



Automation, AI And New Industrial Strategies: The Chinese Perspective

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BACKGROUND



The US-China trade war:

- The Section 301 Investigation on China
- The ZTE dispute
- The real target: “Made in China 2025” economic restructuring plan



AI as the next frontier of the “technological Cold War.”



What are the features and the geopolitical-economic implications of the rise of China’s AI industry?

CHINA'S ICT DEVELOPMENT



The military-oriented, self-reliant model of development in the Mao era.

- “Techno-nationalism with Chinese characteristics” was embraced as the overarching developmental doctrine in the Cold War context.
- The significance of technologies impinged much on “industrial competitiveness, international standing, and economic power” (Feigenbaum, 2003, p.29).
- Priorities were placed more on military-related technologies and strategic weapon programs.



The export-oriented, FDI-driven model of ICT development in the post-Mao reform.

- Shifted away from military-oriented heavy industry to consumer, labor-intensive light industry and consumer goods production.
- “The world factory”: FDI dependent, labor exploitation, low value-added.



Economic restructuring: innovation-driven model of development

CHINA'S ICT DEVELOPMENT

Policy shift toward an innovation-driven model of development

2015.03



Internet Plus

2015.05



Made in China 2025

2016.04



Robotics Industry Development Plan (2016-2020)

2017.07



The Development Plan on the New Generation of Artificial Intelligence

2017.10



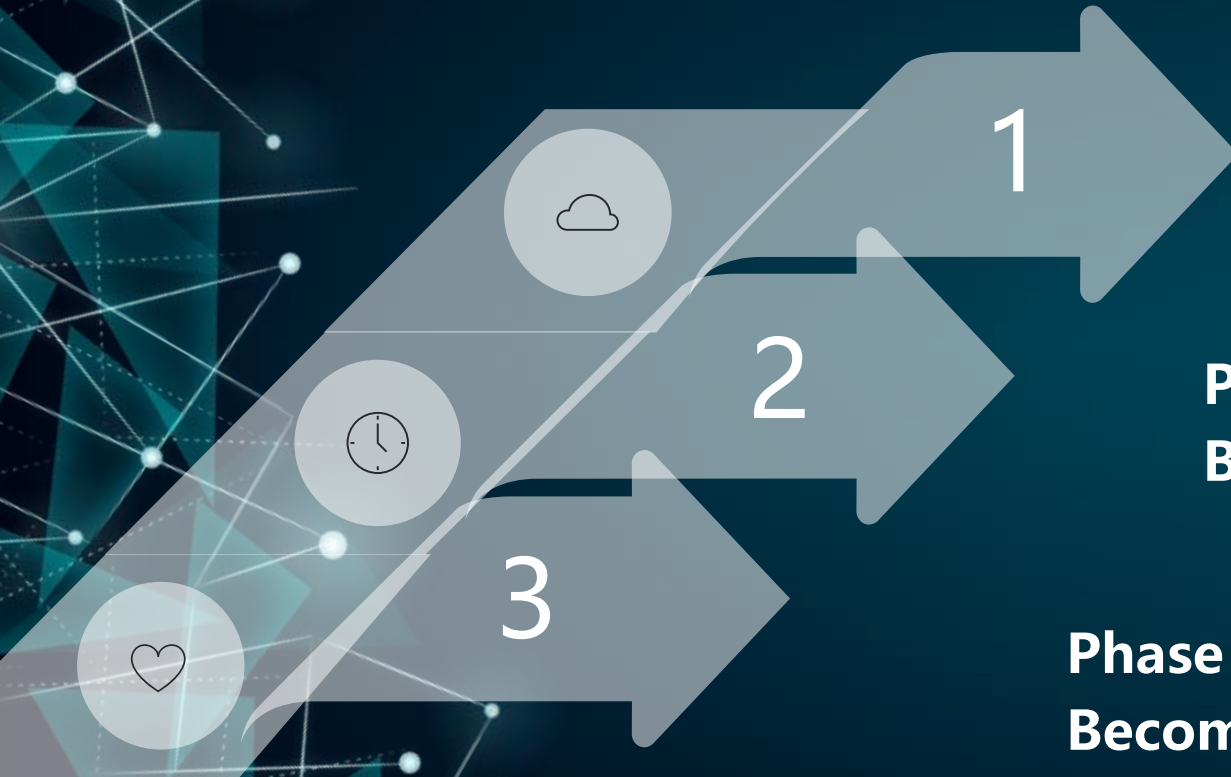
AI development was first written in the report of the 19th CPC National Congress

