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Technology and State Relations: China Case

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Abstract: This study explores the intricate relationship between technology and the state, with a specific focus on China's strategic technological advancements and their broader socio-political implications. By examining China's digital platforms—WeChat, TikTok, and Weibo—alongside the concepts of techno-economy, techno-nationalism, metamorphic thought, and platform sub-imperialism, the research provides a comprehensive framework for understanding how technological innovation serves as both a tool of state control and a driver of global influence. China's state-led strategies, such as the "dual circulation" policy and initiatives like "Made in China 2025," reveal a dual approach of fostering indigenous innovation while leveraging global market dynamics. These strategies are deeply intertwined with techno-nationalist ambitions that seek to achieve technological self-reliance, enhance national identity, and establish geopolitical dominance.

Moreover, the study highlights the emergence of platform sub-imperialism, wherein Chinese digital platforms act as instruments of both regional control and global economic expansion. The analysis situates China's digital infrastructure within the global platform economy, emphasizing its role in reshaping power dynamics, economic systems, and cultural narratives. By integrating concepts like metamorphic thought, the study also sheds light on the transformative potential of technological systems to dismantle existing power structures while creating new forms of resistance and identity. Through comparative analysis, the research reveals how China's approach to technology not only challenges Western-led models of globalization but also redefines the role of technology in contemporary statecraft. The findings underscore the need to critically engage with the implications of state-driven technological innovation, particularly in the context of global inequality, digital sovereignty, and geopolitical competition.

Keywords: techno-economy, techno-nationalism, platform sub-imperialism, metamorphic thought, China

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Introduction

The state plays a pivotal role in shaping the relationship between technology and society. By initiating, restricting, or leading technological innovations, it acts as a mediator that reflects and organizes the prevailing social and cultural forces within a specific time and space. This influence extends beyond mere governance of technology, embedding itself in broader societal structures and power dynamics. In the context of new communication technologies, the state's involvement is particularly significant in facilitating integration into the global capitalist system (Binark & Bayraktutan-Sütcü, 2008: 30).

In this study, the state's relationship with technology is interpreted in the context of China's recent rising technology moves. It is clear that China has made serious breakthroughs in technology recently. This breakthrough is especially evident in the conflict with the United States. This conflict is particularly evident in the fields of artificial intelligence and microchips. There is talk that in the near future, the US will impose additional restrictions on the sale of semiconductor equipment and artificial intelligence memory chips to China (Bloomberg HT, 2024).

In this study, the relationship between technology and the state is examined through the examples of China's digital platforms WeChat, TikTok, and Weibo. Afterwards, the concepts of techno-economy and technological nationalism are examined. In this study, comparative analysis of concepts is used as a method. The comparative analysis of concepts examines and contrasts various methods to clarify and understand concepts within specific fields. This approach focuses on identifying the characteristics, relationships, and usage of concepts across disciplines. It ensures conceptual clarity by systematically breaking down and comparing definitions, attributes, and theoretical frameworks from different sources or traditions. The process typically involves steps such as gathering and reviewing relevant literature, distinguishing between similar concepts, and analyzing their defining attributes. Comparative analysis can function as an independent research method or complement other methodologies, addressing ambiguities and aligning concepts with their disciplinary contexts. While terminological methods provide a systematic basis, they often require adaptation to meet the broader needs of academic research across diverse fields (Nuopponen, 2010: 2-9).

Achille Mbembe's concept of "metamorphic thought" is utilized throughout the study. Achille Mbembe's concept of "metamorphic thought," inspired by Frantz Fanon's work, refers to a mode of thinking that addresses processes of transformation within colonial and postcolonial contexts. This framework views resistance against violence and oppression as not only a destructive force but also as a creative and

reconstructive power. Metamorphic thought emphasizes critique as a dual tool: it dismantles oppressive systems while enabling the construction of new forms of social and individual identity. In this perspective, violence is understood not merely as a reaction to colonial domination but as a transformative practice through which freedom and humanity are reclaimed. Mbembe highlights how this mode of thinking transcends the trauma imposed by colonial structures, fostering a vision of equality and a reimagined sense of humanity. This concept serves as a lens to explore continuous change and the possibilities for renewal in the face of systemic dehumanization, offering pathways to both healing and the emergence of new social realities (Mbembe, 2012: 19-26).

China's technology-driven development strategy aims not only to foster economic growth but also to achieve ideological and cultural transformation. The state positions technology as a tool for reinforcing national identity, strengthening sovereignty, and securing strategic advantages on the global stage. For instance, China's digital platforms such as WeChat, TikTok, and Weibo go beyond serving individual users; they act as spaces for advancing national narratives and state policy objectives. These platforms are designed as technologies that encourage ideological alignment and enable users to interact within a national framework.

