu municipality in Shandong in May 2013 spells out seven principal tasks. Topping the list is information gathering and collection on a regular basis. Grid attendants and grid informants (网格信息员) are required to enter residents’ homes or pay regular visits to maintain up-to-date information about residents, including identified subjects of surveillance-labeled key groups (重点人群) in the grid. Such information is to be entered into a database and kept constantly updated. Additionally, grid attendants are to maintain awareness of the public facilities, types of individuals (人员类别), social groups, and service items (管理项目) in the grid. Grid attendants also serve as conduits for public opinion sentiments and they report the needs of the public. They are required to report problems related to public safety, community management, and unexpected incidents (突发事件).³⁴

The rules on grid management issued by the township government of Chonggang in Pingluo county in Ningxia in 2019 provide very detailed instructions on how grid attendants should perform their duties. While laying out their general mission as collecting information about residents, reporting public sentiments, and performing a variety of social services, grid attendants are required to visit at least ten households per week. They must also report information about at least one incident per week. Additionally, they must pay at least one visit per week to high-priority targets of surveillance, such as drug users, individuals in community correction programs, practitioners of “evil cults,” and petitioners. They must visit “key petitioners” (重点上访人员) once every day. Information about these visits must be entered into the grid

³² “上海市城市网格化管理办法,” August 5, 2013, <http://zct.ideatob.com/mp/?at=5&lb=0&bno=2128&aid=>, accessed January 30, 2021.

³³ “江苏省城乡网格化服务管理办法,” December 22, 2020, http://www.jiangsu.gov.cn/art/2020/12/22/art_64797_9611723.html, accessed January 20, 2021.

³⁴ “平度市委政法委, ‘关于全面推行城乡社区网格化服务管理工作的实施意见,’” May 20, 2013, <http://www.pingdu.gov.cn/n2/n156/n157/n159/150523030553501783.html>, accessed January 30, 2021.

management information system on a weekly basis. Grid attendants whose poor performance results in collective petitions or protests will be penalized.³⁵

Because of the surveillance orientation of grid management, its implementation unsurprisingly prioritizes gathering information on residents and monitoring their movements within each grid. Open-source materials, such as official news stories and articles by Chinese academics, suggest that surveillance has likely been strengthened by grid management, even though this system performs poorly as a delivery vehicle of social services.³⁶ For instance, in Suzhou, grid attendants pay regular visits to households to verify and collect information (such as the number of residents and employment). They also collect information on public sentiments, disputes among residents, and crime, and they report such information to the platforms maintained by the district and simultaneously to the police officers responsible for the area. During major holidays or sensitive periods, grids step up the monitoring of “key individuals” likely to cause incidents and provide to the responsible parties (their employers) and Suzhou’s office in Beijing (tasked with intercepting petitioners) their information (cellphone numbers, identities, and physical features).³⁷ Open-source materials also refer to the role of grid attendants in detaining political suspects and acting as informers on groups under surveillance. In a district in Fushun municipality in Liaoning, grid attendants reportedly caught two “cult members” in the act of distributing leaflets. Grid directors were also instructed to encourage residents to provide tips on drug users and traffickers and to guarantee their anonymity.³⁸

Reliable and well-functioning information technology platforms are central to the effectiveness of grid management because, as designed, grid attendants are required to report the information about residents and incidents in the grid to the neighborhood’s or township’s platform, which will in turn, at least theoretically, transmit the information to the platform of the district (or county), which will then send the information to the city’s platform. The idea behind this multi-layered, sophisticated, and integrated information system is to provide real-time awareness of events that potentially may endanger public safety, disrupt people’s lives, or undermine stability.

Another critical component of grid management is its supposed integration with the various types of surveillance equipment installed in each grid. To enable the digitization of grid management, local authorities set up an elaborate system of coding major public facilities. The government of Dongcheng district in Beijing assigns a code to every public facility (in total 168,339 items), including public toilets, parking lots, streetlights, and street trash cans.³⁹ In Shanghai’s Jing’an district, grid attendants wear smart wrist bands equipped with Bluetooth technology. The band automatically connects with sensors installed on their assigned patrol routes, so that their movements are recorded and sent to the computer running the platform.

³⁵ 平罗县崇岗镇人民政府, “关于印发崇岗镇网格化服务管理暂行办法的通知,” May 17, 2019, http://www.pingluo.gov.cn/xxgk/zfxxgkml/wj/bmwj/201905/t20190524_1521326.html, accessed January 30, 2021.

