SCUSA 72 Table Paper: China & East Asia

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As the United States' closest near-peer challenger, China has already made considerable advances in emerging and disruptive technology. How will political and business leaders in the United States and China manage the opportunities and challenges created by technological developments in an era of great power competition? How might China use its access to data and its investment in new technology to influence other East Asian countries? The resurgence of great power competition has brought renewed focus on the different instruments of power. Through their sweeping Belt and Road Initiative, China has invested billions of dollars in development projects across the globe, seeking to increase their sphere of influence. Much of this expansion is based on the soft power that comes from China presenting itself as a global leader in cutting edge technologies, from robotics to more advanced forms of artificial intelligence. What are the technologies that China seeks to dominate in the near future, and can the United States retain or regain a leading position? In the domestic sphere, are the extraordinary efforts at censorship by the Chinese Communist Party to tame the potential political challenges of the internet and social media successful? Is there a potential backlash? To what extent can the United States work with its regional allies, particularly Japan, Taiwan, and India, to counter nationalist Chinese narratives that are increasingly shaping the content of regional social and conventional media?

Introduction

Humanity is currently experiencing its fourth industrial revolution, which has the potential to lift China to hegemony.[1] Where the third industrial revolution emerged from the advent of electronics and information technology, the fourth industrial revolution is built upon the internet and digitalization. Disruptive technologies such as mobile internet, artificial intelligence and robotics is redefining how every sector of a state operates. States are redefining military doctrine, the international economy and even state institutions themselves to take advantage of these new and emerging capabilities.

This new era has introduced groundbreaking improvements in numerous industries, such as construction, manufacturing, and healthcare. But it has also ushered in a "tech cold war" between the United States and China.[2] In the current rivalry between the world's two most powerful states, a pivotal advantage in any of these technologies may decide the victor.

This paper will explore how China is leveraging modern disruptive technologies in the military, international economy, and government sectors. The paper concludes with questions to consider regarding U.S. policy. Readers are encouraged to formulate additional puzzles in exploring the below topics.

Military

Artificial Intelligence: The Next Revolution in Military Affairs?

Chinese scholars and military leaders believe that artificial intelligence (AI) will enable the next military technology revolution. This revolution is expected to be as significant as the military information technology revolution was several decades ago.[3] Interests for military AI application include weaponized aerial and underwater autonomous robotic platforms as well as cyber applications.[4] Chinese investment in AI demonstrates this priority, and numerous Chinese companies have become global leaders in both the academic and business sectors of AI. China's SenseTimes has reported 400% annual revenue growth for three consecutive years, while the Chinese firm DJI dominates the consumer drone industry with 74% of the world's market share.[5] In terms of military application, at least one Chinese drone manufacturer has reported its drones capable of autonomous target strikes and combat missions.

Early military application of AI at an individual level focus on Lethal Autonomous Weapons Systems (LAWS), which build upon sensory and pattern recognition as well as automation to react to enemy contact at speeds far beyond a human operator's capabilities.[6] This kind of automation has been present for decades, for example, in the U.S. Navy's Close-In Weapons System (CIWS; pronounced "sea-whizz") which is designed to automatically shoot down incoming cruise missiles when activated. With greater sophistication, future LAWS may be able to detect and engage enemy tank silhouettes from above or neutralize enemy aircraft during high-intensity air battles.[7] From automatically intercepting intercontinental ballistic missiles to hunting down enemy submarines, the utility of LAWS becomes more crucial when considering the challenges of the next near-peer war.

The Chinese vision for military AI reaches beyond LAWS however, as one of the largest Chinese defense companies foresees the implementation of AI clusters that will coordinate forces throughout the battlespace almost instantly with greater efficiency and accuracy than the best-trained human operators. Chinese Ministry of National Defense officials have echoed this ambition for the Chinese military to utilize AI to "capture the 'new commanding heights' of the future battlefield".[8] In this facet, Chinese Academy of Engineering experts have deemed AI to become the most important technology in the next Revolution of Military Affairs.

International Economy

The Digital Iron Curtain

The U.S.-China rivalry has materialized into a "tech cold war", complete with its own Digital Iron Curtain. The U.S. is attempting to isolate from the influence and vulnerabilities of Chinese technology, banning Huawei's 5G network and virtually prohibiting U.S. companies from supplying software and components to Chinese tech companies.[9] However, these efforts pale in comparison to China's proven ability to isolate from the influence of Western technology. China's "Great Firewall" has allowed it to develop its own internet infrastructure completely distinct from the West.[10] The Chinese search engine Baidu, the Alibaba online marketplace and

the social media platform WeChat are completely insulated from the otherwise U.S.-dominant internet culture of Google, Amazon, and Facebook. But rather than simply insulating, China is expanding their internet and thus their influence. Facebook chief executive Mark Zuckerberg warned in 2019 that "China is building its own internet focused on different values and is now exporting their vision of the internet to other countries".[11] For the first time, states must choose between internets and ultimately between U.S. and Chinese influence.

The internet is only one aspect of the Digital Iron Curtain, however. China has been developing its own technological ecosystem which includes software, hardware, communications, and financial platforms that are distinct from its Western counterpart.[12] Separate standards in operating systems, CPU architectures, satellite communication networks and payment systems have forced trading states to choose between Western and Chinese systems or to adopt both tech ecosystems at significant cost. Deutsche Bank has estimated the cost of this dual standard will exceed $3.5 trillion in five years.[13]

Chinese Cryptocurrency: The End of the Dollar's Hegemonic Reign?