Moreover, China’s “dual circulation” strategy emphasizes fostering innovation in both domestic and international markets while striving for technological self-reliance. This strategy combines efforts to reduce dependence on foreign technologies with the creation of robust indigenous innovation ecosystems. Investments in critical areas such as semiconductors and artificial intelligence reflect a broader techno-nationalist agenda that seeks to enhance national security and economic autonomy. This dual approach highlights China’s role as both a participant in and a regulator of the global platform economy.

Additionally, China’s technological nationalism includes ambitions to reshape global supply chains and establish international standards. The data collection and user interaction analysis capabilities of digital platforms have become not only economic assets but also strategic tools. These dynamics contribute to what is known as platform sub-imperialism, where digital platforms act as instruments of both regional dominance and global influence. By leveraging its digital infrastructure, China is redefining how technology functions as a force for transformation, not only at the national level but also within the global order.

1. Digital Platforms, Phones and Vehicles

China's digitalization process has focused on developing its own national platforms that operate independently and autonomously, without reliance on foreign

technologies or investment. This platformization was enabled by a deliberate, government-driven legal policy that regulates the digital economy and digital technologies. Through fragmented and vague local regulations, China successfully pushed global tech giants out of its markets. The ambiguity in legislation allowed Chinese authorities to protect the interests of domestic companies from foreign competitors. By blocking platforms like Google, Yahoo, YouTube, Facebook, Twitter, Pinterest, WhatsApp, Instagram, and Snapchat, China not only excluded these Western sites but also the major business projects associated with them. In their absence, China established its own "technological trinity" consisting of Baidu (similar to Google and Yahoo), Alibaba (an alternative to Amazon and eBay), and Tencent (developer of WeChat, an alternative to WhatsApp). These platforms have collectively accumulated over one billion users worldwide along with extensive user data. For instance, the success of China's MOOC educational platform, bolstered by direct government support, came at the expense of Coursera, which was effectively removed from the Chinese market. The digital landscape in China, including internet services, mobile communication, payment systems, artificial intelligence, and big data, is entirely dominated by national platforms. These platforms gather vast amounts of data, such as email, social media activity, financial transactions, online shopping, geolocation, and dating app usage, and share this information with the government. While this strategy enhances state security by limiting access to sensitive data by foreign intelligence agencies, it also exposes a lack of effective personal data protection mechanisms, granting relatively unrestricted access to the ruling party and law enforcement agencies (Troshchinskiy, 2021: 452).

The first of the platforms examined is WeChat. WeChat (known in Chinese as Weixin, meaning "micro-message") is a mobile application launched in January 2011 by the Chinese multinational company Tencent Holding Limited. With over one billion monthly active users as of 2018, it has become one of the most important smartphone applications in China. WeChat surpasses the features of Western counterparts like WhatsApp by offering a multifunctional platform. WeChat integrates messaging, social networking, and mobile payment services while continuously expanding its functionality with features such as city services, enabling users to book transportation or pay traffic fines in metropolitan areas. Its core social media features include messaging services and photo/video sharing through the "Moments" function. Like WhatsApp, it provides free video and voice calling capabilities along with a wide range of emojis for emotional expression. WeChat is more than just a social media platform; it also serves as a source of information. The WeChat-Public-Account feature allows users to follow specific public accounts to receive information. Organizations, including businesses, universities, and government entities, use these accounts as

channels to disseminate information and engage with users. In January 2014, WeChat introduced the "red envelope" (hóngbao) feature, digitizing the traditional Chinese practice of giving monetary gifts in red envelopes, particularly during the Spring Festival. This feature quickly gained popularity, with over 768 million people participating in sending and receiving red envelopes during the six-day Spring Festival holiday in 2018. Additionally, in September 2017, 902 million users logged into WeChat daily, sending 38 billion messages per day, highlighting the app's integral role in daily life. Despite WeChat's rapid growth, research on its societal and individual effects remains scarce. Studies have often focused on popular Western platforms like Facebook and WhatsApp, leaving a gap in understanding the unique cultural and functional aspects of WeChat. Given its integration into everyday life and its rapidly evolving features, further research is needed to examine its impact on motivation, mental health, and societal interactions. WeChat's complexity and its deep integration into users' lives demand a comprehensive analysis of its broader effects (Montag, Becker & Gan, 2018: 1-2).