³⁶ 刘艳芳, “河北省城市社区网格化管理模式优化路径研究.”

³⁷ 吴昌蓉等, “公安大数据背景下的网格化社会治理创新.”

³⁸ 马占国, “织密基层创新治理一张网,” 共产党员 No.24 (2020): 30.

³⁹ 张彰, “城市网格化管理的两种代表模式.”

Their locations can be instantly identified when they report problems.⁴⁰ One district in Suzhou, a wealthy city, reportedly installed a large number of hi-definition cameras monitoring streets and shopping centers and set up numerous “electronic checkpoints” equipped with facial recognition technology.⁴¹ Haidian district in Beijing, where some of China’s most prestigious universities are located, boast the most advanced grid surveillance system. Its surveillance platform consists of a visual surveillance system (based on cameras and facial recognition) and a “smart early warning system” (based on sensors), and it can reportedly automatically spot smoke and fire, excessive crowding, suspicious activities and crime in progress, and speeding vehicles. This system is capable of automatically capturing the facial images of pedestrians and matching them against blacklists. Alerts generated by a match are automatically sent to responsible individuals and officers. Residents can report incidents (such as problems with trash and potholes) through an app to grid management.⁴²

However, the deployment of technology to enhance the surveillance capabilities of grid management seems uneven across the country. Shanghai, Suzhou, and Beijing are likely exceptions rather the rule because, as we discuss below, one of the most difficult obstacles in turning grid management into an effective tool of social control and delivery of services is the effective deployment of technology in general, and the integration of multiple information platforms in particular. For the moment, it is reasonable to believe that grid management remains a labor-intensive and low-tech system.

Assessing China’s Grid Management: Some Concluding Thoughts

The grid management system the Chinese government has been building is an ambitious project to extend its surveillance capabilities further into Chinese society. At the moment, despite claims made by provincial and local governments about implementation of the system, available evidence indicates that this remains a work in progress and the Chinese party-state will confront enormous challenges in fulfilling its goal of dividing Chinese society into more than one million small grids patrolled by full-time attendants and equipped with hi-tech information and surveillance technologies.

Perhaps the greatest difficulty facing local governments in constructing a highly capable grid management system is funding. Like many programs conceived in Beijing, the central government has not provided dedicated funding to localities to set up and maintain grid management. The extra costs of personnel, equipment, maintenance, and tech support thus fall squarely on the budgets of local governments. If one full-time attendant is hired for each grid, a minimum requirement if grid management is to function as designed, China will need to add 1.4 million grid attendants to the payrolls of its local governments (assuming China’s 1.4 billion people are divided into 1.4 million grids of 1,000 each). The size of this auxiliary security force

⁴⁰ 董幼鸿，魏箬，“超大城市社区安全风险精细化管理。”

⁴¹ 吴昌蓉等，“公安大数据背景下的网格化社会治理创新。”

⁴² 马建国，”田村路街道网格化管理系统建设，”*Urban Managerial Technology*, No. 4 (2019): 59–61.

will be three-quarters the size of China's uniformed police force.⁴³ If each attendant is paid 3,000 *yuan* a month (including benefits), this force will cost 50.4 billion *yuan* each year, about 4 percent of the total public security budget of local governments.⁴⁴ If we include other necessary expenditures associated with grid management (compensation for part-time personnel, equipment costs, and so forth), the total amount of spending on grid management would be much more. While wealthier cities may be able to afford the extra spending, the less wealthy jurisdictions are unlikely to be able to afford this. Unsurprisingly, research by Chinese scholars has identified the lack of resources and unreliable funding as critical problems for building and sustaining grid management. Due to the lack of resources, local governments have great difficulty in attracting and retaining well-qualified, tech-savvy, and younger people to work as grid attendants. Consequently, turnover rates among grid attendants is reportedly high.⁴⁵

