

# The Battle for Digital Supremacy: China's Technological Politics and the New Global Order

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October 16, 2018

# ORGANIZATION OF TALK

Historical  
Context and  
Theoretical  
Framework

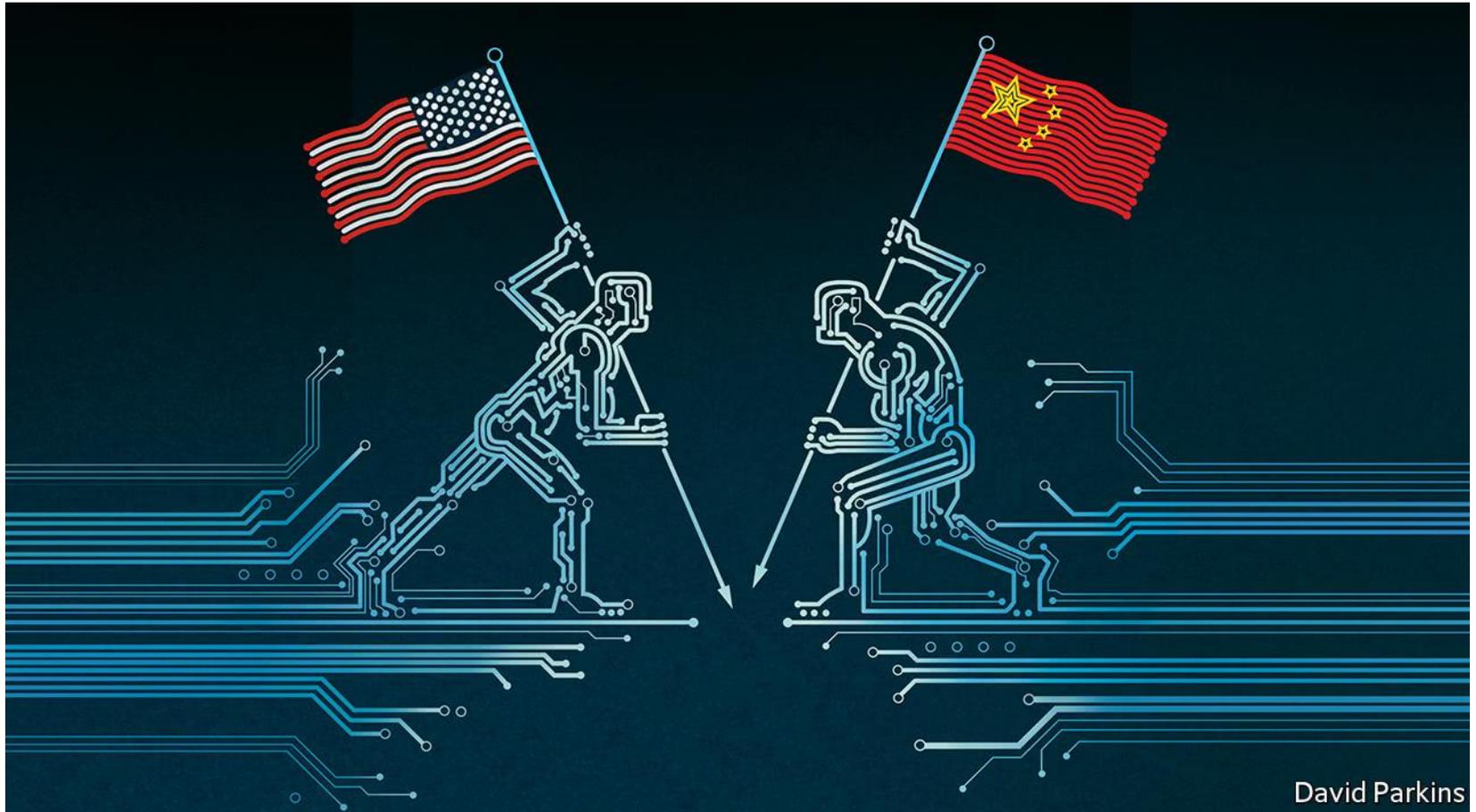
China's  
Technology  
Politics in a  
Close-up  
Look

Implications  
for the  
New Global  
Order

# Part I

## Historical Context and Theoretical Framework

# No Lack of Headlines, Graphics, and Predictions About US-China Technological Rivalry



Clash of the Titans /Economist July 7, 2018



Tech firms in emerging markets

Since my focus is not on the rivalry per se, but on the China side of the story, I would like to start with a different set of images.