WeChat plays a pivotal role in China's complex interplay between the state, civil society, and the Internet. Unlike the Western notion of civil society as autonomous from the state, China’s civil society operates under state influence, with its legitimacy and protection dependent on government structures. WeChat has become a significant platform in this landscape, particularly due to its relative freedom compared to the heavily censored Weibo. After stricter Internet controls were implemented, especially following Xi Jinping’s rise to power in 2013, Weibo faced a crackdown on opinion leaders and the introduction of severe penalties for spreading rumors. These measures led to a decline in Weibo's popularity, driving users toward WeChat, which offered more privacy and lighter censorship. While WeChat is not immune to state control, its technical features, such as private messaging and delayed censorship effects, provide users with ways to navigate restrictions. Public accounts face higher levels of censorship, especially on topics like collective action, government policies, and corruption, but creative methods, such as keyword-based retrieval systems, allow users to bypass some of these barriers. The Chinese government employs both coercive and subtle strategies to govern online spaces. In addition to censorship, it seeks to enhance its presence on platforms like WeChat and Weibo by using accounts from state media and government agencies to engage with the public. These accounts aim to influence public opinion through rapid responses and relatable communication styles. This dual approach reflects a strategy not only to suppress dissent but also to "occupy the online frontier." Despite censorship, WeChat fosters a relatively private environment for discussion and even facilitates protest organization. Its closed networks of acquaintances ensure effective and reliable information diffusion, albeit slower than open platforms. WeChat’s role in supporting

environmental movements exemplifies its potential as a platform for civil action. While state control over media platforms is significant, the need for information flow to sustain business and technological innovation allows some space for social and political discussions. WeChat's popularity and adaptability showcase how commercial interests, technological innovation, and state policies interact to create a dynamic online environment that, despite challenges, offers avenues for public engagement and expression. If WeChat were to lose its appeal or freedom, it is likely that alternative platforms would emerge to meet user demands, highlighting the resilience of China's digital ecosystem (Tu, 2016: 346-347).

Another platform to look into is TikTok. TikTok, known as Douyin in China, is a short-video-focused social media platform developed by ByteDance. Launched in 2016 for the Chinese market, Douyin expanded internationally as TikTok following ByteDance's acquisition of the U.S.-based Musical.ly app. By 2020, TikTok had over 800 million active users globally, making it one of the most popular social media platforms. It allows users to create short videos with background music, participate in trending challenges, and engage with personalized content through features like the "For You" feed, which uses advanced algorithms to recommend videos. While TikTok and Douyin share similar technical features, Douyin is exclusive to China and operates under strict censorship laws, offering only Chinese content, whereas TikTok provides global content with fewer restrictions. Both platforms are essential tools for brands to reach large audiences and effectively leverage electronic word-of-mouth (eWOM) marketing, solidifying their roles in content creation and advertising (Yang & Ha, 2021: 297).

Whether TikTok constitutes a public sphere has become a debated topic in recent literature. Habermas's concept of the public sphere emphasizes accessibility, freedom of expression, and rational debate on public issues. However, TikTok, particularly in the context of China, operates under state intervention and commercialization, which may not fully align with this ideal. While the Chinese media environment is shaped by government control and corporate influence, digital platforms like TikTok provide users with opportunities to express diverse opinions and shape public discourse. Although designed primarily as an entertainment platform, TikTok allows users to access political content and initiate discussions. The algorithm-driven nature of its content and censorship practices may undermine the platform's transparency and inclusivity, yet TikTok can be considered a form of digital public sphere. It functions as an intermediary mechanism supporting online participation and freedom of expression, despite its limitations. Thus, its contribution to democratic processes should be evaluated in terms of its ability to amplify diverse voices and empower users to create and engage with content (Lin, 2022: 89).

TikTok stands out from other social media platforms by offering an entertainment-focused user experience and placing less emphasis on identity management. Its "For You" page, driven by an algorithm tailored to users' habits, facilitates content discovery, while the accessibility of the video creation button and the ability to use existing sounds in one's own content encourage original content creation. Unlike other platforms, where users often interact within a limited social network, TikTok's algorithm grants visibility to new creators, providing broader opportunities for exploration. Entertainment emerges as the primary motivation for users, pushing elements like socialization or information sharing into secondary importance. Furthermore, TikTok shifts away from traditional media's approach of designing content for homogeneous audiences, instead offering a content consumption model that caters to individual interests. These features elevate TikTok beyond a mere entertainment platform, creating a dynamic ecosystem that hosts diverse perspectives and content (Highhouse, 2022: 702-703).