Besides inadequate resources, grid management suffers from two design flaws. The legal status of grid attendants is vague as is their authority to enforce government regulations and to collect information. Grid attendants are not employees of the state. Technically, they are contractors of neighborhood or village committees (which are social organizations, not state organs). The National People's Congress has yet to pass legislation defining the legal status and authority of grid attendants and other personnel. The vagueness of their status and authority affects the work performed by grid attendants, who often encounter resistance when they try to enter the homes of residents to gather information or enforce rules on traffic, sanitation, or building codes.⁴⁶ The other flaw is the excessive paperwork, or busy work, they must perform. Since grid management is designed to gather information on incidents and potential hazards in a given neighborhood, evaluation of the performance of grid attendants unavoidably tilts toward the amount of information they generate. As a result, grid attendants engage in a lot of busy work (completing paperwork and posting on social media) that has no impact on improving the delivery of services. In the countryside, where the government delivers far fewer services, grid attendants are under pressure to report incidents or issues requiring attention because that is part of their evaluation metrics. They sometimes report false information or trivial issues to meet their

⁴³ In 2015, China Life claimed that it provided insurance coverage for 1.8 million police officers. “渭南日报中国人寿为全国 180 万公安民警提供人身意外伤害保险,” <https://web.archive.org/web/20170612212153/>; <http://www.wnzfw.gov.cn/index.php?m=content&c=index&a=show&catid=45&id=6929>, accessed January 19, 2021.

⁴⁴ In 2019, total domestic security expenditures were 1.39 trillion *yuan*, of which 1.206 trillion *yuan* was funded by local governments. *China Statistical Yearbook 2020*.

⁴⁵ 陈春华, 郑文平, “网格化服务管理的洛江模式”; 刘航颖, “新时代枫桥经验推动网格化管理”; 董靖壹, 侯玉芬, “社区警务网格化管理的实践优化探索,” 法制与经济, 10 (2020): 31–33; 孙涛, 韩清颖, “我国城市社区网格化管理建设,” *East China Economic Management* 33 (5) (2019): 9.

⁴⁶ 方诗匀, “网格化管理与基层自治组织,” *Central China Normal University Journal of Postgraduates*, No. 3 (2019): 65–69; 张雨, “基层网格化管理模式研究,” 合作经济与科技 No. 3 (2019): 169–171.

quotas. Our study shows that 90 percent of the issues or incidents reported by grid attendants in the countryside are trivial or useless.⁴⁷

Equipping grid management with reliable and functioning information technology and connecting different grids into integrated information platforms appear to be serious obstacles in most jurisdictions. Grid management is designed to fuse human intelligence and information technology to provide real-time awareness to the higher authorities, thus enhancing the state's ability to maintain surveillance and social control and to improve the delivery of services. However, research by Chinese scholars indicates that grid management suffers from inadequate IT equipment and support.⁴⁸ To be sure, with sufficient funding and well-trained personnel, China should be able to solve this technological challenge in due course. But as of now grid management is mostly a labor-intensive and low-tech instrument of social control.

What appears to have happened so far with respect to implementation of grid management is a rather familiar Chinese story in which the central leadership issues an ambitious, if not impractical, order but provides few resources for local governments to execute it. As a result, local authorities are forced to improvise, appearing, on the one hand, that they are faithfully carrying out Beijing's edict and, on the other, avoiding extra expenditures. In actuality, many – if not most – local governments merely designate as “grid attendants,” “grid directors,” and “grid supervisors” personnel who are already employed in neighborhood committees and villages (such as local party chiefs, community workers, police assistants, and activists) as proof that they have complied with Beijing's policy.

This assessment does not mean that the introduction and implementation of grid management has produced no net gains in China's capacity for surveillance and social control. In all likelihood, such capacity has improved where local governments have hired full-time grid attendants (who serve as additional informants) and have invested resources in information platforms and surveillance equipment such as cameras and facial recognition.

At the same time, a labor-intensive and low-tech instrument of social control embedded in long-established neighborhood committees is an adequate tool for the Chinese government to wage a “people's war” on the coronavirus pandemic. No advanced technologies are required for checking on the identities of residents, enforcing quarantines, manning checkpoints, delivering groceries, and conducting contact tracing. Instead of praising grid management for its success in containing the pandemic, local governments perhaps should give the credit where it is due – to the neighborhood committees of Maoist-era vintage.

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⁴⁷ 刘锐, “农村网格化管理神视,” 贵州社会科学, 364 (4) (2020): 151–157.

⁴⁸ 刘艳芳, “河北省城市社区网格化管理模式优化路径研究”; 陈春华, 郑文平, “网格化服务管理的洛江模式”; 王昕生, “社会治理现代化视域下的新冠肺炎应对,” 山东经济战略研究, 5 (2020):14–16.

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