Early this month, I visited Yan'an, the CPC's revolutionary cradle in northwest China, and toured the CCP's Museum of Journalism there.



## The CCP's Early Telegraphic System in a Cave





# 新华广播电台的创建

Establishment of Xinhua Broadcasting Station

1940年3月，周恩来从莫斯科返回延安，带回来一部广播发射机。党中央决定筹建广播电台，并成立了以周恩来为主任的广播委员会，领导广播电台的筹建工作。

军委三局九分队承担建台工作。台址选在延安西川王皮湾村的墩儿山下。他们发扬自力更生，艰苦奋斗的革命精神，于1940年12月30日开始播音，延安新华广播电台诞生了。

In March of 1940, Zhou Enlai returned Yan'an from Moscow with a broadcasting transmitter. The Party Central Committee decided to establish a radio station, and a Broadcasting Committee was set up headed by Zhou Enlai to establish the broadcasting station.

The station was constructed by Section 9, No. 3 Bureau of the Military Committee. The site was chosen under Durershan, Wangpiwancun, Xichuan of Yan'an. They kept up the revolutionary practice of self-reliance and arduous work, and the broadcasting began on Dec. 30, 1940. Yan'an Xinhua Broadcasting Station was established.

1940年3月，周恩来、任弼时等由莫斯科返回延安，边区军民举行欢迎大会。主席台左起：李富春、毛泽东、周恩来、任弼时、蔡畅、陈琼英。

Photo of a Welcome Meeting for Zhou Enlai and Ren Bihou etc. Returning from Moscow in March of 1940, from the left: Li Fuchun, Mao Zedong, Zhou Enlai, Ren Bihou, Cai Chuang and Chen Zongying.

Yan'an Movie Studio  
Yuan Muzhi, Wu Yinxian, Xu Xiaoshui and Li Su. Other movie  
movie came gradually. In 1940, Film Projection Team of the Ge  
the Movie Studio.

Yan'an Movie Studio was the first movie-making organizati

1977年春，吴印咸与荷兰著名导演伊文思在海南岛合影。  
1938年伊文思赠送的摄影机由吴印咸带回延安。

Photo of Wu Yinxian and Yiwensi, the World-known Netherland  
Director in spring of 1977. In 1938, Yi Wensi donated a camera.



In 1938, a  
camera  
donated by  
the Dutch  
Documentary  
Film-maker  
Joris Ivens was  
brought to  
Yan'an



# 1. THE PRC'S TECHNOLOGICAL FOUNDATIONS: HISTORICAL FLASHBACKS

- Internationalism & indigenous innovations are both the cornerstones of the PRC's technological developments
- China's independent industrial system owed much to massive international technological transfers from the USSR via the 156 major projects – first and only time in human history, in the internationalist spirit

# Time to Industrialize: UK- 50, Germany-35; Soviet-20, China-5 – Sharing of Technological Infrastructure



- Europe played a role in technology transfers to the PRC – e.g. PAL Color TV system
- The PRC state also owes a historical debt to the hopes of oppressed peoples behind the “Third World” project (V. Prashad, 2007) for its place in the post-WWII global order

## 2. THE TWISTED PATH OF REFORM-ERA TECHNOLOGICAL POLITICS – “TWO WAY STRUGGLES”

- Misled by the “Asian Tigers” experience
- The myth of “comparative advantage”
- Misplaced hope in “market for technology”
- US restrictions on high-tech exports to China

First compelled  
by the USSR's  
withdrawal of  
technical experts,  
then being  
propelled by the  
US toward  
technological  
independence

- The “shock and awe” of the First Gulf War
- The 1993 Yinhe Incident --Beidou System
- Snowden's revelations
- The 2018 ZTE Incident

