Truth and reality with Chinese characteristics

The building blocks of the propaganda system enabling CCP information campaigns

DR SAMANTHA HOFFMAN, TILLA HOJA, YVONNE LAU AND LILLY MIN-CHEN LEE

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Policy Brief
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Executive summary

The Chinese Communist Party (CCP) is leveraging its propaganda system to build a toolkit to enable information campaigns. Its objective is to control communication and shape narratives and perceptions about China in order to present a specific version of truth and reality, both domestically and internationally. Ultimately, the CCP aims to strengthen its grip on power, legitimise its activities and bolster China’s cultural, technological, economic and military influence.

The CCP seeks to maintain total control over the information environment within China, while simultaneously working to extend its influence abroad to reshape the global information ecosystem. That includes not only controlling media and communications platforms outside China, but also ensuring that Chinese technologies and companies become the foundational layer for the future of information and data exchange worldwide.

This research report finds that the CCP seeks to harvest data from various sources, including commercial entities, to gain insights into target audiences for its information campaigns. We define an information campaign as a targeted, organised plan of related and integrated information operations, employing information-related capabilities (tools, techniques or activities) with other lines of operation to influence, disrupt, corrupt or manipulate information — including the individual or collective decision making based on that information — and deliberately disseminated on a large scale. The party also invests in emerging technologies such as artificial intelligence (AI) and immersive technologies that shape how people perceive reality and engage with information. The aim is to gain greater control, if not dominance, over the global information ecosystem.

To understand the drivers, tools and outcomes of that process, this report and its accompanying website (ChinaInfoBlocks.aspi.org.au) examine the activities of the People’s Republic of China (PRC) in the information domain, particularly its investments in technology and research and development (R&D) companies that might serve as ‘building blocks’ for the party’s information campaigns.

Specifically, this research comprehensively maps the CCP’s propaganda system, highlighting the linkages between the Central Propaganda Department, state-owned or -controlled propaganda entities and data-collection activities, and technology investments in Chinese companies, many of which now operate globally.

This research illustrates the various ways in which the party-state is leveraging the propaganda system and commercial entities to gain access to data that it deems strategically valuable for the propaganda system and its ongoing information operations. It also shows how the propaganda system uses new and emerging technologies, including generative AI, mobile gaming and immersive technologies, to establish and maintain control of the narrative and continuously refine its toolbox and techniques.

It’s imperative that policymakers develop robust defences and countermeasures against future disruptive information campaigns from Beijing and to ensure an open and secure global information environment. In mapping those companies linked to China’s propaganda system that are seeking market dominance in key technologies, and how their activities may support CCP efforts to shape the global information environment, this project aims to inform government and industry decisions on digital supply-chain security, supporting policies for safer and more secure digital technologies.

The first section of this report lays out the fundamentals of CCP theory that have, over decades, defined the party-state’s strategy in the information domain. A theoretical understanding of how the CCP conceptualises its goals is important in unpacking the different tools used to achieve them. The second section outlines the CCP’s complex and vast propaganda system and how it works. Later sections expand on the ways in which CCP theory underpins the propaganda system and its activities, including through practical examples and case studies.

This report is accompanied by a website that offers detailed network diagrams of the relationships between China’s propaganda system and the companies associated with it: directly, through a state-ownership structure linking back to the propaganda system, or indirectly, through significant state support. The website also hosts case studies relevant to the report findings. The map can be explored on the website, Identifying The Building Blocks of China’s Information Campaigns (ChinaInfoBlocks.aspi.org.au).
Research methodology

The CCP’s propaganda efforts on social media have been widely studied, enabling a baseline understanding of common narratives and tactics. Previous ASPI research, for example, has tracked a persistent, large-scale influence campaign linked to Chinese state actors on Twitter and Facebook. Several other research institutes have published important research on how the Chinese party-state attempts to control the information environment globally.

China’s propaganda system is a vast structure. Under its direct control or with its direct support are a web of additional entities whose portfolio contributes to the party’s ability to meet its strategic aims in the information environment. Countries that understand the ‘invisible architecture’ of the CCP’s propaganda system and technologies will be better able to address and respond to its global efforts to skew the information environment.

Important research questions remain understudied. In particular, research on the building blocks that need to be in place to support and inform successful efforts to shape the information environment is limited. What’s the Chinese party-state doing to build its capacity to control ‘truth’ and influence how external audiences perceive, engage with and question reality?

To bridge that knowledge gap, this project examines how the party-state is leveraging the propaganda system:

1. **through commercial entities**, by collecting data or gaining access to datasets that it deems strategically valuable that could be used for propaganda purposes, including potentially for current or future information operations (for example, undertaking data-collection activities that build the party-state’s capacity to generate insights on current or potential targets of information operations)

2. **through state support**, by investing in R&D and access to new and emerging technology to shape or distort the information environment both domestically and globally.

Our project is based on ASPI’s 2019 report, *Engineering global consent*. That report first identified Global Tone Communications Technology (GTCOM), a machine-translation company that’s controlled by the CCP Central Propaganda...
Department. GTCOM claims that it accesses data from social media and has downstream access to datasets of the internet of things (IoT) and software products that it supplies, mainly to other PRC technology companies, to generate insights to support China’s state security and propaganda work.3

Building on *Engineering global consent*, we’ve sought to identify and explain how the Chinese party-state’s expansive propaganda system exploits new and emerging technologies and seeks to shape or distort the information environment both domestically and globally. To answer these questions, we generated network graphs describing the relationships between companies in our dataset, which are mostly Chinese state-owned or backed by state funds, with direct links to the propaganda system and other entities. We used that research to better understand areas of business activity associated with the PRC’s propaganda system, especially when such activity is related to data collection, aggregation and processing.

Our research effort involved identifying entities linked to the Propaganda Department of the Chinese Communist Party’s Central Committee (‘the Central Propaganda Department’), provincial-level propaganda departments, or other party-state bodies linked to the propaganda system, such as the Ministry of Culture and Tourism. This project began with a months-long effort to build a network graph of companies that were directly and indirectly linked to the Central Propaganda Department. Our research included looking for subsidiaries, shareholders and strategic cooperation and MoU partners of the companies we identified. Our information sources focused on PRC-based company databases and shareholders, and included company websites, company press releases and corporate disclosure documents. We then narrowed the scope of our research to focus on the specific case studies covered in this report.

Party-state news and publishing outlets were included in our research because the Central Propaganda Department is responsible for the supervision of news and publishing work, and those outlets are key platforms for disseminating information. However, rather than simply mapping out the names of media and publishing outlets, and their publication outputs domestically in China and overseas, our research emphasis was on identifying where those outlets are establishing branches or partnerships that expand their business activity into areas of business related to new and emerging technology.

While this research has revealed large amounts of previously inaccessible information on Chinese companies with links to the CCP’s propaganda institutions, it relies on publicly available information sources that are accessible outside mainland China. Continued research on these connections, as well as on connections between these types of companies and other parts of the party-state bureaucracy, is required.

**Key findings**

The report places the PRC’s propaganda system in the context of the CCP’s overall strategic frameworks, which are filtered down to specific policy outputs. Key findings are as follows:

- **The Chinese party-state sees data as central to its ability to modernise its propaganda efforts in the global information environment.** Unlike the legislation of other state actors, China’s 2021 Data Security Law clearly articulates a vision for how data and data exchanges contribute to an overall national strategy (see ‘The propaganda system and its feedback loop’ at page 13). It prioritises data access and the regulation of data flows as part of its efforts to ensure control.
  - That data is global. For example, China’s People’s Public Opinion Cloud combines about half a million information sources across 182 countries and 42 languages to support the Chinese Government’s and PRC enterprises’ international communication needs.4 The platform has both government and corporate applications and provides tools for public-security agencies to monitor the information environment and public sentiment on sensitive events and topics.5

- **The CCP sees emerging technology, such as e-commerce, virtual reality and gaming, as a means to promote a CCP-favoured perspective on truth and reality that supports the official narrative that the CCP seeks to project (even if those technologies may also be potentially hazardous to the party’s interests). This is especially true**
in relation to the CCP’s ability to conduct information campaigns and shape global information standards and foundational technologies.

- The CCP’s national key cultural export enterprises and projects lists (both the 2021–22 and 2022–2023 versions), name dozens of mobile gaming companies and mobile games that receive state support (see ‘The perception of reality’ at page 19), including subsidies, so that they can continue to enjoy global success and help advance the mission to boost China’s cultural soft power.

- In e-commerce, for example, companies such as Temu (which became the most-downloaded free iPhone app in the US in 2023) also collect large amounts of data that’s likely to be shared with the PRC’s propaganda system. In gaming, popular video games such as Genshin Impact, the developers of which receive Chinese state support linked to the propaganda system, create similar security risks due to the strategic value of the user data that they generate and collect.

• Under Xi Jinping’s leadership, the CCP has renewed its emphasis on a national strategy of media convergence that brings together traditional and ‘emerging’ media across various dimensions—content, channels, platforms, operations and management—to enhance the agility of propaganda initiatives in responding to real-time shifts in public sentiment. Media convergence is directly linked to the perception that an absence of guidance on public opinion risks China’s security and stability. The party uses digital media, particularly the data resources that digital media help to generate, to improve its ability to use media effectively in its communications strategy and to create feedback loops in China and internationally.

**Policy recommendations**

Policymakers face two key challenges: first, to apply the CCP’s way of thinking to efforts to counter information campaigns, before they’re conducted; and, second, to resist China’s efforts to shape global information standards and core foundational technologies for Web 2.0 and beyond.

Informed by the findings contained in this report, we make the following recommendations for governments, civil society, social-media platforms and hardware and software developers and vendors:

1. **Governments should exert pressure on technology companies to conduct more thorough reviews of their digital supply chains to ensure that their Web 2.0 and future Web 3.0 foundations, and the companies and technologies that they rely on, are transparent and secure.** Improving due diligence, transparency, trust and security by design in the digital supply chain, at both the technology and systems/applications layers, must be considered, especially for companies engaged in government procurements. That can be achieved by imposing more stringent reporting requirements, developing high-risk vendor frameworks, imposing and enforcing privacy and data requirements, and developing consistent data-minimisation approaches. Already the US and partner nations have sought to enhance software security by requiring companies working with governments to provide software ‘bills of materials’. The Quad Cybersecurity Partnership’s ‘joint principles for secure software’ is an excellent template for considering enhanced transparency regulation.

- Technology companies, including vendors, platforms and developers should commit and adhere to the Cybersecurity Tech Accord, develop security by design standards, and impose greater moderation and fact-checking standards across online platforms, social media, etc. to reduce the potential for attacks on the availability, confidentiality, and integrity of data, products, services, and networks and highlight mis- and dis-information and propaganda. As China’s information campaigns seek to weaponise truth and reality, increasing vigilance, verification and veracity must be asserted to ensure information consumers are offered the best chance of identifying mis- and dis-information influences.
Governments must exert significantly more policy attention to the regulation of technologies used for surveillance and related immersive technologies. Few governments have developed broad definitions of those technologies or studied their privacy and data-security impacts. As a consequence, their regulation hasn’t been effective or focused on their future societal and national-security implications. More specifically:

- Governments should define machine learning and cloud data as surveillance or dual-use goods. For example, the European Union has identified dual-use applications of AI systems as an area of concern in their assessment process as part of the Ethics Guidelines for Trustworthy AI. The Council of Europe has also raised concerns with the Pegasus surveillance software. The US has identified cloud data as an export under the Export Administration Regulations that may attract dual-use controls. While these efforts are significant, regulation still lags the use of machine learning and cloud data by companies and governments, resulting in inconsistent application, a situation ripe for exploitation by authoritarian regimes. Governments should standardize and tighten regulation on the technologies and services not traditionally understood as surveillance or dual-use (data) products, including data-generating products and services in e-commerce gaming industries. Doing so would enable them to apply traditional tool sets for preventing access to goods of that nature, such as export controls, technologies and services not traditionally understood as surveillance or dual-use (data) products, including data-generating products and services in e-commerce gaming industries.

- Additionally, increased transparency in regard to which technology actors and entities, whether they’re involved in R&D activities or product sales, are acting on behalf of state interests could clarify what data is used for surveillance purposes and what data can be used to undermine another state’s sovereignty.

3. To further increase transparency, governments should also more clearly define which individual actors and entities are required to register under foreign-agent registration schemes. That includes Australia’s Foreign Influence Transparency Scheme, the US Foreign Agents Registration Act (FARA) and emerging equivalents elsewhere, such as the UK’s upcoming foreign influence registration scheme. The US, for example, used FARA to force PRC state-owned media companies such as Xinhua and CGTN to register as state agents. Based on the same logic, any technology company linked directly to China’s propaganda system or receiving state support to facilitate the party-state’s propaganda efforts could be required to register.

4. Internationally, governments should work to standardize the ways in which data is shared, and proactively regulate how it can be produced and stored. Efforts thus far have failed to reach accord, and many have been siloed within specific functional domains (such as meteorological data, social services, food and agriculture, finance and so on). Such efforts can reduce opportunities for authoritarian regimes to collect, use and misuse data in ways that harm ethnic communities, disparage and denigrate alternative perspectives and silence dissent in the global information environment. The International Organization for Standardization, together with the UN Centre for Trade Facilitation and Electronic Business, among others, should establish joint government–industry standardisation mechanisms.

