



MADE IN CHINA 2025

Backgrounder 02



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prepared by :

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Summary

- Made in China 2025 aims to localize and indigenize high-tech industries, making China a manufacturing superpower by 2049.
- Reduce over-dependence on foreign firms, and increase the competitiveness of domestic firms through state-sponsored investments and funds.
- The West has been critical of China's "Made in China 2025" as it leads to global market-distorting, stealing intellectual property, poaching talent, and more.

Introduction

In 2015, the State Council announced its plans to make China a leading power-house in high-tech industries and become a manufacturing superpower by 2049. Called the "Made in China 2025" (MIC) initiative, the State Council wanted to create local alternatives to foreign goods that it is heavily reliant on, reducing its dependence on foreign companies and making itself a global competitor to Western dominance over technologically advanced and demanding industries. Due to China's position in global markets, MIC 2025 will have huge implications for the entire world. However, it is important to know; what exactly is MIC 2025? What are its goals and how does it plan on achieving those goals? And more importantly, how has the global community reacted to MIC 2025?

What is Made in China 2025?

On May 19th, 2015, the State Council launched the "Made in China" plan to develop and transform China's manufacturing sector. Through a "three-step" strategy, the State Council aims to make China the leading manufacturing power by 2049. The "three-step" strategy is:

1. Making China a strong manufacturing country by 2025;
2. Competing with other manufacturing rivals by 2035;

3. Transforming China into a manufacturing superpower by 2049.

Essentially, MIC25 is a 10-year plan that identifies nine areas in which to develop China's manufacturing sector. The plan will emphasize on improving manufacturing innovation, integrating technology and industry, strengthening the industrial base, fostering Chinese brands, enforcing green manufacturing, promoting breakthroughs in ten key sectors, advancing restructuring of the manufacturing sector; promoting service-oriented manufacturing and manufacturing-related service industries, and internationalizing manufacturing.

"Made in China" 2025 targets ten strategic, high-tech industries that are electric cars, information technology, telecommunications, artificial intelligence, advanced robotics, agricultural technology, aerospace engineering, maritime engineering, bio-medicine, and rail infrastructure.

By revolutionizing these industries, China wants to capture the global market share, become an important part of the global supply chain, challenge the United States' global technological leadership, and achieve the "Fourth Industrial Revolution". In 2013, President Xi Jinping highlighted that the Chinese technological base needs to "catch up and surpass" the West, centring it around national rejuvenation and regaining Chinese glory. Xi in his speech at the tenth BRICS summit in 2018, highlighted a blueprint that would help China reach the fourth industrial revolution allowing China to overtake the West and bypass legacy systems. Through its fourth industrial revolution and surpassing the West, China aims to reduce reliance on Western technology, while promoting its own alternative high-quality technology to the world.

China's Made in China initiative grew from its 2006 "Strategic Emerging Industries" (SEI) plan. China identified seven SEIs that included Energy efficient and environmental technologies, next-generation information technology (IT), biotechnology, high-end equipment manufacturing, new energy, new materials,

and new-energy vehicles (NEVs) that would serve as the backbone for China’s industrial modernization and development. China introduced this plan in an attempt to shift Chinese industries away from low-skilled labour work to a more advanced, developed, and technologically driven economy. In comparison to Made in China 2025, Strategic Emerging Industries was much smaller in scale and scope.

Goals of Made in China 2025

Expanding on its “three-step” strategy, China has deployed a multi-step process that would help achieve its final objective of becoming a manufacturing powerhouse by 2049. It aims to localize research and development and increase local dominance and stakeholder ownership over global supply chains. MIC 2025 aims at reducing and then ending reliance (see fig:1) on foreign manufacturers for technology.

By increasing its local footprint in the technological market and advancing domestic production, MIC 2025 aims at providing high-quality alternatives to Western/foreign technology. Through localization, indigenization, and substitution (see fig: 1), China will be able to capture domestic and international market shares across the ten strategic and high-tech industries.