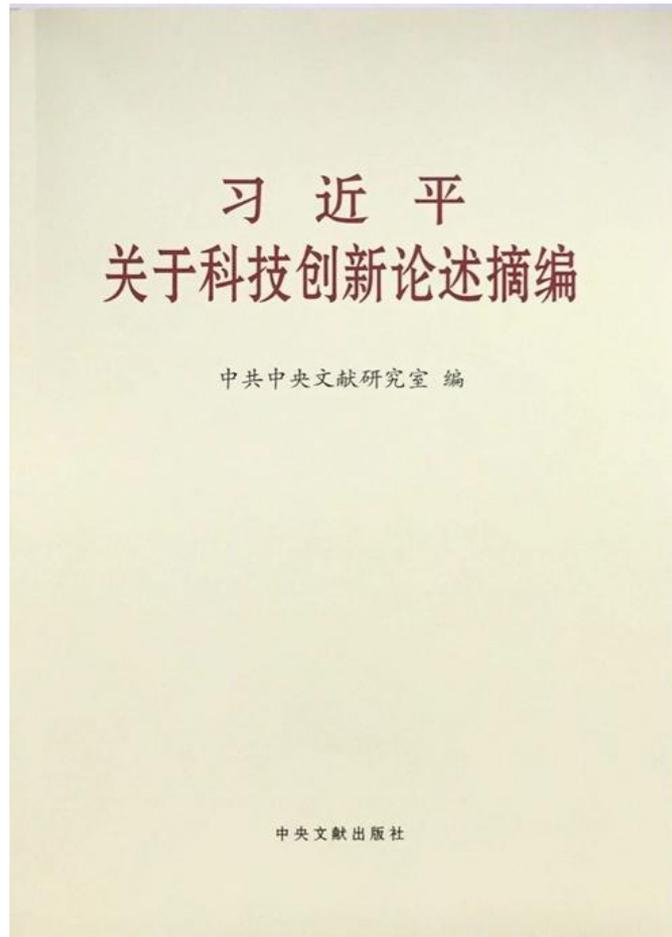
# A LONG MARCH

2005-6

16th CPC Congress Report: “encourages technological innovation, and the mastery of core technologies and ownership of intellectual property rights in key areas and several cutting-edge scientific and technological developments”

2002

- CPC Proposals on 11th 5-Year Plan;
- National Informatization Development Strategy (2006–2020)
- Outline of a National Plan for Medium- to Long-Term Scientific and Technological Development (Year 2006–2020): using 15 years to master a number of core technologies in the information industries central to national competitiveness



- boosted by Xi since 2012
- leading group on Internet Security and Informatization
- 188 paragraphs on technological autonomy & innovation
- Turning upside down the logic of “better buying than making, better renting than buying”.

2012-5

# Pivotal Moments in Chinese Claim of Cyber Sovereignty

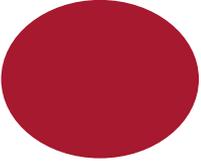
## 2014-5

- Xi Speeches at WIC: Respect cyber sovereignty, right of individual countries to independently choose their own path of network development, model of network regulation and cyberspace public policies, and participate in international cyberspace governance on an equal footing

# Culminating in “Made in China 2025”

2015

- 10 strategically important tech sectors, including IT, biotech, robotics, aerospace and clean-energy vehicles.
- 3 key technologies for digital supremacy: chips, quantum computing, AI



# INTERNET AS KEY TO NATIONAL REVIVAL & PARTY SURVIVAL – DOMESTIC CONCERNS

## MUST NOT FALL

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中华民族决不能因互联网跌倒在复兴的门槛上/”The Chinese nation must not fall at the doorsteps of its rejuvenation because of the Internet.”

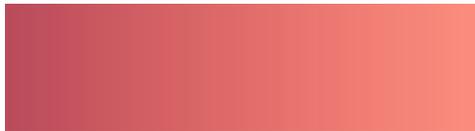
# 2016

我国有七亿多网民，过不了互联网这一关，共产党就过不了长期执政这一关/”with more than 7 million netizens, the CPC must pass the test of the Internet or it will not be able to govern for the long run.”

## MUST PASS

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- Along with ICT makers & service providers, state protection and flexible use of VC engendered Chinese Internet giants(“BATJ”), forming a potential **China-centered global Internet**
- Nov. 2017 State Action Plan to develop a world-leading **IPV6-based Next Generation Internet** by 2025 to facilitate IOT, AI, cloud computing, e-commerce, etc.