5. Multilaterally, democratic governments should work together to develop a stronger institutional understanding of the future vulnerabilities and risks of new technologies, particularly in the digital technology ecosystem. That understanding should guide the development of new standards for emergent technologies and assist industry to commercialize those technologies with the goal of safety and security by design. The Quad Principles on Critical and Emerging Technology Standards are a good example of work that needs to occur on the future vulnerabilities and risks of new technologies.

6. Locally, governments and civil society should establish guardrails against the negative impacts of CCP efforts to shape the information environment, including through information campaigns such as media literacy and critical thinking campaigns targeting individuals and communities. Efforts should not only help users understand what’s ‘real’ and what’s ‘fake’, but also ensure that they have broader awareness of how entities supporting foreign information campaigns may be present in their supply chains, so that risks associated with them are identified and more reliably controlled.
Background: why the CCP wants to control truth

The CCP’s overarching goal for China, as then leader Deng Xiaoping (邓小平) stated in his famous 1978 speech, is to ‘change the backward condition of our country and turn it into a modern and powerful socialist state’. The first and second centenary goals are the party’s ultimate objectives, to achieve the ‘great rejuvenation of the Chinese nation’ (中华民族伟大复兴). According to the CCP, only the CCP is capable of delivering that outcome.

This report examines the PRC’s activity in investing in technologies and companies that it believes will give it unrivalled access to the global information domain and focuses on the technology and R&D activities that serve as building blocks for constructing information campaigns designed to shape truth and reality, and for potential market dominance—in China and the world—to achieve the ‘great rejuvenation of the Chinese nation’. The party’s objectives have global implications, particularly in terms of how the CCP builds China’s cultural, technological, economic and military power.

It’s essential that states understand how the CCP’s statements of intent translate into specific strategies and policies in the international domain, if they’re to develop adequate responses to them.

The Communist Party of China upholds the basic tenets of Marxism and the principle of seeking truth from facts. Based on China’s realities, we have developed keen insights into the trends of the day, seized the initiative in history, and made painstaking explorations. We have thus been able to keep adapting Marxism to the Chinese context and the needs of our times, and to guide the Chinese people in advancing our great social revolution.

—Xi Jinping, 1 July 2021

In 2021, China’s leader, Xi Jinping (习近平), declared that the party had achieved its ‘first centenary goal of building a moderately prosperous society in all respects’ and was ‘now marching in confident strides toward the second centenary goal of building China into a great modern socialist country in all respects’.

Xi said that the party ‘must persist in seeking truth from facts [实事求是] when studying and disseminating the party’s history, we must be vigilant of the influence of historical nihilism [历史虚无主义], and we must resolutely resist and oppose erroneous viewpoints and erroneous tendencies on the issue of party history.’ That guidance gives the CCP the status of China’s superior truth seeker, meaning that the party relies on its ‘truth’ to be the only accepted truth.

Historical nihilism and seeking truth from facts

Rewriting history is clearly important to Xi: in 2021, the CCP issued its ‘Resolution on History’, outlining the party’s version of its history and achievements and highlighting successes that the document attributes to Xi’s leadership as the party’s core. As analyst Isabel Hilton has pointed out, ‘to deviate is to attack the party: Xi has warned that historical nihilism [历史虚无主义] is “an existential threat [to the Communist Party] on a par with western democracy”’. Historical nihilism is to ‘deny [China’s] socialist path and the Communist Party of China’s leadership’. In other words, historical nihilism criminalises those perspectives on Chinese history and China’s narrative that diverge from the party’s tale of truth and reality.

The CCP also sees its ability to maintain power as inseparable from its ability to define truth and reality, or, as Xi said in his 2021 speech marking the 100th anniversary of the CCP’s founding, to ‘seek truth from facts’. The concept is a Chinese slogan adopted by the CCP that, on the surface, refers to the cyclical process of implementing theory into practice and learning from it. In practice, this process establishes the party’s version of the truth and reinforces its claim to possess objective reality. The party sometimes describes the idea as an ‘ideological weapon’. In essence, the concept of ‘seek truth from facts’ serves as a facade for a more selective interpretation of reality that aligns with the party’s agenda, rather than an impartial examination of objective evidence. That approach reinforces the CCP’s authority in defining what’s considered the truth in China’s narrative.
The party’s goals and concepts are pursued and applied through a large bureaucracy led by the CCP’s propaganda system.

The CCP’s propaganda, ideological and cultural efforts (which are collectively referred to as ‘propaganda work’ in this report) aim to control communication and shape domestic and global narratives and perceptions about China. That includes presenting Chinese culture, politics, society, history, geography and so on according to the CCP’s version of truth and reality, at home and abroad. It also includes investing in technology research and applications.

To understand how technology and R&D relate to ‘national rejuvenation’, and China’s goal of reshaping the global information environment, it’s necessary to examine the requisites for achieving national rejuvenation through the PRC’s state security concept (see box).

### The CCP’s state security concept

The party’s comprehensive state security concept (总体国家安全观) is a key requirement because it ensures that the party remains central to China’s ‘national rejuvenation’ on its own terms. The party’s political security (政治安全) is the root of state security, and it determines all its other aspects (Figure 1). It relates to national sovereignty, political power and systems, and ideology, which are all necessary for the party to maintain control over China. An article in the People’s Tribune stated: ‘Internally, political security is political stability and ideological domination, while externally, it is national sovereignty, independence and territorial integrity.’ Both internal and external dimensions require upholding the party’s claims about truth and reality.

As the concept of ‘political security’ suggests, the party views any entities that contest or are seen to contest the CCP’s version of the truth as ‘hostile forces’ (敌对势力). The party seeks to eliminate or undermine their right to speak, preventing them from revealing falsehoods in the party’s narrative about China. It’s willing to do so by force where necessary. As Mao Zedong explained in On practice, an essay that’s one of the fundamentals of his philosophical thought, opponents of change (that is, opponents of the party) ‘must go through a stage of compulsion before they can enter the stage of voluntary, conscious change’. That concept is still reflected in the CCP’s governing strategy, and those who counter its narrative can be severely punished.

Although the party is willing to use force to control ‘truth’ and ‘reality’, it prefers that threats in the political and ideological domain are controlled at the source, before they can emerge as problems. On issues of ideology and politics, the party therefore seeks to convince its subjects (the masses) of its truth as if they, as the subjects, are the owners of those ideas. Propaganda work is a central element for this reason.
Cultural security

Political security touches on several other facets of state security. Most relevant to this research is ‘cultural security’ (文化安全), which Article 3 of the 2015 State Security Law describes as a ‘guarantor’ of state security. Cultural security is closely tied to how the propaganda system attempts to construct how others view reality vis-à-vis propaganda work’s objectives.

Cultural security is strongly linked to Chinese history and the party’s presentation of it. George Orwell noted in his novel Nineteen eighty-four that ‘who controls the past controls the future: who controls the present controls the past.’ That idea isn’t unique to China, or even to authoritarian regimes per se, but is embedded in basic theory about power and how those seeking power seek to consolidate it. The story of the CCP’s ‘national rejuvenation’ objective, for example, depends on the belief that the party has lifted millions of people from poverty. But, as numerous scholars and historians have pointed out, the party was also responsible for the poverty experienced by a large portion of the population (see ‘Historical nihilism and seeking truth from facts’ at page 9).
The party’s control of the parameters of what’s true and not true helps to rewrite the past in preparation for the future. In the conduct of information operations, data is a resource that can help states better understand how to influence their target audience. China's concept of cultural security therefore provides an important framework for understanding the interests guiding the Chinese party-state's activities related to cultural protection in the information domain. In short, cultural security is the protection of the CCP’s version of what Chinese culture is and what it isn't. For the CCP, Chinese culture must be connected to its particular brand of socialism, even though, in reality, Chinese culture pre-dates the CCP. From the party’s perspective, if it allows Chinese culture to be defined by actors outside the party, whether those are Chinese actors or not, that potentially also lends credibility to the actors it sees as threatening its power.

‘Internal factors’ include the groups persecuted by the party-state, such as Tibetans, Uyghurs or Falun Gong. Those groups are threatening because they use culture and ideology to mobilise participants in a way that the CCP perceives as a threat. For example, the party reveals this threat perception when, in its execution of severe crackdowns and human-rights violations in Xinjiang, it targets ‘two-faced cliques’ and ‘two faced-persons’, who are seen to place loyalty to the Islamic faith, and other elements of Uyghur culture, before loyalty to the party. When it protects ‘traditional values’, the party isn’t simply promoting one narrative over another and selectively reporting history; it seeks to erase, and engages in actions to erase, those alternative histories or versions of the truth.

External actors seen as a threat to the party’s power, such as Taiwan, are similarly a threat in the cultural domain because they’re seen to present alternative versions of what China is and could be. Taiwan has a rich cultural history, within which traditional Chinese culture is a central element. Taiwan is also an alternative version of how China might have modernised under different political leadership.

Propaganda work

Propaganda work is one of the umbrellas under which the party seeks to turn its theory into practice. Domestically, the CCP employs propaganda to maintain control over information and shape the narrative. Simultaneously, it seeks to extend its influence globally to dominate and shape the global information ecosystem. That includes not only controlling media and communications platforms outside China, but also ensuring that Chinese technologies become the foundational layer, and its commercial platforms become the dominant market players, for the future of information and data exchange worldwide. By integrating both internal and external propaganda strategies, the party aims to strengthen its grip on truth and reality in China and on the global stage.

The digital age has forced China’s propaganda system to evolve, presenting new opportunities for its narrative dissemination. The rise of online information sources and platforms has driven a need for more targeted messaging to reach specific audiences. Meanwhile, the proliferation of information has changed the level of responsiveness that the propaganda system requires to effectively influence a target audience’s perceptions of reality. The changes have motivated an evolution towards more disruptive tactics used to manipulate the information environment. Despite the risks that the digital age creates for the CCP, it also offers unprecedented opportunities to access new audiences.

The following section provides an overview of the Chinese propaganda system and how it adapts in the state-owned media and publishing industries. It further describes how the propaganda system acquires the data resources necessary to improve the quality of its work.
The propaganda system and its feedback loop

China’s propaganda system is vast (see Figure 2 below and Table 1 on this project’s website). Multiple agencies from both the party and the state share responsibility for propaganda work; for some, it’s their primary focus, while others’ work includes a propaganda portfolio even when propaganda isn’t their main responsibility. The Central Leading Group for Propaganda, Ideological and Cultural Work (中央宣传思想文化工作领导小组) is the overarching party authority that oversees all propaganda work. The Central Propaganda Department supervises China’s media and publishing industries; linked to it is the Cyberspace Administration of China (CAC; 国家互联网信息办公室), which is responsible for overseeing online content regulation.

Figure 2: Key central organs responsible for propaganda work

Source: ASPI.

The party’s senior leadership is responsible for top-level guidance, planning and implementation of propaganda strategy. The top-level propaganda system plays an important role in communicating messages and policies from the party’s ‘core’ (Xi Jinping) down to the grassroots levels. When guidance is issued, specific policy planning and implementation are translated into action by various state and party agencies at the tiers below it, and the planning filters down to provincial and subprovincial-level subordinate agencies.

Implementation falls to various party-state agencies and public institutions (state-owned/operated) with propaganda responsibilities. Although it isn’t always clear how the agencies overlap and interact daily, the propaganda system follows a clear logic as to how policy objectives are proclaimed, disseminated and implemented. That is to say, central leading agencies oversee policy formulation and guidance, while subordinate agencies are responsible for adapting and implementing those policies.

This section of the report focuses on changes to China’s traditional media and publishing industries in response to propaganda requirements in the digital age. To better understand how the system communicates, we examine top-level
policy objectives related to the concept of ‘media convergence’ (媒体融合) and track how they transmit at a granular level. This illustrates where policy implementation involves enterprises, including state-owned enterprises (SOEs) and privately held enterprises (or enterprises with the appearance of being privately held) that have data-sharing arrangements with SOEs or engage in other forms of cooperation.

**Media convergence**

*Media convergence* is a national media strategy popularised under Xi Jinping’s leadership. In 2014, Xi highlighted the imperative of converging traditional and emerging media, such as social media, across various dimensions (content, channels, platforms, operations and management) to forge a ‘competitive new mainstream media’ (Figure 3). According to the China Media Project research centre, ‘new mainstream media’ refers to the ‘digital outlets’ created by traditional party-state media. They include the *People’s Daily*, which is directly under the CCP Central Committee’s control and is the party’s flagship newspaper. Party-state media have traditionally played a ‘front-line role in guiding public opinion’.

![Figure 3: Media convergence](source)

Media convergence is directly linked to the perception that an absence of guidance on public opinion risks China’s security and stability. That threat perception isn’t new but was clearly at the top of the agenda for early propaganda and ideological work under Xi.

Even before Xi popularised media convergence, the idea was reflected in the party-state’s response to particular events when it failed to grasp public opinion accurately, in turn demanding a more immediate and responsive approach to propaganda work. For example, in 2008, the *People’s Daily Online* established the People’s Daily Online Public Opinion Monitoring Office (人民网舆情监测室) to enhance the agility of propaganda initiatives in responding to real-time shifts in public sentiment. It was renamed the People’s Daily Online Public Opinion Data Centre (人民网舆情数据中心) in 2017. The original Public Opinion Data Centre was prompted by a forced-labour scandal at illegal brickyards in Shanxi Province in 2007, which sparked negative domestic public sentiment online and wide coverage in international media, castigating local party officials’ abuse of power. It also cast a shadow over China’s image internationally, particularly in the light of its upcoming role as host for the 2008 Olympics.