The last platform examined is Weibo. Weibo is a microblogging service provided by Sina, one of the largest Chinese-language infotainment portals, and is highly popular among users in China. Similar to Twitter, Weibo allows users to post short tweets or messages of up to 140 characters, but due to the structure of the Chinese language, where each character represents a full word, the content on Weibo is often richer compared to Twitter. Users' Weibo pages are publicly accessible, and mutual followers (referred to as fans) can exchange private messages. In addition to standard Twitter-like features such as search and trending topics, Weibo offers enhanced functionality, including the ability to upload music, videos, pictures, and emoticons directly into feeds, as well as threaded comments that appear under the original post without being broadcast to the user's followers. Weibo also promotes engagement and interactivity by offering over 1,600 user applications, such as games, polls, radio, music, and file sharing. Users can earn Weibo medals for participating in various activities, such as tweeting consistently over several days or retweeting brand event announcements. With the rapid global growth of microblogging platforms and their potential use in public policy, civic activism, marketing, and advertising, Weibo stands out for its unique features and user engagement strategies. Differences in functionality, content richness, and cultural context make Weibo distinct from Twitter, suggesting variations in user motivations and practices. These characteristics position Weibo as more than just a social media platform, offering a rich and interactive experience for its users (Zhang & Pentina, 2012: 312-313).

Weibo plays a complex role in the relationship between social media and politics in China. While it primarily serves as an information hub for Chinese youth, satisfying their need for connectedness and access to information, it also provides a platform for online political participation. As an alternative source of information, Weibo

enables users to share and access content freely and at low cost, fostering public deliberation and the formation of online civic groups. These groups often unite like-minded individuals with shared political concerns, transcending geographical boundaries. Despite its potential, the relationship between Weibo and political participation in China remains sensitive and under-researched due to political constraints. Political participation, whether online or offline, is a delicate topic in contemporary China, making it difficult to collect reliable and comprehensive data. While some scholars view Weibo optimistically as a tool that could reshape China's socio-political landscape, empirical evidence is limited, and the platform's ability to incite radical political change remains questionable. Most existing research relies on qualitative methods, such as case studies and interviews, rather than large-scale surveys, due to the challenges of studying such a politically sensitive issue (Wang & Shi, 2018: 517).

Sina Weibo's political significance lies in its ability to act as a hybrid platform for both broadcasting and interactive communication, making it a vital space for public opinion formation and information exchange in China. Its emergence as a dominant microblogging service coincided with the Chinese government's restrictions on other platforms like Twitter following the Urumqi riots in 2009. This created a "microblogging vacuum" that Sina Weibo capitalized on, growing rapidly and becoming a major information source for Chinese netizens. Weibo has been leveraged to discuss public events, organize activities, and even engage with social and political issues, albeit within the boundaries of China's state censorship. While it allows the dissemination of information and facilitates weak social connections around topics of shared interest, its potential as a tool for radical political change remains limited due to strict government oversight. Nevertheless, Weibo has played an important role in fostering public dialogue on social and political matters, highlighting its dual role as both a controlled platform and a space for civic engagement (Zhang & Negro, 2013: 201-202).

WeChat, TikTok, and Weibo are China-based digital platforms that share key characteristics while excelling in different domains. WeChat integrates messaging, social interaction, and payment systems, becoming an essential part of daily life, while TikTok focuses on entertainment and content creation, achieving global success through its short video format. Weibo, as a microblogging platform, facilitates information sharing and plays a significant role in shaping public opinion. All three platforms comply with China's strict censorship policies while enabling users to create, share, and interact with content. Their use of algorithms to deliver personalized experiences, adaptability to local and global dynamics, and strong commercial potential make them effective tools for both individual and business users. These

attributes position WeChat, TikTok, and Weibo as prominent examples of China's digital innovation and influential players in the global digital ecosystem.

At this point, it can be said that these platforms have given rise to the concept of "platform sub-imperialism". Platform sub-imperialism describes the role of certain Global South countries as regional hubs for data extraction, labor exploitation, and digital platform expansion into neighboring countries, reflecting a hierarchical relationship within the global digital economy. Building on Ruy Mauro Marini's concept of sub-imperialism, this framework emphasizes how these countries, while economically and technologically dependent on the Global North, leverage their regional influence to dominate and exploit nearby markets. Platforms from these nations serve as intermediaries, channeling resources, labor, and data from their regions to the centers of global capitalism, while simultaneously reinforcing their own dominance within local contexts. This dual role—acting as both subordinate to imperial powers and as imperial agents within their regions—reshapes traditional notions of colonialism in the digital era. By facilitating data colonialism and expanding regional economic influence, platform sub-imperialism exposes the layered and unequal relationships embedded in the global platform economy, particularly within the Global South. This concept highlights how digital platforms are not merely neutral technologies but are actively involved in replicating and sustaining global inequalities through new forms of exploitation and dependency (Seto, 2024: 3).