# A Strong Digital Dimension of the BRI

- Digital Silk Road consisting of fiber-optic cables, mobile networks, satellite relay stations, data centers, and smart cities across Euro-Asian, including the **BRI Space Information Corridor** centering on the Beidou Navigation Satellite System to provide GPS alternative to BRI countries in 2018, global coverage around 2020.

### 3. THE TRANSCULTURAL POLITICAL ECONOMY OF COMMUNICATION AS A THEORETICAL FRAMEWORK

- Geo-political economy of uneven and combined development (R. Desai, 2014)
- “Transculturation” coined by Fernando Ortiz in “Counterpoint: Tobacco and Sugar (1947/1995)
- When cultures encounter each other, each of the parties invariably exerts a strong influence on the other(s) (p. 100).
- Both locked in a “painful process of transculturation”
- Loss or uprooting of a previous culture, but also the consequent creation of new cultural phenomena (p. 102-103)

# Part II

## China's Technological Politics in a Close-up Look

- The terms I used to describe China's drive for digital supremacy a decade ago (Zhao, 2010, CJOC) remain relevant: **Hopes, Follies; Uncertainties**
- More so today than before – with even a **mysterious turn**

Just as 5G showcased China's ability to "catch up", there is no doubt about the Chinese state's ability in mobilizing state and private capital in pursuing digital supremacy— this is a Leninist state with a strong political will

The case of AI deployment in a 2017 plan:

division of market by four leading companies to turn China into AI innovation center by 2030:

- Baidu -- Auto Driving
- Alibaba -- Smart Cities
- Tencent – Medical Imagery
- iFLYTEK – Voice Recognition

Private firms constituted as "national champions"

However, this is  
not a smooth  
process:

(1)

Technological  
path dependency,  
short-term  
business interest,  
and rivalry  
between different  
units of Chinese  
capital

The case of 5G  
standards: Lenovo vs  
Huawei/or with Huawei?

- Lenovo and Motorola initially for LDPC
- Huawei for Polar
- Lenovo voted for Polar on the 3<sup>rd</sup> round
- Blind techno-nationalist vs “rules of game” in global standard-setting

(2)

Transnational  
business and  
local state  
alliances  
against the will  
of the central  
state –common  
in many other  
fields

- The case of unauthorized use of “Chinese Government version of Win10” in Shanghai and Shandong, provided by C&M Information Technologies (JV between a Chinese firm & Microsoft)

(3) From corruption at the S&T community to corruption, even treason at the highest level

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- The “Han-chip scandal” in 2003 and its long-term negative impact
- The Feb. 2018 exposure of Lu Wei, head of state network and information administration for massive corruption, and “selective implementation” of the state’s network strategies

(4) Opaque & complex nature of state-research-business & transnational-comprador alliances