It is perhaps taken for granted that the U.S. has been able to monitor and sanction international financial activity through its comprehensive access to the Society for Worldwide Interbank Financial Telecommunication (SWIFT) international payment network. This capability, for example, had led the U.S. to arrest Huawei chief financial officer Meng Wanzhou for violating U.S. sanctions against Iran.[14] Since World War II, the U.S. has leveraged economic sanctions as an essential tool in its grand strategy. Using blockchain technology and the advent of cryptocurrency, China is starting to bypass this vulnerability. The yuan, China's national currency, is becoming digital and China started testing its implementation in cities in 2020. A digital currency will allow China to operate outside of the SWIFT system and is therefore immune to US monitoring and sanctions.

For digital currency to be successful as a national currency, the state must become a cashless society. China is well on its way towards this goal and has become the world leader in digital payment transactions. Two Chinese companies are responsible for most of these transactions: Alipay, which is part of Alibaba, and WeChat Pay. These and other third-party platforms in China accounted for $15.4 trillion in mobile payments in 2017, which was more than forty times the mobile payments processed in the U.S.[15]

Cryptocurrency garners trust as it is built on a neutral protocol that is beyond the sway of centralized institutions and the rule of law of a particular state.[16] This neutral aspect has already attracted some countries with failing economies. Traditionally, failing economies may rely on the U.S. dollar to replace its national currency, in a process commonly known as 'dollarization'.[17] Some states, such as the Marshall Islands and Venezuela, have recently turned to 'cryptonization', adopting or creating a digital currency that either replaces or supplements the dollar.[18] States that are acutely aware of their vulnerability under the SWIFT system, such as Russia, Iran and North Korea, have been trying to de-dollarize the international economy and would favor the continuing trend of cryptonization.[19]

Government and Politics

Digital Authoritarianism and China's Social Credit System

As previously discussed, China's "Great Firewall" has enabled the state to develop an internet infrastructure shielded from U.S. influence. Its primary function, however, is to selectively censor not only certain websites but also specific topics and internet behavior.[20] Leveraging AI and big data, selective censorship can predictively target and control potential dissenters through their data signatures. Not only does AI and big data make such selective and targeted censorship possible, but it does so with unprecedented cost efficiency. The cost of censorship created overwhelming challenges for states such as the USSR not only due to the resources invested in blocking information harmful to state control, but also in preventing the free flow of information that would otherwise allow creative and productive activities.[21]

Most of China's current investment in AI is dedicated towards domestic security. Through the continuing advances in AI technology, China has evolved into a digital authoritarian regime, combining selective censorship, internet surveillance, and public opinion manipulation with AI-enhanced video and audio surveillance. Other states have recognized the advantages and cost efficiencies of digital authoritarianism, and to date China has exported digital authoritarian technologies to Vietnam, Thailand, Sri Lanka, Iran, Zambia, Zimbabwe, Ethiopia and Russia, amongst other states. [22] Although many states may not utilize digital authoritarian repression to the extent that China has been able to accomplish, leveraging already present dual-use technologies (such as smartphones and digital assistants) creates an attractive prospect for these states to improve their means of social and political control.

A newer feature of China's digital authoritarianism is its social credit system. Using big-data collection and analysis, China has been able to automate its social management process.[23] Social management itself is not a new concept and involves optimizing interactions throughout the CCP (Chinese Communist Party) and between the CCP and society. Shaping these interactions allows the state to better allocate resources, control risks, stop dissent, and preempt and manage social conflict. The Chinese social credit system is powerful in that it generates both co-optative and coercive responsibilities for everyone in society and throughout the CCP. [24] Citizens are co-opted to participate as the same dual-use technology is tied to everyday conveniences such as electronic payment. Citizens are coerced to participate as activities, such as self-censoring online, are automatically monitored and assessed. Consequences for poor assessment or not participating in the social credit system affect not only the citizen but their personal networks as well.

A Note of Caution for Policy Development

Although it may be tempting to propose policies to coerce or otherwise influence China to reverse most or all of these disruptive technology initiatives, it's imperative to acknowledge that many of these capabilities are being shared with other states as well. China's growing influence is augmented by the attractive prospects these emerging technologies offer to states that wish to secede from the Western-designed postwar liberal order. Policy proposals must consider not only China, but the balance of power shifts and rifts in global institutions that these technologies

may propagate. A final word of caution: just as the Pandora's box of the atomic bomb could never be closed once opened, the potential dangers of AI-augmented military and social control technologies once developed will never be easily or permanently dismissed.

Questions for Consideration

1. How should the U.S. respond to potential Chinese military developments in AI and LAWS? What will the next arms race look like? Considering the many possible implementations of LAWS, should the global community attempt to ban or limit proliferation of AI-based weapons platforms? Should specific types of LAWS be particularly subject to prohibition?
2. Should the U.S. actively enforce the global dominance of the standards of the Western technological ecosystem? If so, how could policy make this possible? In addition to the trillion-dollar costs to the global economy, what are the other potential implications of having separate western and eastern (China, Russia, etc.) tech ecosystems?
3. Similarly, should the U.S. enforce the global dominance of the SWIFT international payment network? Apart from those discussed in this paper, what are the other potential political, security, and economic implications if China's digital currency becomes globally accepted?
4. Are there any features of China's digital authoritarianism that might make sense for the U.S. to employ for the sake of domestic or international security? Is the U.S. already employing technologies similar or equivalent to any of these features? What are the implications to other countries adopting digital authoritarianism? How should the U.S. respond when digital authoritarianism becomes the norm for a growing community of states?

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