2017.12



Three-Year Action Plan for Promoting Development of a New Generation Artificial Intelligence Industry (2018–2020)

Strategic Phases of China's AI Development



Phase 1 :

Catching up to the most advanced AI powers

Phase 2 :

Becoming one of the world leaders in AI

Phase 3 :

Becoming an innovation center in AI

CHINA'S AI DEVELOPMENT

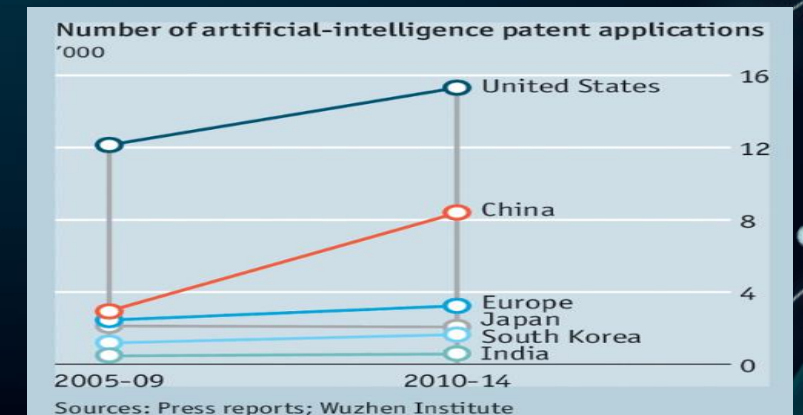
1. R&D

Research output

From 1997 to 2017, China has the largest number of AI published paper, accounting for 27.68% of the world's published scholarly articles.

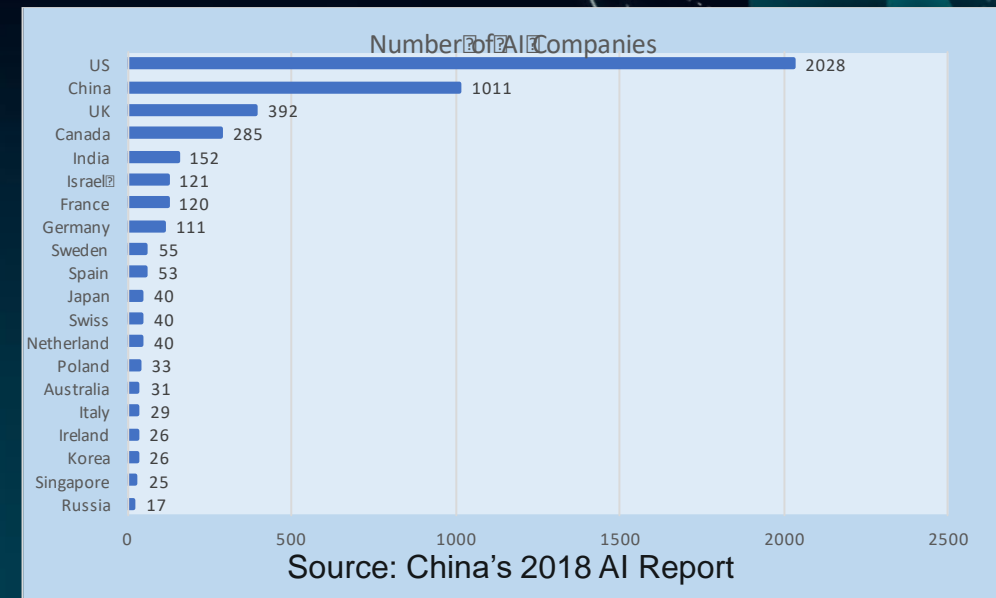
AI talent

China is home to 18,232 AI technology research talents, accounting for 8.9% of the world's total.