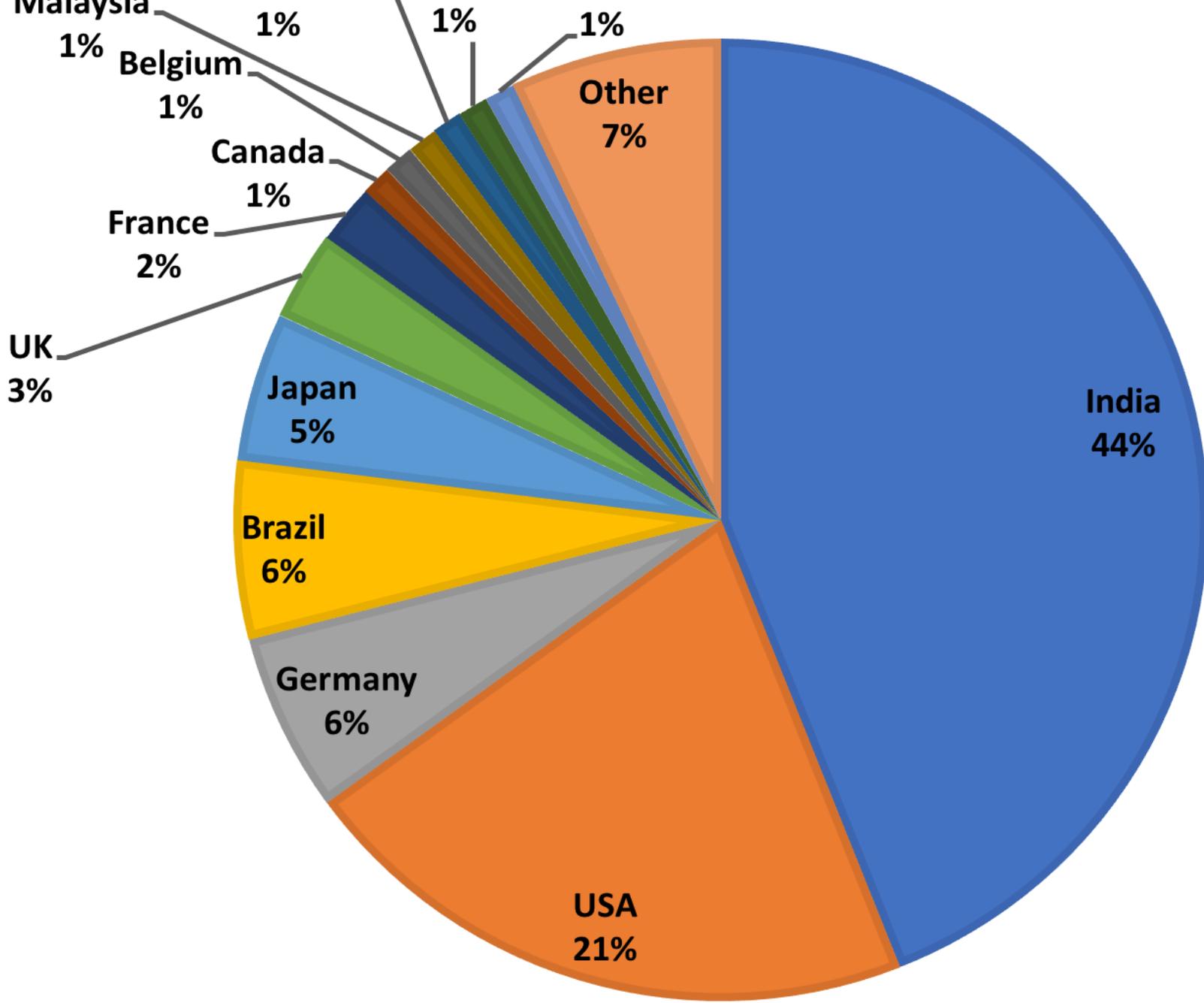
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- The mysterious case of IPV6/CNGI v IPV9:
- Nov. 2017 grand state plan for IPV6 deployment – No. 1 country by 2025 in network size, user size and data flow
- Feb. 2018, exposure of Lu Wei's corruption

- 2017-2018, circulation of articles accusing US-allied interests (top-level scientists, media and pop science writers) for misleading the state to invest in IPV6 for more than 10 years (smelling conspiracy)



- IPV9: “Method of using whole digital code to assign address for computer” (TUBA/IETF 1347-1992)
- Claim of registered patents in the US by Dec. 2011
- MIIT approval of four IPV9 standards in July 2016
- Xie Jianping (IPV9) v. Wu Jianping (IPV6)

- Has a better wheel been invented?
- Did transnational US-Chinese interests suppress it?
- No answer, but there is the gap:
  - Aug. 2003: Chinese initiation of IPV6-based CNGI by 8 ministries
  - Dec. 2004: Establishment of CNGI-CERNET 2 connecting 20 major cities with 25 nodal points
  - Over 100 research and application units, 10,000 researchers
  - Nov. 2017 state plan to have 200 million users by end 2018
  - BUT NOTE** China's absence in the following maps on the state of global IPV6 deployment:



% of Internet users in various states with high level of deployment (Internet Society, 2018)





A true mystery for me, but but three things are clear:

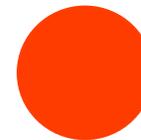
(1) New Initiative at state-level coordination: The State S&T Leadership Group (7/28, 2018)



Responsible for state S&T strategy, major S&T Tasks & Projects



Coordinating ministries and localities involving heads of 14 departments



Led by Premier Li Keqiang and Vice-Premier Liu He

Source: computerworld

## (2) Important role of public opinion and popular involvement

- “Industry Party”
- Gross roots military affairs fans/webzines
- Popular media
- Even taxi drivers talked about “long & short codes”
- Past examples of public influence/and intra-state, intra-research community struggles

(3) Collective memories of "self-reliance" / technological independence have been revived at the popular level -- even the idea of international socialism!