Media have continued to change substantially since then, and so has the government’s need to adapt. After China formally declared a Level 1 emergency (the highest level) in January 2020 during the spread of Covid-19, the PRC Government formed the ‘Central Leading Small Group for Work to Counter the New Coronavirus Infection Pneumonia Epidemic’ (中央应对新型冠状病毒感染疫情工作领导小组). The group was tasked with the emergency response to the Covid-19 outbreak, including in the information domain, signalling that propaganda and political control were equally, if not more, important to the party’s efforts than maintaining public health. The state-led information campaigns that followed the
outbreak sought to redirect blame elsewhere (namely to the US) and to draw attention to the positive contributions of PRC companies, such as donations of personal protective equipment. They were spread widely on international social-media platforms.\(^{59}\)

Through media convergence, China’s propaganda system seeks to create a feedback loop between the party-state and the public.\(^{60}\) The party uses digital media, particularly the data resources that those media help to generate, to improve its ability to use media effectively in its communications strategy and to create feedback loops in China and internationally.\(^{61}\) In 2019, for example, Xi discussed the importance of media convergence and called for an exploration of AI use in news ‘gathering, generation, distribution, receiving and feedback’ to help the party-state guide public opinion.\(^{62}\) Similarly, the Central Propaganda Group (中央宣讲团) has emphasised that media convergence can improve the party-state’s ability to deliver propaganda with impact.\(^{63}\)

The **People’s Daily**’s investment in new technology and data activities

Versions of the **People’s Daily** are published in multiple languages for global audiences (see [ChinaInfoBlocks.aspi.org.au/theme/media-publishing-industries](http://ChinaInfoBlocks.aspi.org.au/theme/media-publishing-industries)) through its digital arm, People’s Daily Online Co. Ltd. Less visible are the **People’s Daily**’s activities concerning media convergence. Digital media are more than just the online publication of material that might have formerly been published in print. For any actor in digital media and social media—whether an advertising agency seeking to generate revenue or a state actor seeking to understand its audience—user interaction data such as likes, comments, clicks, shares or user profiles (age groups, locations and other identifiers related to users’ preferences) is extremely valuable. That’s also true for a CCP entity whose mission is to serve the party’s goals on information dissemination and comprehensive security (see, for example, the ‘Gaming and questioning reality’ section at page 31).

In 2019, **People’s Daily Online** established the State Key Laboratory for Communication Content Cognition (播内容认知国家重点实验室).\(^{64}\) The lab was among an initial 20 national key laboratories approved by the Ministry of Science and Technology in 2019. It and others are similarly focused on leveraging AI and machine-learning technologies to support ‘media convergence’.\(^{65}\) This particular lab is intended to ‘facilitate precise distribution of the mainstream narrative, bolster mainstream public opinion, and foster societal consensus’.\(^{66}\) According to the **People’s Daily**, the lab’s work centres on AI and three ‘communication content cognition’ application areas:

1. theoretical science and calculation of the precise communication of mainstream values
2. intelligent content review and risk control ratings
3. national cyberspace governance based on the field of content communication.\(^{67}\)

One of the lab’s activities is to expand the use of new technologies for content dissemination, including immersive technologies such as virtual reality (VR) and extended reality (XR). Those are also described as ‘content technologies’.\(^{68}\) The **People’s Daily**’s 2022 content technology development report said that such technologies have the potential to ‘lead the digital transformation and in-depth integration, and drive the integrated development’ of different industries, such as entertainment, cultural tourism, health care, finance, sports and public services.\(^{69}\)

State financial and policy support for R&D of content technology also has a political agenda. The 2022 report pointed to the role of mainstream media in dissemination: ‘mainstream media must occupy the commanding heights in the application of content technologies, rely on national key laboratories, strengthen cognitive competitiveness’, and play a key role in influencing public opinion in the digital social space, to ‘serve ideological security and cultural security’\(^{70}\) (see ‘Cultural security’ at page 11).
Case study: Temu and People’s Data: Breaking down barriers between the party and enterprises

The CCP exerts decisive control over the policy formulation and implementation of its cybersecurity strategy, while the CAC oversees the portfolio (see Table 1 on the website). That allows it to maintain a vigilant stance towards the constantly evolving information landscape, adapting its strategies accordingly. One such evolution is from a focus on traditional ‘party-controlled media’ to a more comprehensive approach centred on ‘party-controlled data’ (党管数据). That shift is to safeguard national sovereignty, protect ideology and navigate the opportunities and challenges presented by technology and data in the modern era. By exercising control over data—including data collected from subsidiaries operating outside China, such as the fast-growing overseas e-commerce platform Temu—the CCP effectively gauges the pulse of public opinion, thereby gaining unprecedented insight into societal trends and preferences.

Under the concept of ‘party-controlled data’, the party is the highest-ranking authority overseeing the implementation of data security and responsibilities. This recognises data not only as essential for maintaining political control but also for shaping public opinion and influencing societal direction: the People’s Tribune has described the fundamental starting points of ‘party-controlled data’ as the ‘management of [data rights] ownership, management of standards, management of direction, management of rules, management of openness, management of safety and management of talent’.

People’s Data Management Co. Ltd (人民数据管理有限公司, or People’s Data) is at the forefront of the party’s efforts to implement ‘the theory and practice’ (理论和实践) of party-controlled data for the People’s Daily and People’s Daily Online. People’s Data is a wholly owned subsidiary of Beijing People’s Online Network Co. Ltd (北京人民在线网络有限公司), itself the business front of the People’s Daily Public Opinion Data Centre established in 2008. People’s Data is therefore a state-owned entity ultimately controlled by the CCP’s Central Committee.

People’s Data appears to focus on data sharing between government, enterprises and institutions and ensuring that they function effectively. According to the company’s website, the data platform ‘breaks down barriers’, enabling the ‘storage, management, and use’ of big data between party and government agencies at all levels of government, central SOEs, private enterprises and other institutions.

The company’s development strategy suggests that those data resources are pulled together across People’s Data partner entities and used to improve the way data resources are leveraged across the party-state and entities involved. The People’s Data website provides a list of many of those government and corporate partners (see Appendix 2 at page 38 for the complete list). Government partners include, for example, the Ministry of State Security, the Ministry of National Defence and the Ministry of Culture and Tourism. People’s Data also names more than 30 corporate partners and has cooperation agreements with at least 15 big data exchange centres across China.

People’s Data’s corporate partners are primarily, but not exclusively, SOEs. Some are well known and operate overseas, such as telecommunications giant China Mobile. Ride-sharing application operator Didi Chuxing Technology Co., or ‘DiDi’ (see ChinaInfoBlocks.aspi.org.au/theme/media-publishing-industries), is also on the list, as well as e-commerce giant Pinduoduo (PDD Holdings), which isn’t an SOE. PDD Holdings is incorporated in the Cayman Islands, and, since March 2023, its headquarters address shows in US Securities and Exchange Commission (SEC) and similar official filings as being in Dublin, Ireland. Despite that, the company maintains that its actual headquarters remain in Shanghai.

The operations of the businesses that we own and operate in China, and particularly those of the Pinduoduo platform, are subject to PRC laws and regulations. The laws and regulations governing the internet industry in China are relatively new and quickly evolving, hence bringing uncertainties to their interpretation and enforcement … For example, our operations in China are subject to regulatory approvals and permit requirements, oversight on cybersecurity and data privacy, and anti-monopoly and anti-unfair competition laws …

—Pinduoduo SEC filing, April 2023
PDD Holdings is probably better known outside China through its subsidiary, Whaleco Technology Limited, which operates the e-commerce platform Temu. As of April 2024, the Temu app has been downloaded more than 100 million times on Google. As of April 2024, Temu’s rapid global success is evident in its reported monthly users: as at April 2024, 77.5 million people in the US, 15.6 million in the UK, more than 15.5 million in Japan, 45 million in the EU, and more than 1.2 million in Australia.

Both PDD Holdings and Temu have been the subject of international controversy for their data-collection activities. In March 2023, Google suspended PDD Holdings from the Google Play app store due to reported ‘malicious’ software found on the app. At the time, PDD Holdings rejected ‘the speculation and accusation that Pinduoduo app is malicious just from a generic and non-conclusive response from Google’. Temu has also been scrutinised for its data-privacy practices. Apple, for example, stated that Temu had previously been found to be in violation of the Apple Store’s privacy rules.

The types of data that PDD Holdings and its subsidiaries share through the state-owned People’s Data platform aren’t identified in publicly available sources. Based on company admissions in privacy policies, it’s reasonable to assume that PDD Holdings’ data-sharing arrangement with People’s Data could also include sharing data generated through Temu. Temu’s privacy policy states that personal information may be shared with its ‘corporate parent, subsidiaries and affiliates’, as well as with ‘law enforcement, government authorities, and private parties, as we believe in good faith to be necessary or appropriate for the compliance and protection purposes’ (see Figure 3). Those compliance and protection purposes include to ‘comply with applicable laws, lawful requests, and legal process, such as to respond to subpoenas or requests from government authorities’. In the PRC, the risk stems from what’s considered lawful activity. Law in the PRC is political and is wielded as a tool to enforce and uphold the CCP’s political power. The law isn’t above the party-state, even if it’s used as a tool to manage party members.

How the data might be used depends on the intent of the end user. Temu stores data indicative of consumer preferences, such as decision-making habits. The data may also be geolocated and may include specific user-profile data, which may help to indicate how to target particular demographics.

If accessed and leveraged by state entities, now or into the future, the valuable and global datasets of user information generated by the Temu e-commerce platform could inform and enable more targeted foreign propaganda and information campaigns focused on, for example, specific countries leading up to elections, specific language groups (Spanish speakers, for example) or specific geographical regions on issues of global importance.

The US and other jurisdictions, including Australia, are developing frameworks to address ‘vendor-based national security risks’ associated with the data-broker ecosystem, which will be likely to include vendors such as Temu.

The CCP’s shift to ‘party-controlled data’ is a strategic move towards leveraging data as a cornerstone of governance and influence in the digital age. With that framework in place, entities such as People’s Data Management Co. Ltd have emerged as key players, facilitating the seamless exchange of data between government bodies, enterprises and institutions.

People’s Data has signed a strategic cooperation agreement with VNET Group Inc. (VNET, formerly 21Vianet Group, Inc.) to build a cloud service named ‘People’s Cloud’ (人民云). People’s Cloud supports national efforts such as ‘Eastern Data and Western Computing’. The initiative involves transferring data generated in China’s eastern regions to data centres located in its western regions for computational processing. It further establishes eight national computing hubs and 10 national data centre clusters to ‘accelerate the construction of a national integrated big data centre [system]’.

Part of the purpose of People’s Cloud is to support public-opinion monitoring, and, based on People’s Cloud, Beijing People’s Online Network Co. Ltd, People’s Data and Wenge Group collaborated to build a platform called the ‘People’s Public Opinion Cloud’ (人民舆情云). According to People Cloud, the People’s Public Opinion Cloud combines about half a million information sources across 182 countries and 42 languages to support the Chinese Government and PRC enterprises with international communication needs. The platform is described as having government and corporate
applications; for instance, in policing, it provides tools for public-security agencies to monitor the information environment and public sentiment about sensitive events and topics.101

Those activities are more broadly aligned with the kinds of activities our research for this project observed, particularly related to the transacting and sharing of data through data exchanges. As of September 2023, People’s Data said it had signed more than 15 cooperation agreements with big-data exchange centres, which are the focus of the following section.102 In July 2023, People’s Data signed a strategic cooperation agreement with the Zhejiang Big Data Exchange Centre (see ‘The perception of reality’ at page 19).103 The agreement said that People’s Data would ‘give full play’ to the big-data services experiences of the Zhejiang Big Data Exchange Centre and that cooperation would take place on public opinion, e-commerce and intellectual property, among other topics. It further implied that there would be a data-sharing arrangement between the two entities.104 As described below, like People’s Data, the Zhejiang Big Data Exchange Centre has many data-sharing relationships with external parties.

The following three sections examine a subset of the types of data collection and processing and R&D activities that we observed in our research and explain how the propaganda system seeks to use or leverage those activities to shape the target audience’s ability to perceive, engage with and question reality. That includes activities related to data-exchange centres and cultural data copyright, generative AI, and mobile gaming and immersive technologies.
The perception of reality

Big data is processed to generate new findings and facts. In general, the way data is generated, validated and verified can influence how the data is processed and ultimately used to generate new facts. This section describes the CCP’s efforts to standardise data and drive the transaction of authorised data - to make data more usable, but also to play a role in defining what data, or facts, are considered valid, true and reliable. The party’s control over data access, whether that’s the data content or the method or platform for data transaction, is being politicised to propagate data that sets up parameters for future decisions.

One way of preventatively controlling the information environment is to affect how others might use data in a similar way. In part, rules on data localisation, such as those included in the Personal Information Protection and Data Security laws (which cover data-handling activities (数据处理活动) address those concerns. Article 2 of the Data Security Law, for example, specifies that the law applies to data-processing activities within the PRC’s territory, and outside where (ambiguously) data processing ‘harms the national security, public interests or the lawful rights and interests of individuals or organisations of the People’s Republic of China’.