CHINA'S AI DEVELOPMENT

2. Industrial Development



Number of AI companies

China has 1011 AI companies, second to US.

AI funding

China dominated global AI funding in 2017, accounting for 48% of global equity funding. Speculation or innovation?



National Champions

Autonomous Driving



Smart Cities

The Big Five National
Open AI Innovation
Platforms



Healthcare



Speech Recognition

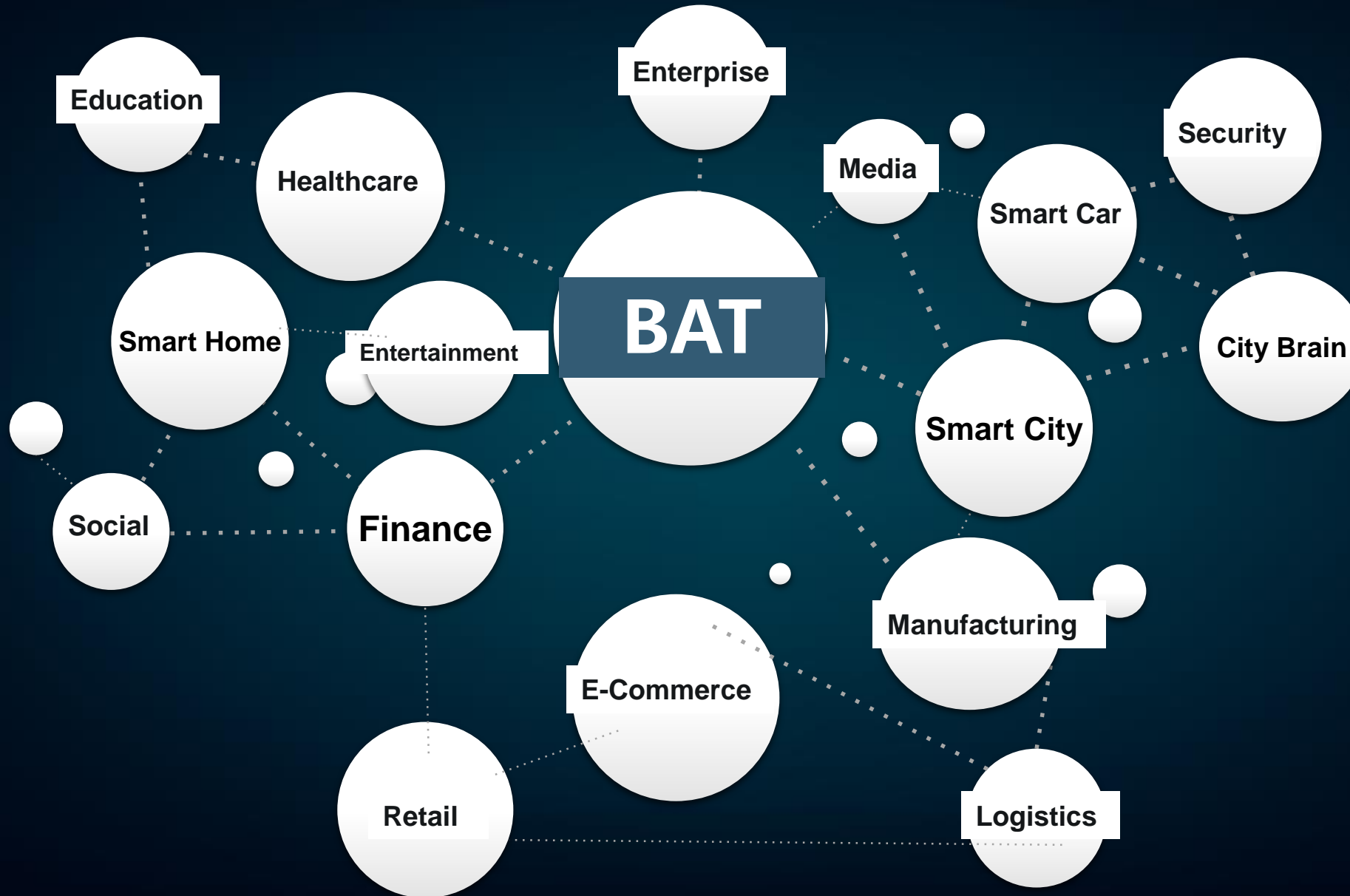


Intelligent Vision

Table 1. BAT Investment in AI

	<i>Baidu</i>	<i>Alibaba</i>	<i>Tencent</i>
Technology	Baidu Cloud Baidu Brain	iDST/ET Brain A.I.Labs/AliGenie	Youtu Lab AI Lab/WeChat Lab
Implementation	Baidu Products Apollo DuerOS	Ali Products Smart City Brain AliGenie OS/Voice	Tencent Products AI Miying Xiaowei