With this concept, the recent breakthrough in smartphones and electric vehicles produced by China may also gain meaning. The Chinese smartphone market grew by 1.5% year-on-year in the first quarter of 2024, marking its second consecutive quarter of growth. This expansion was driven significantly by Huawei's impressive 69.7% sales increase, which saw its market share rise from 9.3% to 15.5%. Meanwhile, Apple's sales dropped by 19.1%, with its market share falling from 19.7% to 15.7%. Chinese manufacturers are gaining strength both domestically and globally by introducing innovative products and high-quality devices. Europe has become a key focus, where technologies such as foldable phones, advanced cameras, and ultra-fast chargers are drawing attention. Chinese brands aim to increase their market share in the premium segment, enhancing their global competitiveness. Leading the growth are brands like Realme, Xiaomi, Oppo, and Honor, which are solidifying China’s position in the global smartphone industry (Ekonomim, 2024; Anadolu Ajansı, 2024).

A similar breakthrough is also taking place in the electric vehicle sector. China’s electric vehicle (EV) sector continues to thrive, overcoming global trade restrictions and showcasing strong growth. Leading manufacturers such as BYD, Li Auto, Nio, and XPeng reported significant year-on-year sales increases in August 2024, with BYD achieving a 30% rise in new energy vehicle sales, including a 48% growth in plug-in

hybrid deliveries. Despite new tariffs imposed by the EU, U.S., and Canada, Chinese EV companies are expanding their global footprint by investing in overseas production facilities in countries like Hungary, Brazil, Turkey, and Spain to mitigate trade barriers and ensure long-term growth. While temporary declines in European EV registrations have been observed, analysts believe these challenges will be short-lived as Chinese manufacturers adapt through innovative strategies and market diversification. With their focus on advanced technologies, competitive pricing, and strategic partnerships—such as Uber and BYD's deal for 100,000 EVs in Europe and Latin America—China's EV industry is cementing its role as a global leader in sustainable transportation (Teng, 2024). Behind this growth are China's investments in techno-economy and moves called techno-nationalism.

2. Techno Economy-Techno Nationalism

Techno-economy explores the relationship between technological innovations and economic systems, focusing on how new technologies reshape cost structures, create innovation opportunities, and transform organizational models. The concept of a techno-economic paradigm (TEP) highlights the emergence of a dominant framework during technological revolutions, where the most efficient and profitable practices align with prevailing technologies. These paradigms drive systemic change in three key areas: they introduce lower-cost inputs that revolutionize production and distribution, open new spaces for innovation in both existing and emerging industries, and establish superior organizational practices that redefine work and business strategies. For instance, water power during the Industrial Revolution and microprocessors in the Information Age served as transformative forces, altering how industries operated and economies functioned. Over time, these changes not only enhance efficiency and profitability but also influence societal norms, labor dynamics, and consumer behavior, making techno-economy a vital framework for understanding the broader impacts of technological progress (Perez, 2010: 13-18).

China's techno-economy is characterized by rapid growth and global influence, driven by advancements in emerging technologies like 5G, artificial intelligence, the Internet of Things (IoT), and blockchain. With over 900 million internet users and a vibrant digital economy contributing 30% of its GDP, China has become the largest and most dynamic global market for technological innovation. The country accounts for nearly half of global e-commerce transactions, hosts nine of the world's 23 private FinTech unicorns, and holds 29% of global renewable energy patents, showcasing its leadership in digital and green technologies. Key players like Huawei, Tencent, Baidu, and BYD are driving technological advancements that not only boost China's domestic economy but also shape global markets. In 2019, China's high-tech trade exceeded

$1.5 trillion, reflecting its emphasis on international collaboration with suppliers, startups, academic institutions, and investors. The Chinese government's strategic focus on innovation, embedded in its 14th Five-Year Plan, further accelerates this growth. The COVID-19 pandemic amplified the importance of China's technological capabilities, with the widespread adoption of big data, digital payments, remote work tools, and telehealth services demonstrating the global impact of its tech sector. China's software industry also reflects this growth, generating $1.03 trillion in 2020, driven by sectors such as Software-as-a-Service (SaaS), information technology services, and embedded system software. Meanwhile, the FinTech sector is addressing gaps in SME financing, leveraging inclusive finance initiatives and technological innovation to transform credit systems, asset management, and corporate financial services. Despite challenges like market access restrictions and intellectual property concerns, China's expanding tech landscape offers significant opportunities for international collaboration and investment, solidifying its role as a global leader in the techno-economic sphere (China-Britain Business Council, n.d.).