Our research in this section focuses on the ‘management of data-handling activities’ as it relates to the establishment of ‘data exchanges’ and propaganda work. This project’s website (ChinaInfoBlocks.aspi.org.au) illustrates the relationships that we found between propaganda-work-linked entities and data exchanges. The activity of data exchanges further overlaps with two other objectives related to standards for how data is transacted and the use of technology to protect intellectual property, including ‘cultural copyright’ protection.

Data exchanges

The party’s efforts to manage the information domain are focused not just on narratives, but also on platforms. Controlling platforms in the current digital media landscape doesn’t rely solely on controlling media companies, but also on the ability to influence how data and information are constructed and exchanged. When an actor can influence which data is defined as true or valid and which is not, that creates the power to shape how reality is constructed even if the actor doesn’t have a direct role in processing that data and creating outputs. That’s why data exchanges are important in the context of this report.

In general, data exchanges are a proposed solution to the third-party data-access and data-standardisation problems, particularly as data becomes more and more central to the global economy. An article published by the World Economic Forum defined data exchanges as ‘platforms where information, or the right to access certain information under certain conditions, can be traded in an open, efficient and accountable way’. Others have defined data exchanges as ‘a digital marketplace of data assets where data suppliers and consumers can exchange data in a frictionless and seamless way’. Unlike other state actors, the Chinese Government clearly articulates a vision for how data exchanges specifically contribute to an overall national strategy. Where other countries have no clear leaders for the oversight of data exchange, Article 19 of China’s 2021 Data Security Law specifically says that the state is tasked with ‘data trading management, standardising data trading activities, and fostering a data trading market’. There are, of course, economic benefits from succeeding in meeting those objectives, but the party-state is clear that its interests are also political. Article 1 of the Data Security Law states that, while the law is about ‘promoting development and utilisation of data’, it’s also about ‘safeguarding the sovereignty, security and development interests of the state’.

In December 2022, the State Council released the ‘Opinions on building basic systems for data to maximise the role of data elements’ (or the “Twenty Data Measures”). The document outlines 20 specific measures for better coordinating and regulating the use of data resources, and among them is the plan to improve and standardise data-circulation rules and build a data-trading system that ‘combines on-and-off exchange trading’. The motivation, according to the document,
is to ‘establish a trustworthy data circulation system in which data sources can be confirmed, the scope of use can be defined, the circulation process can be traced, and security risks can be prevented’.\textsuperscript{111}

A 2015 State Council-issued ‘opinions’ document recommended using big data to enhance government supervision and control, and it was followed by an ‘action framework’ that initiated the planning of unified national big-data infrastructure.\textsuperscript{112} Data-exchange centres are one type of big-data infrastructure that appear to fall under this framework, according to a 2022 National Development and Reform Commission document, data exchanges are to facilitate ‘traceability and supervision’ when transacting data.\textsuperscript{113} Despite the relative opening up of data exchanges within China, there are strong regulations for controlling the flow of data out of China. China’s Cybersecurity Law requires personal data collected and generated within China be stored domestically.\textsuperscript{114}

Forty-eight data exchanges have been established across the country since about 2015, but they’re in the nascent stages of iterative and incremental development.\textsuperscript{115} Many different types of data can be exchanged in the centres. The Beijing International Data Exchange (北京国际大数据交易所), for example, lists 21 types of data on its platform (see Table 1).\textsuperscript{116}

\begin{table}[h]
\centering
\begin{tabular}{|l|l|}
\hline
\textbf{Public data (公共数据)} & \textbf{Judicial (司法)} \\
Business (工商) & Credit (信用) \\
Administrative (行政) & \\
\hline
\textbf{Industry data (行业数据)} & \\
Finance (金融) & Telecommunications (金融) \\
Manufacturing (制造) & Energy (能源) \\
Medicine (医药) & Transportation (交通) \\
Trade (交易) & Real estate (房地产) \\
\hline
\textbf{Research data (科研数据)} & \\
Environment (环境) & Meteorology (气象) \\
New energy (新能源) & Aerospace (航空航天) \\
Biomedical science (生物医学) & \\
\hline
\textbf{Social data (社会数据)} & \\
Internet platform (互联网平台) & News media (新闻媒体) \\
Digital art (数字艺术) & Music video (影像音乐) \\
\hline
\end{tabular}
\caption{Examples of data available on the Beijing International Data Exchange}
\end{table}

\textsuperscript{Source: Beijing International Data Exchange, archived 20 June 2023, online.}

Case study: China Culture Data Exchange and cultural intellectual property

The Propaganda Department is linked to the establishment of the China Culture Data Exchange (CCDE; 全国文化大数据交易中心), which is meant to act as an intermediary when sharing and accessing cultural data resources. The CCDE was established in 2022.\textsuperscript{117} It can be understood within the context of the 14th Five-Year Plan for Cultural Development. The plan aims to enhance ‘social etiquette and civility, a more prosperous cultural cause and industry, a further increase in the appeal of Chinese culture, and further improvement in its cultural system’.\textsuperscript{118} It’s to ensure that there’s a strong socialist culture in building and modernising China (see ‘Cultural security’ at page 11).\textsuperscript{119}

The CCDE is designed to facilitate the management and sharing of ‘cultural data’, which spans intellectual property in China’s cultural industry (Figure 4). The centre’s establishment is in line with the development of the National Cultural Big Data System and the related National Cultural Digitisation Strategy (on the datafication of cultural assets).\textsuperscript{120} It appears to have the intention to support the cataloguing of Chinese cultural data, improve the ability to transact cultural data (including data related to PRC and CCP history, Chinese culture and so on) and would impose copyright on those data sources.\textsuperscript{121}
The China Culture Data Exchange was established under the approval of the Central Leading Small Group for Cultural System Reform and Development. Shenzhen Cultural Property Exchange Co. Ltd (‘Shenzhen Cultural Exchange’, also called Shenzhen Cultural Assets and Equity Exchange Co. Ltd) is designated as the entity responsible for overseeing its construction. The Shenzhen Cultural Exchange is hosted and operated by the Shenzhen Broadcasting, Film, and Television Group (along with it being a funder). The Shenzhen Cultural Exchange also maintains relationships with data-exchange centres structurally associated with China’s media industry.

Zhejiang Daily Media Holding Group Ltd (Zhejiang Daily Press Group), described in the following subsection, through Zhejiang Daily Digital Culture Group Co. Ltd, is helping to build the ‘Red Gene Library’ (红色基因库), which is a part of the National Cultural Big Data System. The Red Gene Library is a project initiated by the Propaganda Department to collect and preserve cultural data related to the CCP and its history and was established in 2020.

In the context of cultural security, the exertion of control over how ‘cultural data’ is transacted also exerts control over what data is defined as ‘Chinese cultural data’, in line with the way ‘cultural security’ places restrictions on the exercise of Chinese culture. When ‘Chinese culture’ is defined by the party-state, the party, at least digitally, can engage in the erasure of culture that it doesn’t approve of or of culture that contradicts the party’s claims to power, such as through the digital erasure of cultural elements linked to marginalised groups.

Our research includes projects and enterprises that appeared on the 2022–2023, and often also the previous 2021–2022, National Key Cultural Export Enterprise and Project lists (the most current versions of a regular list). They include companies chosen by the Central Propaganda Department, Ministry of Commerce, Ministry of Finance and Ministry of Culture and Tourism. Enterprises on the lists are explicitly given preferential treatment, such as tax incentives and business support; furthermore, non-SOEs are given the same benefits as state-owned cultural enterprises (see box).

The Dong Dong Tibetan music app and cultural copyright

The Dong Dong Tibetan Music App (咚咚藏音APP) is a good example of the CCP’s ability to shape cultural—and political—understanding by controlling information flows. The mobile application has had about 108,000 downloads in the Tencent app store, and it’s also available for download on Apple and Google, although figures for those downloads aren’t available. The app and the company are eligible for...
additional state support due to their inclusion in the 2022–2023 national cultural export lists. Meanwhile, other Tibetan cultural activities, in exile, aren’t on the list. 129

The idea implied through cultural copyright is that only certain parties (that is, those nominated by the party-state) have the legal right to distribute cultural products. The use of legal action, or what the CCP describes as ‘legal warfare’, helps Beijing consolidate political power. China analyst Peter Mattis described legal warfare as ‘building the legal justification for Beijing’s actions and using domestic laws to signal Chinese intentions’. 130 By shaping the legal context through copyright law, the CCP seeks to influence the content and authoritativeness of cultural products on its own political terms. The prospect of the enforcement of cultural copyright is consistent with the idea that the party-state seeks to weaponise legal tools to enforce ‘cultural security’. Any legal consequences, real or manufactured, can, over time, enable the party-state to have more power to dictate how ‘cultural products’ are accessed not just domestically, but also outside China.

Figure 5: Dong Dong Tibetan Music app

Top: Screenshot of the company’s ‘About us’ page taken in December 2023, online.
Bottom: Screenshot of the app in the Tencent app store taken in December 2023, online.
Case study: Data-element standardisation and the Zhejiang Big Data Exchange Centre

The exertion of intellectual property rights is only one outcome of data exchanges. Another key issue is how data exchanges enable standardisation so that data is more readily transacted through data centres. US President Joe Biden has recently signed the ‘Executive Order on Preventing Access to American Bulk Sensitive Personal Data and US Government-related Data by Countries of Concern’, based on concerns that such data centres could potentially engage in espionage, influence, kinetic and cyber operations. Data regulation is now a priority on the technology-regulation agenda: the EU and the US are both developing legislation to regulate data exchanges and establish consistent data standards—as is the CCP.

The PRC, in fact, already invests heavily in the standardisation of technologies. In the 2021 Data Security Law of the PRC, Article 16 describes the state’s support for R&D of data- and data-security-related technologies, Article 17 describes the state’s role in the development of standards for those technologies, and Article 11 describes its intent to participate in international standards setting.

Technology standards setting takes place through the Standards Administration of China (SAC) at the central government level. The SAC issues standards, some of which are requirements and others of which are encouraged, such as the technical requirements for facial-recognition technologies used in security systems. For example, in biometric surveillance, the Ministry of Public Security has set facial-recognition guidelines that include capabilities for Uyghur detection.

Data-element standardisation is overseen by the National Data Bureau and its provincial branches. The intent behind Beijing’s prioritisation of the establishment of data exchanges is linked to data-element standardisation. The National Institute of Standards and Technology of the US Department of Commerce defines a data element as a ‘basic unit of information that has a unique meaning and subcategories (data items) of distinct value’. Data-element standards can enable data to be interchanged and ‘reduce data collection costs, and improve the consistency of data derived from different sources’.

The Zhejiang Big Data Exchange Centre is a subsidiary of the Zhejiang Daily Digital Culture Group. Established in 2016 with the approval of the Zhejiang Provincial Government, it’s the first approved and only licensed big-data transaction venue in the province. The centre’s role is to support the storage, clearance, analysis, exploration and exchange of data in Zhejiang Province and across China. Zhejiang Daily Digital Culture Group Co. Ltd was part of the data-exchange centre’s founding, and to the present day is its primary shareholder. It operates numerous Zhejiang provincial newspapers, including the Zhejiang Daily. Its operations are overseen by the Propaganda Department of the Zhejiang Provincial Party Committee.

The centre lists many partners on its website, which are all shown on the website accompanying this report. Most are PRC companies, many of which are well known, such as Huawei Technologies and China Telecom. Others include the US business registry, Dun and Bradstreet Corporation (D&B). This US-based company covers many countries and regions outside the US, including the PRC. It also partners with other leading global business information providers through its Data Cloud product. The precise nature of its cooperation with the Zhejiang Big Data Exchange Centre isn’t known through public sources.

The Zhejiang Big Data Exchange Centre is a member of the Data Elements Circulation Working Group in Zhejiang Province. The working group was established in 2022, is related to the implementation of Zhejiang Province’s ‘Digital Zhejiang’ project, and will focus on ‘promoting data element standards, and on establishing and improving data circulation and transaction rules’ across the province.
Case study: Beijing PERCENT Technology and data intelligence

Other than supporting efforts to restrict what data is presented as true and valid using copyright for legitimacy, data exchanges are meant to support simpler transacting of data. That can then have an impact in supporting the Chinese party-state’s interests. The company described in this case study is an example of how, through direct links to the Central Propaganda Department via one of the platforms that it’s linked to, companies are able to feed data and services back to the party-state apparatus. Those activities tend to take place downstream, rather than directly through client and vendor relationships.

Beijing PERCENT Technology (PERCENT Technology; 百分点科技) was founded in 2009. It describes itself as ‘a leading provider of generic platforms for data science and data intelligence applications’.

PERCENT Technology is also included in this research because of its role in jointly establishing Zhejiang Big Data Exchange Centre Co. Ltd in 2016. The company was a major shareholder of the data-exchange centre at that time, but around 2020 it ceased to be identified as a shareholder in public reporting. Zhejiang Daily Digital Culture Group remains the majority shareholder of the Zhejiang Big Data Exchange Centre.

PERCENT Technology collaborates with a range of organisations. For example, PERCENT Technology, Taiji Computer, the Shijingshan Government, China Electronics Technology Group Corporation and Kyland Technology jointly established the Beijing Urban Big Data Institute (UBDI; 北京城市大数据研究院). UBDI is described as a ‘state-owned enterprise’, and, in addition to being a co-founder of the institute, PERCENT Technology appears to currently hold shares in UBDI.