Investment	NIO/Velodyne/xPerception KIT.T.AI/SoundAI	DiDi DeePhi Tech/Cambricon FACE++	DiDi/Ola/Uber NIO/Tesla Grail/Practo ZestFinance

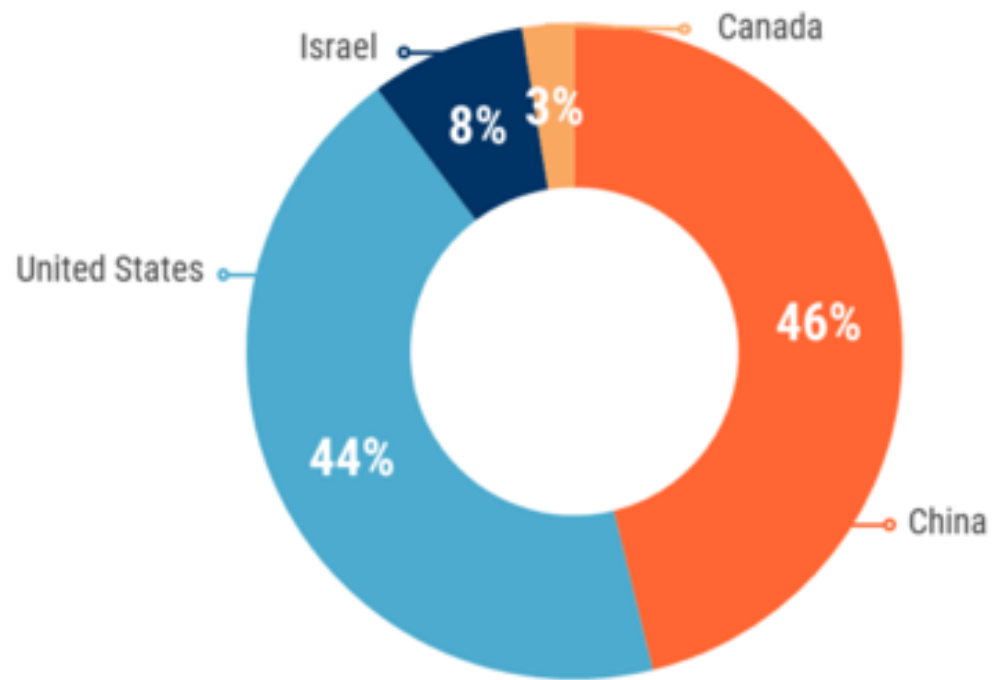
The AI-Powered Commodity Chain?



BAT Global Investment: speculation or innovation?

Baidu, Alibaba, Tencent eye global AI startups

BAT-backed equity deal share by country, 2014 – 2018 (as of 4/20/18)



Source: cbinsights.com

 CBINSIGHTS

IMPLICATIONS

- **China's AI development as a mix of techno-nationalism and capitalistic logic**
 - Chinese high-tech companies' pursuit of progress "on the technological front" is congruent with China's techno-nationalist strategy to strike the "global strategic balance" and to reposition itself in global digital capitalism.
 - The disruptive logic of capital accumulation.