China's techno-economic rise is deeply rooted in state-led policies that prioritize technological advancement, self-reliance, and global leadership. Through initiatives like "Made in China 2025" and the "dual circulation" strategy, the government has fostered innovation by attracting foreign investment, promoting collaboration with transnational corporations, and providing subsidies to domestic firms. This approach has transformed China into a global powerhouse in industries such as renewable energy, telecommunications, and artificial intelligence. Companies like Huawei and CATL exemplify the success of China's manufacturing ecosystem, which benefits from government-supported industrial clusters and extensive R&D investments. Despite geopolitical tensions, particularly with the U.S., and challenges like inefficiencies and market distortions, China has accelerated efforts to achieve technological self-sufficiency in critical areas such as semiconductors and quantum computing. By leveraging international partnerships and developing indigenous innovation, China has solidified its position as a global leader in emerging technologies and industrial production, reshaping global supply chains and technological standards (Abdikarov, 2023: 72-76).

It can be said that China's techno-economy is related to techno-nationalism. Techno-nationalism refers to an industrial policy framework aimed at fostering self-reliance by nurturing "national champions" in technology sectors while curbing foreign competition, particularly in the context of groundbreaking advancements during the Fourth Industrial Revolution. This era intersects digital and physical economies through technologies like Artificial Intelligence, Big Data, robotics, biotechnology, the Internet of Things, and nano-engineering. Techno-nationalism focuses not only on military or dual-use applications but also on broader strategies to

maximize national power. It blurs the distinctions between economic advantage, military capability, and scientific and technological capacity, framing all as national security concerns. As a specific subset of nationalism, techno-nationalism aligns with the shared goal of prioritizing national interests but uniquely emphasizes the role of technology. Historically associated with countries like Japan, China, and Germany, techno-nationalism has emerged as a widely adopted strategy across nations to adapt to the modern, industrial, and globalized world. It underscores the importance of state intervention in research and development (R&D) and technology infrastructure to achieve national objectives, distinguishing itself from techno-globalism—a liberal, individualistic approach that advocates for the reduction of global barriers to technology transfer and innovation. While techno-nationalism seeks to consolidate national capabilities, it contrasts with the techno-globalist ideals exemplified by countries like Singapore and Hong Kong, which rely on foreign firms to acquire and disseminate technology (Yılmaz, 2023: 226-227).

China's technological nationalism refers to the strategic use of technology to advance national interests, bolster economic, political, and ideological power, and enhance sovereignty. It views technological innovation, including digital technologies, as a lever not only for economic growth but also for strengthening national identity, sovereignty, and ideological coherence. China employs its digital infrastructure, advanced technologies like artificial intelligence, big data, and 5G, as well as state-backed tech giants, as tools to serve its national agenda. Digital platforms in China, rather than promoting a global cosmopolitan culture, reinforce nationalist narratives and strengthen national frameworks. Platforms like Baidu filter search results through state-aligned narratives, shaping information access from a national perspective. Social media platforms further amplify nationalist discourse, creating environments where people interact more deeply with national symbols and narratives. Technology in China is not merely a means of control but a mechanism to keep individuals ideologically aligned with national values and narratives. Technological nationalism in China is also evident in policies such as the "Made in China 2025" strategy and its ambitions to lead in artificial intelligence and semiconductor manufacturing. These policies aim to reduce reliance on foreign technology and establish self-sufficiency in high-tech industries. Additionally, the government integrates technology into its broader national strategy, utilizing it to strengthen economic competitiveness, military capability, and ideological cohesion. In essence, China's technological nationalism represents a model where technology is not only an instrument of innovation or economic progress but also a mechanism to reinforce national sovereignty and identity, blending technological advancements with a nationalist vision (Schneider, 2023: 1178-1179).