“Marching Forward on the Footsteps of Soviet Old Big Brother”:

- Only now we realized Soviet then was truly practicing socialism
- No matter how chauvinistic it is, the goal was still communism; our Old Big Brother, our best teacher
- Old Big Brother, may you rest in peace; we will work hard, and pay tribute to you at your tomb with marinated eagle! “当年苏联到底对中国帮助有多大？砸钱近百亿·核心技术直接白送”

# Part III

## Implications for the New Global Order

- In a Sept/Oct. 2018 Foreign Affairs article, Adam Segal proclaimed the “End of the Open Internet” and “the Future is Chinese”
- China is likely to win the battle for technological supremacy in the digital age, leading to a two-camp global digital infrastructure
- Along with Russia and other countries, China is also likely to increase the role of UN in Internet governance

- However, it is partial to juxtapose the rivalry as one between openness and closure, freedom and control, innovator and copycat
- Geopolitically the US needs to manage its imperial decline in a peaceful way by transforming digital capitalism and truly democratizing itself from inside out; technologically, the US may learn from China: “if you compare WeChat with Facebook Messenger or WhatsApp, if you compare Weibo with Twitter, if you compare Alipay with Apple Pay, China is leaps and bounds ahead of the US” (Kai-Fu Lee, cited by Economist/April 16, 2018)

- The rest of the world faces a choice between “a duopoly between the US and China”: US technology companies will dominate the west and perhaps Japan, while Chinese startups – which more commonly attempt to partner with local players by supplying technology and capital – will establish themselves in the developing world (Economist, April 16, 2018)
- It is not enough to observe what China or the US does, how the rest of the world interprets and responds to China and the US is equally important;
- Europe and the rest of the world can take advantage of playing one against the other (to get a better deal), but do not have to be caught in the duopoly – they can be powerful “third force”

- On the one hand, for a Party that led the founding of a state in the caves of Yan'an with primitive technologies, boycott and blockage did not work in the past, nor will it in the future
- On the other hand, while China is unlikely to repeat what the Soviet did for it in terms of industrializing developing countries, it is eager to export its technology and capital/including sharing its R&D facilities with BRI countries -- super advanced R&D centers are being built

- It is upon developing countries to demand better terms from China
- This, in turn, depends on the play out of domestic class, regional, ethnic, religious politics in these countries that favor the democratization of state and society

- For the first time in human history, a backward non-Western country with non-colonialist legacies is developing the most advanced means of production on the shoulders of the USSR & US led West and has the potential to deploy it on a global scale
- How the rest of the world understand this and respond to it, will shape new global order – we have an unprecedented opportunity to reshape the world for better

- As we commemorate the 200<sup>th</sup> birthday of Marx, there is an irony that the return of the nation-state as a vector of power has brought the world back closer not to Marx, who envisioned international working class solidarity transcending capitalism, but to Adam Smith, with his focus on the “wealth of nations.”
- Mainstream strategic analysis of the Foreign Affairs persuasion on how the US should deal with China’s is not only dangerous, but also doomed.

- Rather, critical scholars such as Arrighi (2007) and Desai (2014) who have refocused on the centrality of the nation-state in the analysis of capitalism have recounted how Smith regretted European colonialism's plundering and subordination of the native populations of both the "East and West Indies," and how he even envisioned a time when:

- “the natives of those countries may grow stronger, or those of Europe may grow weaker, and the inhabitants of all the different quarters of the world may arrive at that equality of courage and force which, by **inspiring mutual fear, can alone overawe the injustice of independent nations into some sort of respect for the rights of one another**” (Smith, 1776/1961, p. 141, cited in Arrighi, 2007, p. 3)

- In *Adam Smith in Beijing*, Arrighi (2007, 389) hoped for a reorientation of the Chinese developmental path on the base of popular democratic participation that will enable China to be “in a position to contribute to the emergence of a commonwealth of civilizations truly respectful of cultural differences”
- We need to work together to bring about such a new global order.

谢谢！  
THANK YOU !