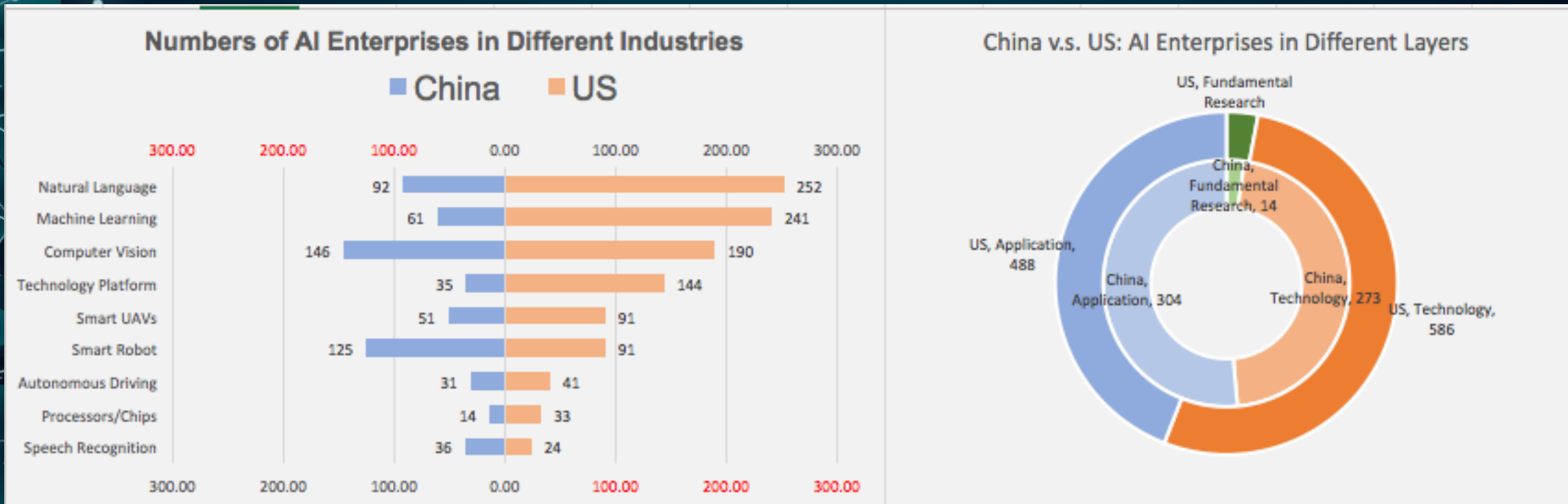
IMPLICATIONS

➤ China's competitive advantages?

- China's strong industrial base not only generates huge volumes of data for AI application, but also provides a base for the AI technology adoption in the traditional industries.
- Strong state capacity: the capacity to implement its priority policies, to mobilize nationwide resources and social participation, to control strategic industries and to coordinate diverse interests of indigenous business.

IMPLICATIONS

➤ Will China win the AI race with the US?



Source: Tencent AI Report

IMPLICATIONS

➤ **Inequality: Will AI widen the divisions in Chinese society?**

Income inequality, gender inequality, and inequality of regional development



Source: China's AI Report 2018

IMPLICATIONS

➤ A path-breaking model ahead?

- Self-reliant, innovation-oriented model of development and dependence on local alternatives.
- Not a zero-sum game, but toward a multi-polar order of development.

IMPLICATIONS

- “In the past we tightened our belts, gritted our teeth, and built the two [atomic and hydrogen] bombs and a satellite... In the next step of tackling technology, we must cast aside illusions and rely on ourselves.”
- “Unilateralism and trade protectionism are forcing China to take a path of self-reliance, which is not a bad thing...It is becoming increasingly difficult to gain access to leading technologies and key technologies internationally, and China will ultimately rely on itself.”

-----*Chinese President Xi Jinping*



Thank You!
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