China's techno-nationalism represents a state-led approach aimed at advancing national interests through technological self-reliance and innovation. Distinct from earlier discussions, it reflects a broader ambition to secure a dominant position in emerging technologies, including artificial intelligence, 5G, semiconductors, and renewable energy. China's strategy emphasizes reducing dependency on foreign technology while simultaneously fostering domestic innovation and expanding its influence in global technology markets. Unlike purely protectionist policies, China's techno-nationalism blends self-reliance with targeted international collaboration. For instance, while promoting indigenous innovation under policies such as "Made in China 2025," China continues to pursue global technology acquisitions and partnerships to bridge gaps in its technological capabilities. This dual strategy has led to significant progress, such as CATL's rise as the world's largest battery manufacturer and China's leadership in solar panel efficiency and cost-effectiveness. In addition to industrial and economic objectives, China's techno-nationalism underscores the integration of technology into its national security framework. The government views advancements in areas like semiconductors and quantum computing not only as economic priorities but also as critical to safeguarding state sovereignty and ensuring strategic leverage in geopolitical conflicts. China's dominant role in rare-earth mineral processing, crucial for advanced electronics, further reinforces its ability to exert influence on global supply chains. Furthermore, China's techno-nationalism aligns closely with its broader political objectives. The focus on technology as a pillar of national strength enables China to reinforce its global standing and counter external pressures, particularly amid rising tensions with the United States and its allies. The state's active involvement in research and development, coupled with extensive subsidies and public-private partnerships, reflects a long-term vision to position China as a global leader in technological innovation while bolstering its domestic resilience against external disruptions (Nakayama, 2012: 9-11).

China's techno-nationalism encompasses a strategic approach to achieving global technological leadership, combining short-term and long-term goals. In the short term, China employs "mercantilist" strategies to bridge technological gaps with competitors, including technology transfers, acquisition of intellectual property, and reliance on foreign expertise. This approach seeks to address areas of dependency, particularly in General Purpose Technologies (GPTs) like artificial intelligence and 5G, which are critical for economic and military competitiveness. In the long term, China invests heavily in building a self-reliant domestic innovation ecosystem. This effort includes restructuring its research and development (R&D) infrastructure, enhancing university systems to produce skilled talent, and fostering the Jǔguó system, a national mobilization framework that links universities, high-tech parks, and industries to accelerate innovation. The Jǔguó system, often compared to an "Olympic Gold medals

model," prioritizes results over efficiency and aims to develop advanced technological capabilities to reduce reliance on foreign technology. China's "Dual Circulation Strategy" complements these efforts by fostering domestic innovation growth while maintaining global trade ties to ensure continued access to international markets and resources. The development of dual-use technologies, which serve both civilian and military purposes, further underscores the interconnectedness of innovation and national security. These advancements enhance China's geopolitical influence, allowing it to expand its strategic capabilities and assert its position in the global technology race. However, this pursuit of technological self-sufficiency has led to increased tensions with strategic competitors, particularly the United States, which views China's approach as a challenge to the liberal international economic order. As China continues to implement policies aimed at reducing dependency on foreign technology and strengthening its innovation ecosystem, the global geopolitical landscape is likely to remain shaped by the competition for technological primacy (Bilgin & Loh, 2021).

In the context of the "technology and state" debates, techno-economy and techno-nationalism represent critical frameworks for understanding how nations leverage technology to reshape economic systems, assert sovereignty, and pursue global leadership. Techno-economy emphasizes the role of technological innovations in driving systemic economic transformation through cost efficiency, innovation opportunities, and advanced organizational practices. It reflects how nations integrate new technologies into production and consumption, enhancing both domestic economic capabilities and global competitiveness. China's techno-economic policies, including strategic investments in sectors like artificial intelligence, 5G, and renewable energy, exemplify how state-led initiatives foster innovation ecosystems that transform domestic economies while influencing global supply chains.

Techno-nationalism, on the other hand, situates technological development within a framework of national interest, blending innovation with sovereignty and geopolitical objectives. It prioritizes reducing dependency on foreign technologies and enhancing domestic capabilities, often through state intervention and policies like "Made in China 2025." China's approach demonstrates how techno-nationalism intertwines technology with national security and ideological coherence. By fostering indigenous innovation while strategically engaging with global technology markets, China seeks to secure self-reliance in critical technologies such as semiconductors and quantum computing, thus reinforcing its geopolitical leverage.

Both concepts underscore the state's central role in shaping technological progress to achieve national goals. While techno-economy focuses on the broader economic

impacts of technology, techno-nationalism integrates these advancements into a nationalist framework, emphasizing sovereignty and global positioning. Together, these frameworks reveal the dynamic interplay between technology, economy, and state power, illustrating how technological advancements serve as tools for both economic transformation and national assertion in an increasingly competitive global landscape.