UBDI also further illustrates the apparently strong relationship that PERCENT Technology has to public security and potentially also the People’s Liberation Army (Table/2).

Table 2: Joint partners of the Beijing Urban Big Data Institute

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing PERCENT Technology Group Co. Ltd  (PERCENT Technology)</td>
<td>PERCENT Technology was founded in 2009. The company, according to its website, works extensively with the Chinese Government, including the Ministry of Public Security, and for enterprises. PERCENT Technology was included in this research because of its role in jointly establishing Zhejiang Big Data Exchange Centre Co. Ltd in 2016. PERCENT Technology was a shareholder at that time, but around 2020 it ceased to be identified as a shareholder in public reporting. The company describes itself as ‘a leading provider of generic platforms for data science and data intelligence applications’.</td>
</tr>
<tr>
<td>Taiji Computer Corporation Limited  (太极计算机股份有限公司)</td>
<td>Taiji Computer describes itself as a leading domestic company engaged in e-government, smart cities and critical industry informatisation. Pitchbook data describes the company as being engaged in the designing and engineering construction of information systems in China. It offers information technology consulting services, industry solution services, infrastructure services, operational services, and various other value-added IT services.</td>
</tr>
<tr>
<td>Kyland Technology Co. Ltd  (北京东土科技有限公司)</td>
<td>Kyland Technology describes itself as ‘a leading global innovator in Industrial Ethernet Technology’. In 2021, Kyland and two of its subsidiaries were added to the US Entity List: ‘The ERC determined to add Hangzhou Hualan Microelectronics Co., Ltd. and Kyland Technology Co., Ltd., along with Kyland subsidiaries Armyfly and Kindroid, for activities contrary to the national security and foreign policy of the United States. Specifically, the ERC determined that these entities are acquiring and are attempting to acquire US-origin items in support of military modernisation for the People’s Liberation Army.’</td>
</tr>
<tr>
<td>China Electronics Technology Group Corporation (CETC)  (中国电子科技集团公司)</td>
<td>According to ASPI’s China Defence Universities Tracker, ‘CETC is a state-owned defence conglomerate that specialises in dual-use electronics. The company was established in 2002 by bringing dozens of research institutes administered by the Ministry of Information Industry, the predecessor to the Ministry of Industry and Information Technology, under one umbrella.’</td>
</tr>
</tbody>
</table>

Source: see Cultural Copyright and Data Exchanges on our website.
According to PERCENT Technology, the Chinese branches of international companies such as Walt Disney Company (China) Ltd, Walmart (China), Starbucks (China) and Pepsi (China) are all its clients.\textsuperscript{151} The company also lists many PRC enterprises, including state-owned enterprises, as its clients. An example is TCL, a partially state-owned television set manufacturer, which in 2022 was listed as the world’s second leading household television brand, behind Samsung.\textsuperscript{152} According to the PERCENT Technology website, PERCENT Technology built a unified user view for user data and developed innovative data applications for TCL.\textsuperscript{153}

PERCENT Technology works with state-owned publications such as the *Nanfang Daily*. The company claims to have provided the *Nanfang Daily* with four solutions: data integration, a central database, an intelligent engine, and a service management platform to help with its intelligent media transformation.\textsuperscript{154} Reportedly, Nanfang Daily Newspaper Group and PERCENT Technology established a media big-data application laboratory.\textsuperscript{155} The lab was named as one of the 26 key laboratories for science and technology and standards in the press and publishing industry by the former State Administration of Press, Publication, Film and Television (国家新闻出版广电总局).\textsuperscript{156}

According to its website, the company has helped to establish numerous research centres, including the PERCENT Technology Big Data and AI Joint Research Centre through a strategic cooperation agreement with the People’s Public Security University of China (Figure 6).\textsuperscript{157} Also related to public security, PERCENT Technology reportedly established a technology research collaborative innovation laboratory with the First Research Institute of the Ministry of Public Security.\textsuperscript{158} Reportedly, PERCENT Technology is also a strategic partner with the First Research Institute of the Ministry of Public Security.\textsuperscript{159} Based on what we know of the CCP’s intent, those centres may well enable the state to leverage massive data flows to support its efforts in the information environment.

Figure 6: Beijing PERCENT Technology client list

Note: Screenshot of Percent Technology’s English-language home page, listing clients, online.
Generative AI and engagement with reality

Generative AI is a category of artificial intelligence. It refers to AI models that are used to produce text, images, sound and other media (Figure 7). ChatGPT is a well-known example of a generative AI application. It’s a text-generation application, in which users provide ChatGPT with a prompt or question, and it analyses data and produces a detailed response. Other use cases of generative AI include fields such as medicine to support diagnostics and manufacturing to support supply-chain monitoring.

Generative AI has been described as being able to ‘alter our perception of reality—presenting fiction as fact, and potentially giving biased answers and misinformation a veneer of objective truth’. But it could even go a step further and affect how subjects engage with reality. While generative AI can be a force for good, if the risks are managed, the same technology can have a transformative impact on how societies interact with reality. Therefore, state actors that intend to disrupt the information environment will increasingly use the technology in ways that undermine the national security and sovereignty of other countries.

The implications of how subjects engage with reality are ultimately determined by the intent of the actor who is shaping the technology and its use. China’s strategic objectives linking generative AI to propaganda work are clear. Chinese state media have described generative AI as contributing to smart media that will ‘extend the “leg power”, promote “eyesight”, increase the “brain power” and innovate “writing power”’. In 2023, Yang Fang (杨芳), the deputy bureau chief of the Publishing Office of the Central Propaganda Department, described generative AI as creating both efficiency and quality in China’s efforts to build digital content that disseminates the Propaganda Department’s messaging on China, which puts China’s socialist values at its core.

Generative AI is understood specifically as a next-generation technology changing the landscape of political communication. Understanding its significance, China has started regulating AI that can be used to spread dis- or misinformation online, enacting the Internet Information Service Deep Synthesis Management Provisions law on 25 November 2022. In June 2023, the CAC released a whitelist of 41 deep-synthesis service algorithms (‘deep fake’
services) that PRC companies have developed, in compliance with Article 19 of the legislation. Moreover, draft guiding opinions on punishing cyber violence and crime (published in June 2023), described how cyber violence will be severely punished under a number of circumstances, including when deep-synthesis technology is used to publish ‘illegal’ or ‘bad’ information that ‘violates public order or good customs or ethics’.166

Importantly, any efforts to label such information don’t preclude the state from using those technologies and tactics itself—the provisions only regulate what companies can do and how they can present their activities when they’re engaged in business activities outside the state’s direct control. Despite the legislation, for the party-state, generative AI is a powerful tool in the information domain, which has been linked to the ‘media convergence’ strategy (described in the ‘Media convergence’ section at page 14).

Case study: The China Internet Investment Fund and AI investment

China’s propaganda system financially supports companies and researchers engaged in the development of AI, particularly of generative AI algorithms. The China Internet Investment Fund (CIIF; 中国互联网投资基金), which funds such AI development, was jointly initiated by the CAC and the Ministry of Finance (Table 3).167

<table>
<thead>
<tr>
<th>Company name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloudwalk Technology</td>
<td>Human–machine coordination⁴</td>
</tr>
<tr>
<td>Freetech Intelligent Systems Co. Ltd</td>
<td>Intelligent driving solutions and products⁶</td>
</tr>
<tr>
<td>Geek⁺</td>
<td>Robotic solutions for logistics⁵</td>
</tr>
<tr>
<td>I-KingTec</td>
<td>Intelligent industrial drone and UAV systems⁶</td>
</tr>
<tr>
<td>RealAI</td>
<td>AI infrastructure and solutions provider⁸</td>
</tr>
<tr>
<td>SenseTime</td>
<td>AI research in perception intelligence, natural language processing, decision intelligence, AI-enabled content generation, AI chips, sensors and computing infrastructure¹</td>
</tr>
<tr>
<td>Shenzhen Yuejiang Technology Co. Ltd (Dobot)</td>
<td>Manufacturer of collaborative robots⁹</td>
</tr>
<tr>
<td>Unisound</td>
<td>Industrialisation of artificial general intelligence (AGI) technology⁹</td>
</tr>
<tr>
<td>Unitree</td>
<td>Development, production and sales of high-performance quadruped robots⁷</td>
</tr>
<tr>
<td>Zhuiyi Technology</td>
<td>Enterprise intelligent service AI company; products include AI Chatbot, AI Voicebot, customer interaction analysis AI tools, and ‘digital humans’³</td>
</tr>
</tbody>
</table>

CIIF has made substantial investments to support a number of AI companies, including those engaged in generative AI R&D. For example, in November 2021, it invested nearly ¥100 million into Beijing Ruilai Zhihui Science and Technology Co. Ltd (北京瑞莱智慧科技有限公司), which is known as ‘RealAI’.168 RealAI was established by Tsinghua University’s Institute for Artificial Intelligence (清华大学人工智能研究院).169 CIIF has stated that RealAI (Figure 8) is a leader in the field of safe and controllable AI and has unique technical capabilities. Also according to CIIF, RealAI will fill a gap in the market and drive the new generation of AI development, which will enhance China’s global competitiveness in AI.170
RealAI’s products include both a generative AI detection platform ('DeepReal'\textsuperscript{171}) and an AI deep-synthesis ('deep fake') product ('RealOasis'\textsuperscript{172}). RealOasis claims that it ‘provides customised facial replacement, expression and voice driver functions to help generate digital people with precise lip shapes, natural movements and rich expressions’ for application in scenarios including film and TV production, news broadcasting and live streaming.\textsuperscript{173} Each application scenario area is regulated by China’s propaganda system.

Figure 8: Cai Qi (蔡奇) visits RealAI in December 2021

Source: Cai Qi, Secretary of the Beijing Municipal Party Committee, investigated RealAI and ordered to maintain the technological leading edge' [北京市委书记蔡奇调研瑞莱智慧RealAI · 要求保持技术领先优势], Company News, RealAI, 5 December 2021, online.

Note: In 2021, Cai Qi, then Secretary of the Beijing Municipal Party Committee and a Politburo member, visited RealAI. Cai is the current first secretary of the Secretariat, current head of the Central Leading Group for Propaganda, Ideological and Cultural Work, and Director of the General Office of the Central Committee ('Xi Jinping’s chief of staff').

RealAI also has a number of subsidiary companies engaged in similar work. Its wholly owned subsidiary, Beijing Shengshu Technology Co. Ltd (北京生数科技有限公司), like its parent, is a company formed through a Tsinghua University research team.\textsuperscript{174} The team says that it ‘pioneered diffusion probability models, offering advanced R&D in deep generative models, high-speed sampling, and large model training’. The company description added that the team involved at Tsinghua developed Analytic DPM\textsuperscript{175} and DPM Solver\textsuperscript{176} and further claimed that those are both used in 'projects like DALL·E and Stable Diffusion'.\textsuperscript{177}

The application of generative AI in messaging

Our 2019 report \textit{Engineering global consent} identified Global Tone Communications Technology Co. Ltd (GTCOM), a machine-translation company that sits under the umbrella of China Publishing Group and is controlled by the Central Propaganda Department. GTCOM has stated explicitly that it uses the data it collects from products and services, and from social media, to ‘build up its recognition [capability] for objects, settings and human faces, in conjunction with texts and voices, to provide real-time monitoring of security risks’, in a plan to ‘provide technical support and assistance for [China’s] state security [agencies]’.\textsuperscript{178}

After our report was released, the US Department of Defense added GTCOM to the 1260H list of ‘Entities Identified as Chinese Military Companies Operating in the United States’.\textsuperscript{179} The list, to our knowledge, doesn’t include GTCOM’s subsidiaries. In 2021, GTCOM’s subsidiary company GTCOM Digital Media & Entertainment Co. Ltd, was renamed in English as China AI Media & Entertainment Technology Co. Ltd (AIME). AIME was also reorganised as an offshoot company and
placed under China Translation Corporation in China Publishing Group (mirroring GTCOM; see Figure 9). Practically, it appears that AIME continues to have significant structural overlap with GTCOM, including across key personnel. The company is still located under the China Translation Corporation, which is ultimately controlled by the Central Propaganda Department.

Figure 9: AIME and GTCOM

Note: Still located under China Publishing Group and China Translation Corp, AIME became a direct subsidiary of China Translation Corporation (CTC), rather than of CTC’s subsidiary, GTCOM.

AIME deploys what it calls the ‘Intelligent Audio-Visual Content Generation System’ to transform extensive video materials into tailored audiovisual content, catering to dissemination needs. Its ‘Intelligent Human–Computer Interaction System’ produces automatic user interactions, with AI-generated ability to produce likes, comments, shares, follows and communication, on social-media posts. The company claims that those AI-generated interactions result in ‘widespread engagement’ with its content. The product is used for both government and commercial purposes (Figure 10). According to the company’s website, for the government it works to capitalise on ‘the substantial traffic and communication influence of mainstream foreign social media platforms, we subtly disseminate ideological content and express concepts’. Such activity is against the terms and conditions of most major social-media platforms.
Le /f_t : ‘Government institutions: Our solution aids governments in globally promoting their discourse systems, enhancing the nation’s multifaceted image. Capitalising on the substantial traffic and communication influence of mainstream foreign social media platforms, we subtly disseminate ideological content and express concepts.’ The image in the photo on the left is of the House of Representatives in Australia’s Parliament House.