There is a clear relationship between the concepts of platform sub-imperialism, techno-economy, and technological nationalism, particularly in the context of how states leverage digital technologies to assert global influence. Techno-economy focuses on how technological advancements reshape economic systems and power structures. In this context, platform sub-imperialism highlights the role of digital platforms not just as economic tools but also as instruments for extending geopolitical influence. For example, China's platforms like WeChat and Alibaba serve as both economic drivers and tools of international expansion, reinforcing China's digital infrastructure and spreading its economic influence globally. Similarly, technological nationalism emphasizes state-driven strategies to achieve technological self-reliance and national security, which align closely with the mechanisms of platform sub-imperialism. Policies such as China's *Made in China 2025* and its strategic emphasis on indigenous innovation demonstrate how digital platforms are not only reducing dependency on foreign technologies but also positioning China as a global digital power. These platforms amplify nationalist narratives domestically while projecting China's technological dominance internationally, effectively blending techno-nationalism with sub-imperial dynamics. The intersection of these concepts reveals how digital platforms, underpinned by state-led innovation and techno-economic strategies, become tools of both national development and international influence, epitomizing the principles of platform sub-imperialism.

Conclusion

In examining the interplay between metamorphic thought, sub-imperialism, techno-economy, and techno-nationalism, this study provides a comprehensive framework for understanding the intricate relationships between technology, state power, and global dynamics. Each of these concepts offers unique insights into how nations and societies adapt to technological revolutions, negotiate power structures, and assert their identities in a rapidly transforming world. The convergence of these ideas highlights the central role of technology in shaping contemporary socio-political and economic landscapes.

Metamorphic thought underscores the transformative potential inherent in moments of crisis or systemic change. It reveals how established systems, whether

colonial, economic, or technological, are dismantled and reconstituted, often creating new frameworks for resistance, innovation, and identity. This concept aligns with the dynamics of technological revolutions that disrupt traditional economic models, societal norms, and power hierarchies. In this context, metamorphic thought becomes a lens for understanding not only the disruptive nature of technology but also its creative and reconstructive capacities.

Sub-imperialism adds another layer to this analysis by highlighting the dual role of emerging powers within the global system. Countries like China act as intermediaries that channel resources, data, and labor from their regions to the global centers of power while simultaneously asserting dominance within their own spheres of influence. This duality is especially evident in the context of digital platforms and technologies, which function as tools for both economic exploitation and geopolitical leverage. The expansion of Chinese platforms such as WeChat, TikTok, and Weibo exemplifies how sub-imperial powers utilize technology to reshape regional and global economic relationships.

Techno-economy situates technological innovation within the broader context of economic systems, emphasizing its role in driving systemic transformation. It reveals how new technologies redefine cost structures, create opportunities for innovation, and transform organizational practices. China's techno-economic strategy, marked by investments in artificial intelligence, 5G, renewable energy, and semiconductors, demonstrates the transformative potential of aligning state-led innovation with economic growth. This alignment has not only accelerated China's domestic development but also positioned it as a major player in global supply chains and technology markets.

Techno-nationalism, in turn, connects technological innovation with national sovereignty, security, and identity. China's approach to techno-nationalism, characterized by initiatives like "Made in China 2025" and the "dual circulation" strategy, illustrates how states use technology to assert self-reliance and reduce dependency on foreign powers. By fostering indigenous innovation and strategically engaging in global technology markets, China has integrated technological advancement into its national identity and geopolitical strategy. This approach underscores the intersection of economic, political, and ideological objectives in shaping technological progress.

The interplay of these concepts is most clearly reflected in China's digital platforms and technological policies. Platforms like WeChat, TikTok, and Weibo not only serve as tools for economic growth and innovation but also reinforce nationalist narratives and extend China's influence internationally. These platforms embody the principles

of platform sub-imperialism, functioning as both economic drivers and instruments of geopolitical strategy. Simultaneously, they align with techno-nationalist objectives by promoting self-reliance, advancing national security, and enhancing ideological cohesion.

China's technological rise, driven by its techno-economic strategies and rooted in techno-nationalist policies, represents a case study in how states leverage technology to navigate the complexities of global power dynamics. Its dual strategy of fostering domestic innovation while engaging in international collaboration highlights the nuanced approach required to achieve technological self-sufficiency and global leadership. However, this approach is not without challenges. Geopolitical tensions, market distortions, and ethical concerns surrounding data sovereignty and surveillance remain critical issues that must be addressed.

In conclusion, the interrelation of metamorphic thought, sub-imperialism, techno-economy, and techno-nationalism reveals the multifaceted nature of technological progress. Technology emerges not merely as a tool of innovation but as a central force in the reconfiguration of economic systems, national identities, and global power structures. China's experience underscores the transformative potential of technology while highlighting the need for critical engagement with its implications. As technology continues to evolve, its role in shaping societies and global relationships will remain a critical area of study, requiring a nuanced understanding of the intersecting forces that drive change. This analysis not only enhances our comprehension of technology's impact but also offers a framework for addressing the inequalities and challenges embedded within the global digital economy.

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