Right: ‘Multinational corporations: Our solution assists corporations in effectively entering overseas markets. By crafting short video content popular among foreign audiences, we facilitate one-click distribution for precise targeting of users. This fosters meaningful interactive communication, contributing to effective dissemination and user engagement, thereby supporting companies’ communication goals and audience outreach.’

Another product, AIME’s ‘Global Media Matrix’, claims to have more than 2,000 overseas accounts and spans five continents, reaching 15 countries and regions and involving 12 languages. It describes the product as covering a wide spectrum of Chinese culture, including heritage skills, and lifestyle, and covers various categories such as music, animation, fashion and sports. Its work is also said to cover three categories: high-quality original accounts, popular theme accounts, and AI-generated accounts.

The 15 countries, according to the company’s website, are China, the US, Mexico, Brazil, the UK, France, Germany, Russia, Japan, Korea, Thailand, Vietnam, Singapore, Indonesia and Australia. It appears that its international activity relates to Chinese enterprises leveraging TikTok to expand their reach in global markets. Its services include product analysis, creating landing pages, setting up TikTok accounts and shops, and assisting with live streaming. AIME’s role is to support businesses in utilising TikTok for effective live streaming e-commerce, covering various aspects from account setup to live-streaming operations. AIME claims that it has partnered with TikTok’s global ‘TikTok Shop’ initiative. That collaboration aims to facilitate international communication and cross-border e-commerce opportunities for Chinese businesses. AIME is an official TikTok service provider and offers various services, including account development, content creation, live streaming and cross-border e-commerce solutions. The company claims to specialise in offering professional TikTok account management and content broadcasting services for accounts, shops, independent websites and live streaming.

AIME has also signed a strategic cooperation agreement with propaganda-system-linked company Beijing Trends Xunda Trade Co. Ltd (‘Beijing Trends'; 北京时尚迅达商贸有限公司). Beijing Trends is an affiliate of China Culture Media Group, which holds a 31% share of the company; China Culture Media Group is under the oversight of the Ministry of Culture and Tourism. The Ministry of Culture and Tourism, meanwhile, is overseen by the Central Propaganda Department. Beijing Trends is 60% owned by Beijing Trends Xunda Books Distribution Ltd, which is 61% owned by Trends Publishing Co. Ltd, the company that oversees the PRC versions of publications such as *Esquire*, *Cosmopolitan* and *National Geographic Traveler*. 
Gaming and questioning reality

This section examines Central Propaganda Department interests in the mobile gaming industry, R&D immersive technologies such as AR and VR, and the metaverse. Combined efforts of the propaganda system and in prioritising technological research point to a future in which the PRC weaponises such technologies to interfere with the way propaganda subjects can question their own reality.

Technologies discussed in the previous section, such as generative AI, may become so sophisticated that it will be difficult for people to distinguish between ‘real’ and ‘fake’ in the real world compared to a technologically augmented view of the world. VR and AR expert Louis Rosenberg, for example, has warned about behavioural and emotion tracking in the metaverse, arguing that, as users immerse themselves in the metaverse, ‘sensors will track almost everything you do and know exactly how you feel while doing it.’ Researcher Brittan Heller coined the term ‘biometric psychotherapy’ to describe the collection of ‘a novel type of bodily-centered information that can reveal intimate details about users’ likes, dislikes, preferences, and interests’. Immersive systems, she argued, unlike the usual online tracking of user behaviours, ‘must understand how users interact with the world at a foundational level’.

Immersive technology is also at the centre of evolving visions for the world’s digital future, including the contested concept of the ‘metaverse’. The metaverse doesn’t have a single definition, but generally refers to the idea that the web will evolve into a 3D interactive and immersive environment, which is based on the application of immersive technologies. As the relevant technologies are iteratively developed, they’ll also change the way humans interact with the digital world, and companies and states such as China are competing for an edge in this space. Immersive-technology tools can be used to deploy propaganda information that shapes perceptions. When the environment exists for the PRC to shift how targets of propaganda perceive reality, and to interfere with how they engage with reality, that can affect how they question reality.

China’s gaming sector and cultural security

China’s 14th Five-Year Plan for National Informatisation calls for the implementation of a digitisation strategy for cultural industries, which includes investment in the development of ‘immersive experience cultural industry products’ based on ‘5G, ultra-high definition, augmented reality, virtual reality, artificial intelligence and other technologies’.

The National Key Cultural Export Enterprise and Project lists (both the 2022–2023 and 2021–2022 versions), which provide named companies with state support (see ‘The perception of reality’ at page 19), included dozens of mobile gaming companies and mobile games, respectively. It’s logical, on the basis of past examples in China, that the state would offer subsidies to those firms so that they can continue to enjoy global success and help advance the mission to boost China’s ‘cultural soft power’.

At the same time, that support has security implications, particularly given the framing of cultural security in the PRC and the objectives of propaganda work that this paper describes. Mobile gaming companies generate masses of data about players’ decision-making, as well as other data about consumers. Mobile games on their own can also be used to present culture in a certain way (to shape perceptions of reality), but the more concerning future is how each of those can be combined in future immersive environments to shape how individuals can actually question the reality they experience.

Within China, the gaming sector is heavily regulated. The government has attempted to reduce the number of hours its citizens, particularly minors, can spend playing video games. The party-state also regulates gaming content. A 2021 memo, reportedly leaked to the South China Morning Post from a government-linked gaming industry training program, said that games in China are a form of art that must display the ‘correct values’ and accurately portray ‘Chinese history and culture’.
Of course, given that in China those are politically laden themes, the definitions of ‘correct’ and ‘accurate’ are disputable. Moreover, the state regulates content, and topics such as ‘Taiwan’ or political topics that would otherwise be censored in China are also banned in game content within China. Some PRC companies produce popular mobile games that are downloaded globally, and those local standards censoring political content and enforcing ‘correct’ or ‘accurate’ content according to the PRC’s definition of truth are also exported.

Case study: miHoYo Technology

The gaming company miHoYo Technology (Shanghai) Co. Ltd (miHoYo; 上海米哈游网络科技股份有限公司) was established in 2014 and was listed as a 2021–2022 National Key Cultural Export Enterprise. On the 2023–2024 list, miHoYo was removed, but not effectively, because its wholly owned subsidiary Shanghai miHoYo Tianming Technology Co. Ltd (上海米哈游天命科技有限公司) was included instead. miHoYo engages in technology R&D in the fields of animation rendering, AI and cloud gaming. Headquartered in Shanghai, miHoYo has 5,000 employees spread across global offices, and a number of studios, subsidiaries and affiliates in Shanghai, Jinan, Taipei, Hong Kong, Singapore, Los Angeles, Montreal, Tokyo, Seoul and other places.

miHoYo has been designated one of China’s ‘Top 30 Cultural Enterprises’ along with state-owned giants such as China Publishing Group and Zhejiang Daily Media Holding Group Ltd (formerly Zhejiang Daily Press Group). According to the Guangming Daily, miHoYo generated revenue of US$3.83 billion in 2022, with a profit of US$2.26 billion. A major source of miHoYo’s revenue is a game that it operates, Genshin Impact, which is popular globally and free to download on mobile devices (Figure 11). The game is available to download on Google Play, the Apple Store, Windows market and SONY PS online game stores. It won Best Mobile Game at the 2021 Gaming Awards and is estimated to have been downloaded 192 million times since 2020.

Figure 11: miHoYo’s Genshin Impact

Source: Epic Games, online.
In 2020, Genshin Impact players found the app censoring words such as ‘Taiwan’, ‘Hong Kong’, ‘Falun Gong’ and ‘Putin’. 204 Like all companies in the gaming industry, miHoYo is expected to comply with central government directives on content control, such as the Central Propaganda Department’s September 2021 Notice on Carrying Out the Comprehensive Management of the Cultural Recreation (Entertainment) Domain (关于开展文娱领域综合治理工作的通知). 205 The regulation reinforces the requirements of gaming companies to be more responsible for the regulation of content on their platforms, which includes political and ideological management. In response to the notice and another directive on reducing gaming addiction, 213 Chinese gaming companies signed a joint statement committing to, among other things, defend against ‘harmful content’, including politically harmful content and historically nihilistic content. 206

The value of big data, from gaming to immersive technology

For the party-state, the value of managing its relationships with gaming companies goes beyond controlling how Chinese culture is presented to the outside world. An editorial for the People’s Daily has suggested that the propaganda system’s work can now be more tailored and targeted based on the data generated from the online behaviour of individuals to identify and stem problems before they arise. 207

In general, the data generated from individuals’ online behaviour allows the party-state to better understand the ‘patterns behind those decisions’ (the decisions of online users), which can be used to ‘find out the needs of the public’ and ultimately enable better governance. 208 In that sense, better governance has a meaning beyond providing adequate public services: it also means removing problems before they arise.

There’s also research value in cognitive sciences from the data derived from gaming products. Gaming companies have access to data that helps generate greater understanding of the ways people think and make decisions. For the companies, the data can be helpful for marketing and design purposes and for understanding users’ decisions, and users’ experience can support the development of more sophisticated, and perhaps more profitable, games. 209 Similar data has applications in other realms, including the political and strategic. From a military perspective, for example, it’s well known that games aren’t just a source of entertainment but can also be used as training tools. 210 The data generated from those applications can help the military better understand strengths and weaknesses in soldiers’ decision-making, patterns of decision-making and so on.

Not all research using data generated from gaming necessarily has political or strategic implications. That would ultimately depend on the intent of not just the researchers or research institutes involved, but also on the entity that’s seeking to directly apply that research in a real-world context. Other research fields that gaming companies listed on the Cultural Enterprise List also use products and data to support include medical research related to the human brain. For example, in addition to games production, miHoYo is also engaged in R&D in a number of technical areas. In March 2021, the company reached a strategic cooperation agreement with the Brain Disease Center of Ruijin Hospital to engage in R&D on the clinical use of brain–computer interface technology. 211 Another company that’s appeared on the National Key Enterprise for Cultural Export List is Shengji Information Technology (Shanghai) Co. Ltd (盛绩信息技术(上海)有限公司). 212 The company is a wholly owned subsidiary of Shengqu Games (盛趣游戏). 213 Shengqu Games, in cooperation with Zhejiang University, engages in scientific research focused on brain science, which includes the subjects of digital medicine, digital organs, human–machine fusion intelligence in games, dream research and other areas. 214

The Propaganda Department and the metaverse

The metaverse has become an increasingly prominent topic in central government work reports and local government white papers. 215 China’s metaverse is being linked to the strategy known as ‘Building Digital China’ or ‘Digital China’. 216 In line with this party-led approach, since early 2022 numerous provinces and municipalities, and even lower level administrative divisions, have released plans related to metaverse development. 217 In July, for example, Shanghai released its Action Plan for Fostering the Metaverse (2022–2025). 218 This comprehensive plan sets ambitious targets, projecting
the metaverse industry to reach a turnover of ¥350 billion (approximately A$75.32 billion) by 2025. The unveiling of the plan not only showcases local government’s commitment to the metaverse but also catalyses a nationwide movement. In response, multiple provinces and agencies have joined the momentum, actively budgeting, allocating resources and implementing their own strategies. Local governments in seven provinces and 17 cities have already issued follow-up policies and initiatives, further solidifying the metaverse as a focal point of China’s digital future.219

During the Culture and Tourism of China Metaverse Online Briefing in Beijing, the Secretary of the Party Committee and the President of the China Cultural Media Group220 emphasised the significance of ‘winning the ideological main battlefield in the metaverse, safeguarding national cultural security, … and effectively using various metaverse applications to tell China’s story and spread China’s voice.’221 It was also made clear in the 2023 White Paper on Cultural Creation and Cultural Tourism in China that ‘expediting the development of Digital China and the metaverse holds great significance and profound implications for the rejuvenation of the Chinese nation.’222

In line with China’s objective to develop the digital economy, Gong Xinhan (龚心瀚), a former Deputy Minister of the Propaganda Department of the CCP Central Committee, described the metaverse as an opportunity to ‘achieve digital transformation’.223 Related to that effort, the Propaganda Department’s Publishing Bureau launched the Positive Energy Leadership Program for Online Games.224 The program aims to promote the expansion and use of new formats such as the metaverse, digital twinning (which refers to the replication of physical assets in a virtual environment)225 and cloud gaming.

More than leveraging the metaverse as part of China’s economic development strategy, the Propaganda Department’s objectives are focused on how to continue to harness new and emerging technologies in support of its social-management objectives. The department seeks to exert its influence as a venue for shaping public sentiment in the digital landscape. By integrating propaganda elements into the metaverse, the party-state aims to exert greater control over two specific fields: the culture industry226 and video games,227 which are explored in the sections below.

China’s metaverse strategy

The China Cultural Industry Association (CCIA)228 and China Cultural Media Group Co. Ltd (CCMG)229 are involved in the early implementation of China’s metaverse strategy. Operated under the guidance of the PRC Ministry of Culture and Tourism, the CCIA is a Chinese media organisation that works to ‘boost the soft power of Chinese culture and advance the campaign of [the] going global of Chinese culture’.230

In 2022, the CCIA established the Committee on the Cultural Metaverse, which is described as China’s first metaverse-related academic and theoretical research, think-tank research, industry-university-research collaborative innovation and domestic and international exchange and cooperation platform in the cultural domain.231 In 2023, the CCIA released the Chinese Cultural Metaverse White Paper, which engaged 129 scholars from more than 20 PRC universities and has been described as a ‘comprehensive, systematic and in-depth analysis and interpretation of the fundamental theory and industrial practice of cultural metaverse in China’.232

The CCMG, meanwhile, is an SOE that operates under the supervision of the Ministry of Culture and Tourism. It serves as a platform for implementing the party-state’s cultural policies and promoting Chinese culture both domestically and internationally.233 The CCMG developed the Culture and Tourism China Metaverse Platform, which was launched on 18 October 2023. The platform is said to optimise its C2C transactions and digital asset wallet functions through a digital cultural commodity trading module. It’s described as being based on blockchain technology, ‘allowing transaction access, smart account sharing, copyright profit sharing, data monitoring, and cross-platform exchange of digital assets’.234
The Central Propaganda Department is also involved in supporting companies in the gaming industry and digital media industry that have ambitions in the metaverse. Migu Culture and Technology Co. Ltd (Migu; 咪咕文化科技有限公司) is a subsidiary of China Mobile Communications Group and acts as the digital content provider arm of China Mobile. Migu is listed as a National Key Cultural Export Enterprise on both the 2021–2022 and 2023–2024 lists. The company has established subsidiaries in gaming, animation, digital media, video streaming and digital music. miHoYo has ambitious objectives to establish a virtual metaverse world catering to a population of 1 billion people by 2030. Its expansion into countries such as Singapore, the US, Canada, Japan and South Korea might serve as a strategic move to amplify the CCP’s influence through video games and the metaverse, if only through the requirement to comply with the September 2021 Notice on Carrying Out the Comprehensive Management of the Cultural Recreation (Entertainment) Domain and the directives of the General Administration of Press and Publication.

Migu claims that it has taken steps to amplify the party’s voice through its ‘Metaverse Observes the Two Sessions’ initiative. The company created a virtual avatar of Huang Maoxing (黄茂兴), a representative of the Fujian National People’s Congress. Furthermore, operating under the supervision of the Central Propaganda Department and with support from the Ministry of Culture and Tourism and the Xinjiang Autonomous Region Government, Migu broadcast on its various mobile platforms a content series called ‘Lift your veil—Xinjiang is a good place’, which includes song, dance, poetry, art and other cultural items aligned with official narratives about Xinjiang and Uyghur culture that are propagated by the party-state.

At the 2021 Annual Conference of the Chinese Gaming Industry, miHoYo President Liu Wei (刘伟) said that the company strictly adheres to the requirements set by the Central Propaganda Department and the General Administration of Press and Publication in its day-to-day operations. Liu described party building as the ‘red engine’ driving the company’s commitment to upholding what’s deemed to be the correct path of development, and aligns his company with the Chinese Government to effectively export the values of the CCP. This is attached to the development of the company’s video games, which become ‘a means to propagate China’s cultural essence’. In an interview with Youth Daily, Liu said that miHoYo strives to develop video games that serve as a reflection of China’s cultural heritage and national spirit.
Conclusion

For years, leaders in liberal democracies assumed that digital communications technologies would pave the way for democracy while simultaneously weakening authoritarian regimes. Only when those same digital platforms started to be used to subvert democratic processes, such as during incidents of foreign interference in elections and referendums, did leaders in liberal democracies begin to understand that democratic society requires protection against the malign use of those technologies.

Governments around the world are now hyper-focused on how to manage risks that emanate from TikTok, and many have banned that app from official devices. By dealing with only one platform at a time, policymakers fail to grasp the broader significance of the global technological changes that China’s increasing investment in key information technologies is having. The reaction ultimately doesn’t respond to the underlying problem that China’s propaganda system and its investment in core foundational technologies creates, which affects not just China’s information environment but also the global information environment.

China’s propaganda system is a vast structure in and of itself, and under its direct control or with its direct support are a web of additional entities whose portfolios contribute to the party’s ability to meet its strategic aims in the information environment. By understanding the ‘invisible architecture’ of China’s propaganda system and technologies, countries can be better prepared to understand how to mitigate risks that PRC companies do or can, down the road, create.

Authoritarian states have long assumed digital communications technology to be a double-edged sword, and China in particular has used that threat perception to guide its national approach to technology’s R&D, use and management. The Chinese party-state has recognised the need not just to prevent unwanted interference in China’s information environment, from both internal and external sources, but also to be able to shape, manage and control the information environment both inside and outside China.

The recommendations at the start of this paper point to the requirement that governments must think more holistically about the issue of information campaigns and the technologies that enable them. If governments seek to combat information campaigns only after those campaigns can be seen, or their effects felt, then they’re putting themselves in the position of only having the toolkit to respond once damage control is needed. The starting points for meeting this challenge must include ensuring that liberal democracies are at the forefront of the deployment of information standards and the core foundational technologies for Web 2.0 and beyond, without those efforts undermining democratic discourse and technological advancement.
Appendix 1: Detailed methodology

Companies were included in our research scope if they were locally or centrally SOEs\textsuperscript{245} with direct ties to China’s propaganda system, and especially directly to the Central Propaganda Department. Those ties could be through corporate structures, such as relationships to the Propaganda Department–managed China Publishing Group and its subsidiaries, or political entities whose activities are explicitly supervised and constrained by the Propaganda Department.

More enterprises were located through research on cultural enterprises and cultural exports. Companies that appeared on the 2022–2023, and often also the previous 2021–2022 National Key Cultural Export Enterprise and Project lists (the most current versions of a regular list) were all included in the scope of research. The National Key Cultural Export List includes companies that are chosen by the Propaganda Department, Commerce Ministry, Finance Ministry, and Culture and Tourism Ministry. Private enterprises on the list are explicitly given preferential treatment, such as tax incentives, that give them the same benefits as state-owned cultural enterprises.\textsuperscript{246}

The \textit{Building Blocks of China’s Information Campaigns} website that accompanies this report (ChinaInfoBlocks.aspi.org.au), provides a subset of the data that we collected. Network graphs illustrate the relationships between a subset of the entities we located and the Central Propaganda Department. Our effort to map out those entities was used as background research informing our analysis. From that list, we determined thematic areas in which entities of specific types or entities that engage in specific activities were frequently appearing in the dataset. For each case study, we chose activities in the relevant fields that could be clearly mapped to specific strategic objectives driven by the Propaganda Department or related to its work. We were particularly interested in PRC state-owned and nominally private entities linked to the PRC’s propaganda system, the activities of which resulted in the exploitation or use of new and emerging technologies. The entities selected for the website are linked to the five case studies in this report. This is also the source for the static images in this report.
<table>
<thead>
<tr>
<th>Partner company or ministry</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>China Mobile</td>
<td>State-owned telecommunications company</td>
</tr>
<tr>
<td>China National Petroleum Corporation (CNPC)</td>
<td>State-owned energy company</td>
</tr>
<tr>
<td>Air China</td>
<td>State-owned aviation company</td>
</tr>
<tr>
<td>State Nuclear Power Technology Corporation (SNPTC)</td>
<td>State-owned enterprise in nuclear power technology development and operator of nuclear power facilities</td>
</tr>
<tr>
<td>Bank of Communications</td>
<td>State-owned bank</td>
</tr>
<tr>
<td>CRRC Corporation Limited</td>
<td>State-owned rail industry company</td>
</tr>
<tr>
<td>People’s Insurance Co. (Group) of China Ltd (PICC)</td>
<td>State-owned insurance company</td>
</tr>
<tr>
<td>Agricultural Development Bank of China</td>
<td>State-owned bank</td>
</tr>
<tr>
<td>China Energy Investment Corporation (CHN Energy, China Energy)</td>
<td>State-owned mining and energy company</td>
</tr>
<tr>
<td>Aero Engine Corporation of China (AECC)</td>
<td>State-owned aerospace company</td>
</tr>
<tr>
<td>China Post Group Corporation</td>
<td>State-owned postal service</td>
</tr>
<tr>
<td>China National Nuclear Corporation (CNNC)</td>
<td>State-owned enterprise in the nuclear technology industry</td>
</tr>
<tr>
<td>State Development and Investment Corporation (SDIC)</td>
<td>State-owned investment holding company</td>
</tr>
<tr>
<td>China National Pharmaceutical Group Corporation (CNPGC, or Sinopharm)</td>
<td>State-owned pharmaceuticals company</td>
</tr>
<tr>
<td>China Minsheng Banking Corp. Ltd</td>
<td>Joint-stock commercial bank, primarily founded by primarily non-state-owned enterprises</td>
</tr>
<tr>
<td>China State Shipbuilding Corporation (CSSC)</td>
<td>State-owned shipbuilder</td>
</tr>
<tr>
<td>China Oceanwide Holdings Group</td>
<td>Investment company; largest shareholder is China Minsheng Bank</td>
</tr>
<tr>
<td>China National Offshore Oil Corporation (CNOOC)</td>
<td>State-owned oil and gas company</td>
</tr>
<tr>
<td>Beijing Subway Group Company Ltd (Beijing Subway)</td>
<td>Mass-transit rail company, owned by the Beijing Municipal Government</td>
</tr>
<tr>
<td>China Electronics Corporation (CEC)</td>
<td>State-owned telecommunications equipment company</td>
</tr>
<tr>
<td>WH Group (Shanghai Group, Shineway Group)</td>
<td>Privately owned meat and food processing company</td>
</tr>
<tr>
<td>BTG Homeinns Hotels (Group) Co. Ltd</td>
<td>Private-equity-funded hotel chain</td>
</tr>
<tr>
<td>Midea Group</td>
<td>Electrical appliance manufacturer</td>
</tr>
<tr>
<td>Ele.me</td>
<td>Online-to-offline platform focused on food delivery, founded by Alibaba</td>
</tr>
<tr>
<td>Asisino Corporation</td>
<td>Financial technology, intelligent tax solutions, information security, owned/ controlled by China Aerospace Science and Industry Corporation (CASIC)</td>
</tr>
<tr>
<td>Weichai Holding Group Co. Ltd</td>
<td>State-owned developer and manufacturer of diesel engines</td>
</tr>
<tr>
<td>Didi Chuxing Technology Co.</td>
<td>Vehicle-for-hire company, state-owned (private investment); operates ride-sharing app DiDi Rider</td>
</tr>
<tr>
<td>XCMG</td>
<td>Heavy machine manufacturer</td>
</tr>
<tr>
<td>Pinduoduo (PDD) Holdings</td>
<td>E-commerce giant</td>
</tr>
<tr>
<td>Capital Airport Holdings Limited (CAH)</td>
<td>Wholly owned by the Civil Aviation Administration of China; owns operators of PRC airports</td>
</tr>
<tr>
<td>Ministry of National Defence</td>
<td>PRC defence ministry, structurally located under the State Council</td>
</tr>
<tr>
<td>Ministry of Education</td>
<td>PRC education ministry, structurally located under the State Council</td>
</tr>
<tr>
<td>Ministry of Industry and Information Technology</td>
<td>PRC ministry overseeing technology-related research, industry, development of regulations, industrial policy</td>
</tr>
<tr>
<td>Ministry of Transportation</td>
<td>PRC ministry overseeing planning and coordination of transportation system, policy, regulation, supervision and standards; structurally under the State Council</td>
</tr>
<tr>
<td>Ministry of Agriculture and Rural Affairs</td>
<td>PRC ministry overseeing agriculture and rural affairs policy and regulation; structurally located under the State Council</td>
</tr>
<tr>
<td>Ministry of Culture and Tourism</td>
<td>PRC ministry overseeing policies and regulations related to culture and tourism, under the jurisdiction of the Central Propaganda Department, located structurally under the State Council. Charged with overseeing the advancement of PRC soft power and the influence of Chinese culture</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>National Development and Reform Commission</td>
<td>Body overseeing PRC’s macroeconomic management, structurally located under the State Council</td>
</tr>
<tr>
<td>Ministry of Science and Technology</td>
<td>Overseeing science and technology coordination, strategy, policy and planning in the PRC; structurally located under the State Council</td>
</tr>
<tr>
<td>Ministry of State Security</td>
<td>PRC ministry overseeing intelligence and counterintelligence work</td>
</tr>
<tr>
<td>Ministry of Ecology and Environment</td>
<td>PRC ministry overseeing environmental protection work, regulations and policies; structurally located under the State Council</td>
</tr>
<tr>
<td>Ministry of Water Resources</td>
<td>PRC ministry overseeing water management, including policies and mid-to-long-term strategies</td>
</tr>
<tr>
<td>National Health Commission</td>
<td>PRC department overseeing national health policy, under the State Council</td>
</tr>
</tbody>
</table>
Tom Uren, Elise Thomas, Jacob Wallis, Tweeting through the Great Firewall, ASPI, Canberra, 3 September 2019, online; Jacob Wallis, Tom Uren, Elise Thomas, Albert Zhang, Samantha Hoffman, Lin Li, Alexandra Pascoe, Danielle Cave, Retweeting through the Great Firewall, ASPI, Canberra, 12 June 2020, online; Albert Zhang, Tilla Hoja, Jasmine Latimore, Gaming public opinion, ASPI, Canberra, 26 April 2023, online.

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The National Endowment for Democracy in its work on sharp power has similarly examined how the PRC and authoritarian states engage in activities that undermine media integrity; see Christopher Walker, Jessica Ludwig, A full-spectrum response to sharp power the vulnerabilities and strengths of open societies, Sharp Power and Democratic Resilience series, National Endowment for Democracy, June 2021, online; Sharp power: raising authoritarian influence, National Endowment for Democracy, December 2017, online.

3 Samantha Hoffman, Engineering global consent: the Chinese Communist Party’s data-driven power expansion, ASPI, 14 October 2019, online.

4 ‘People’s Public Opinion Cloud’ [人民舆情云], People’s Cloud, no date, online.

5 ‘People’s Public Opinion Cloud’ [人民舆情云], People’s Cloud, no date, online.

6 Sarah Perez, ‘Temu was the most downloaded iPhone app in the US in 2023’, TechCrunch, 13 December 2023, online.

Temu has also reportedly engaged in controversial business practices, such as forced and exploitative labour practices, and copyright infringement. See Nicholas Kaufman, Shein, Temu, and Chinese e-commerce: data risks, sourcing violations, and trade loopholes, US–China Economic and Security Review Commission, 14 April 2023, online.

7 Temu has also reportedly engaged in controversial business practices, such as forced and exploitative labour practices, and copyright infringement. See Nicholas Kaufman, Shein, Temu, and Chinese e-commerce: data risks, sourcing violations, and trade loopholes, US–China Economic and Security Review Commission, 14 April 2023, online.

8 Patrick Boehler, ‘Two million “internet opinion analysts” employed to monitor China’s vast online population’, South China Morning Post, 3 October 2013, online.

9 ‘CMP dictionary: media convergence’, China Media Project, 16 April 2021, online.

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13 ‘People’s Public Opinion Cloud’ [人民舆情云], People’s Cloud, no date, online.

14 ‘People’s Public Opinion Cloud’ [人民舆情云], People’s Cloud, no date, online.

15 Deng Xiaoping, ‘Emancipate the mind, seek truth from facts and unite as one in looking to the future,’ People’s Daily, 16 April 2021, online.

16 See ‘Great rejuvenation of the Chinese Nation’ [中华民族伟大复兴], Center for Strategic Translation, no date, online.

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18 Providing stronger strategic support for the great rejuvenation of the Chinese nation—celebrating the 95th anniversary of the founding of the Chinese People’s Liberation Army [为实现中华民族伟大复兴提供更为坚强的战略支撑—庆祝中国人民解放军建军九十五周年], gov.cn, 1 August 2022, online, ‘Bylined article in People’s Daily: Play the first move well and take the initiative—a summary of General Secretary Xi Jinping’s important expositions on preventing and defusing major risks’ [人民日报署名文章：下好先手棋 打好主动仗——习近平总书记关于防范化解重大风险重要论述综述], Xinhua, 15 April 2021, online; ‘Introduction: Important guarantees for realising the great rejuvenation of the Chinese nation’ [导读：关于实现中华民族伟大复兴的重要保障], People’s Daily Online, 28 June 2021, online. For research and analysis on the global implications, see, for example: Daniel Tobin, ‘Full text of Xi Jinping’s speech on the CCP’s 100th anniversary’, Nikkei Asia, 1 July 2021, online.

19 See, for example, Zhang Shujun [张树军], ‘The powerful ideological weapon, oppose historical nihilism’ [掌握强大思想武器 反对历史虚无主义], Qiushi, 15 April 2017, online.

20 ‘Seeking truth from facts’ is a technique repeated by the CCP to oppose historical nihilism and to promote the party’s view of historical events. An article in Qiushi stated that ‘Historical materialism is the fundamental way for us Communists to understand and grasp history. The most fundamental correct attitude towards historical nihilism is to use the historical view and methodology of historical materialism, adhere to the principle of seeking truth from facts, and conduct concrete analysis of specific issues.’ Similarly, an article on the Sichuan Province’s History Party website said to always seek truth from facts to judge whether academic issues are historical nihilism, and ‘to always adhere to seeking truth from facts when resolving issues related to the truth’. The article also called on seeking truth from facts to resist and oppose historical nihilism, regardless of its form. Stated more plainly on the Dangjian website, ‘Historical research must adhere to seeking truth from facts and historical materialism — and ‘to always adhere to seeking truth from facts when resolving issues related to the truth’. The article also called on seeking truth from facts to resist and oppose historical nihilism, regardless of its form. Stated more plainly on the Dangjian website, ‘Historical research must adhere to seeking truth from facts and historical materialism — and ‘to always adhere to seeking truth from facts when resolving issues related to the truth’. However, upon careful consideration, it is not difficult to find that seeking truth from facts not only does not admit or adhere to it, but also completely denies historical materialism and Marxist historiography. It’s an idealistic view of history from the beginning, and is essentially an idealistic view of history. For more, see Gou Congli [桂从路], ‘Take a clear-cut stand against historical nihilism’ [旗帜鲜明反对历史虚无主义], Qiushi Theory, 28 September 2021, online; Wang Jin [王进], ‘To oppose historical nihilism, we must always adhere to seeking truth from facts’ [反对历史虚无主义要始终坚持实事求是], Sichuan Party History Document Website, 14 December 2021, online; Zhu Jidong [朱继东], ‘Adhere to the correct view of party history and take a clear-cut stand against historical nihilism’ [坚持正确党史观旗帜鲜明反对历史虚无主义], Dangjian Net, 24 June 2022, online.

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22 Resolution of the Central Committee of the Communist Party of China on the party’s major achievements and historical experience in its centenary of struggle (full text) [中共中央关于党的百年奋斗重大成就和历史经验的决议 (全文)], gov.cn, 16 November 2021, online.
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24 ‘Exposing historical nihilism’ [起底历史虚无主义], CPC News, 6 August 2018, online.

25 For instance, the rewriting of the Cultural Revolution, See, for example, Mary Gallagher, ‘China’s rewritten past: how the Communist Party weaponizes history’, Foreign Affairs, July/August 2023, online.

26 Zedong, ‘On practice: on the relation between knowledge and practice, between knowing and doing’.

27 For more on the party’s truth and objective reality, see: ‘Theoretical innovation is the ideological source of the party’s century-old youth’, International Union Construction Group, no date, online; Joe Pateman, ‘Lenin without dogmatism’, Studies in East European Thought, 2019, 71:99–117, online.

28 ‘Make good use of the ideological weapon of emancipating the mind and seeking truth from facts’ [用好解放思想实事求是这一思想武器], People’s Daily Online, 5 August 2021, online; General Secretary Xi Jinping talks about seeking truth from fact [习近平总书记谈实事求是], Dushu Network, 13 September 2021, online.

29 ‘How the People’s Republic of China seeks to reshape the global information environment’, Foreign Affairs, August 2022, online.

30 On national security as a requisite for national rejuvenation, see, for example, Guo Shengkun [郭声琨], ‘Promote modernisation of the national security system and capabilities [ conscientiously study, publicise, and implement the spirit of the 20th National Congress of the Party]’ [推进国家安全体系和能力现代化, (认真学习宣传贯彻党的二十大精神)], People’s Daily, 24 November 2022, online.

31 Yang Daizhi [杨大志], ‘Political security is the root of state security’ [政治安全是国家安全的根本], People’s Liberation Army Daily, 20 April 2018, online.

32 Qin Long [秦龙], ‘Introduction: Important guarantees for realising the great rejuvenation of the Chinese nation’ [导言：关于实现中华民族伟大复兴的重要保障], CPC News, 28 June 2021, online.

33 The People’s Tribune is a media outlet focused on CCP theory managed under the People’s Daily.

34 Ma Zhengong [马振清], ‘The importance of the overall national security concept to the great rejuvenation of the Chinese nation’ [总体国家安全观对中华民族伟大复兴的重要意义], People’s Tribune Net, 23 March 2021, online.


36 Mao Zedong, ‘On practice: on the relation between knowledge and practice, between knowing and doing’.

37 See, for example, the concept of ‘source governance’ (源头治理), on government problem-solving, which is related to the concepts of ‘seeking truth from fact’ and the ‘mass line’ method. ‘Promote sources governance and build a safe China’ [推进源头治理 建设平安中国], People’s Daily Online, 12 October 2020, online; ‘Decision of the Central Committee of the Communist Party of China on several major issues concerning upholding and improving the socialist system with Chinese characteristics and promoting the modernisation of the national governance system and governance capabilities’ [中共中央关于坚持和完善中国特色社会主义制度推进国家治理体系和治理能力现代化若干重大问题的决定], CPC News, 6 November 2019, online; ‘National Public Complaints and Proposals Administration: Launching a three-year campaign on source governance of complaints and proposals’ [国家投诉管理局：开展信访源头治理三年攻坚行动], National Public Complaints and Proposals Administration, 31 January 2023, online.

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39 See Article 3 of State Security Law of the People’s Republic of China (中华人民共和国国家安全法), 1 July 2015, gov.cn, online.

40 George Orwell, Nineteen eighty-four, Secker & Warburg, 8 June 1949.


42 Yanji Wang 王亚秋, Twitter, 1 October 2021, online; Kalpit A Manikkar, Poverty alleviation and political primacy: the way of the Chinese Communist Party, Observer Research Foundation, 22 September 2021, online. The hardships caused by the party’s policies and handling of the economy led to a conservatively estimated half a million deaths, and at worst upward of 8 million deaths, during the Cultural Revolution. Moreover, the party’s mismanagement of agricultural policies during the Great Famine resulted in one of the deadliest famines in history, claiming the lives of millions of Chinese citizens; estimates range from 16.5 million to 45 million. The party is responsible for first destroying China, even if it has since played a central role in rebuilding it and reducing the number of people living below the poverty line, not disregarding the work the Chinese people have done to lift themselves out of poverty. See Yongyi Song, ‘Chronology of mass killings during the Chinese Cultural Revolution (1966–1970)’, SciencesPo, 25 August 2011, online; James Kai-sing Kung, Justin Yifu Lin, ‘The causes of China’s Great Leap Below the poverty line, not disregarding the work the Chinese people have done to lift themselves out of poverty’, United Nations, University of Chicago Press, October 2003, 52(1):51–73, online; Frank Didik, ‘Mao’s Great Famine: the history of China’s most devastating catastrophe, 1958–1962’, Bloomsbury USA, 2011, online; Jack Goodman, ‘Has China lifted 100 million people out of poverty?', BBC, 28 February 2021, online; ‘Is China succeeding at eradicating poverty?', ChinaPower, no date, online.

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45 Hoffman, ‘The united front and the CCP’s “people’s war” against religion’; ‘Illustration of a “two-faced person”, Part One: One practice on the stage and another off stage, one practice in front of you and another in your back’ [【给“两面人”画个像】之一：台上一套台下一套，当面一套背后一套], 21 November 2018, CPC News, online.

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47 ‘The main melody is louder and the positive energy is stronger—a summary of ideological and cultural propaganda work since the 18th National Congress of the Communist Party of China’ [主旋律更响亮正能量更强劲——党的十八大以来宣传思想文化工作综述], Qiushi Network, 24 November 2022, online.

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49 ‘CMP Dictionary: Media convergence’, China Media Project, 16 April 2021, online.
People's Cloud has officially launched. It will follow the "Eastern data generation and Western computational processing" to layout data centres. [96]

Hoffman & Attrill, 'Mapping China's Tech Giants: Supply chains and the global data ecosystem'; [90]

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Guo Jinghui, former Secretary-General of the Propaganda Department, during the 2016 Cloud China annual conference. Guo also highlighted VNET's support to both IBM and Microsoft in establishing cloud data centres in China. [93]

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"About us: Company profile" [关于我们: 公司简介], People's Data, no date, online; [77]

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"Build a consumer-centered big data platform to support TCL's 'double+' digital transformation."

"Addition of certain entities; and modification of entry on the Entity List."

"Fully unleashing the potential of data, the smart data middle-end system protects the business innovation of Nanfang Daily Newspaper Group."

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## Acronyms and abbreviations

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<th>Abbr.</th>
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<td>AI</td>
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<td>CTC</td>
<td>China Translation Corporation</td>
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<td>D&amp;B</td>
<td>Dun and Bradstreet Corporation</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>FARA</td>
<td>Foreign Agents Registration Act (US)</td>
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<tr>
<td>GTCOM</td>
<td>Global Tone Communications Technology</td>
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<tr>
<td>IoT</td>
<td>internet of things</td>
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<tr>
<td>Migu</td>
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<td>miHoYo</td>
<td>miHoYo Technology (Shanghai) Co. Ltd</td>
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<td>MoU</td>
<td>memorandum of understanding</td>
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<td>People’s Data</td>
<td>People’s Data Management Co. Ltd</td>
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<td>PRC</td>
<td>People’s Republic of China</td>
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<td>research and development</td>
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<tr>
<td>SAC</td>
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<td>State Council Information Office</td>
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<td>State Internet Information Office</td>
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<td>SOE</td>
<td>state-owned enterprise</td>
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<td>UBDI</td>
<td>Beijing Urban Big Data Institute</td>
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<tr>
<td>VNET</td>
<td>VNET Group Inc.</td>
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<tr>
<td>VR</td>
<td>virtual reality</td>
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<tr>
<td>XR</td>
<td>extended reality</td>
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