As highlighted in MIC 2025, the “goal of raising domestic content of core components and materials (see fig:1) to 40 per cent by 2020 and 70 per cent by 2025”. Achieving this goal will lead to self-sufficiency, however, it is important to note that such goals are in direct violation of World Trade Organisation rules.

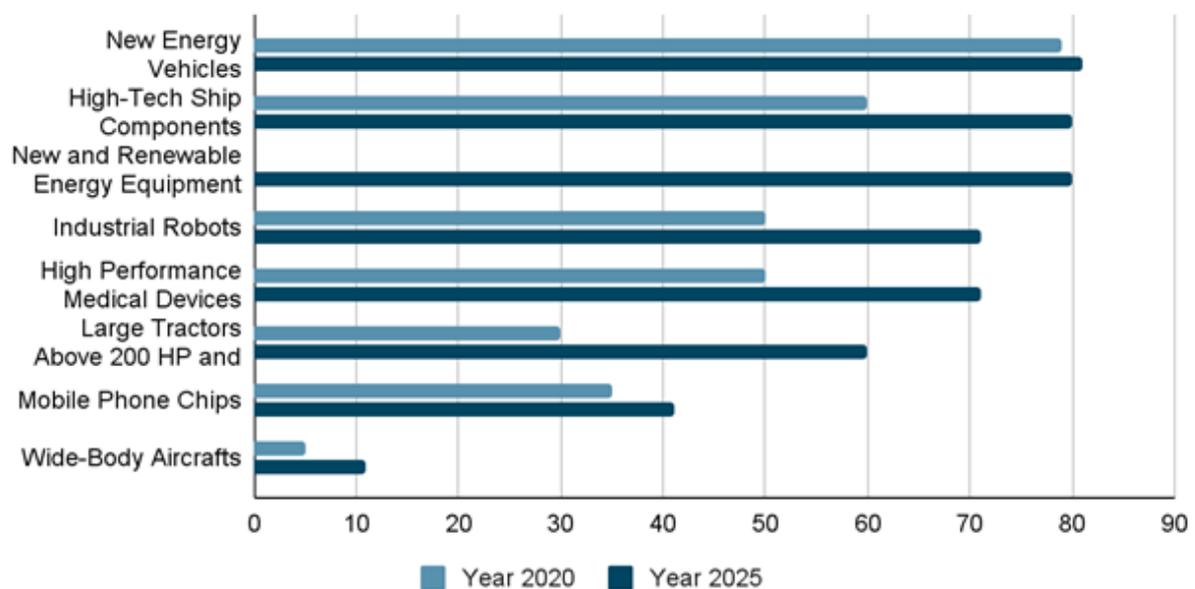
MIC 2025 also highlights the need to develop brand awareness of strategic industries, while meeting critical green targets. (see table:1) Combatting climate change has been central to China’s environmental policies, and creating an internationally attractive brand will lead to expansion in foreign markets and increase competitiveness.

Approaches to Achieving MIC 2025

With a focus given to localized production, MIC 2025 gives preferential treatment to domestic firms and companies; drafting and enforcing policies that promote domestic and international competitiveness, and support their acquisition of foreign technology. China has directed banks to provide financial support to domestic firms and assist them in making competitive indigenous brands by increasing export credit insurance. Moreover, these industries and companies also receive subsidies from central and local governments, reducing the costs of products.

Figure 1: Made in China 2025 Aims at Substitution

Semi official targets for the domestic market share of Chinese products (in per cent)



Source: Expert Commission for the Construction of a Manufacturing Superpower

These subsidies, while spread across various industries, have the most support and impact in industries with little to no foreign presence, encouraging companies to buy from domestic firms.

China has also established state-funded and quasi-government funds that invest in research and development of indigenous technology. Sources have reported that China has set up nearly 800 state-guided funds, valued at RMB 2.2 trillion, that would invest and support in industries and companies tied closely to MIC 2025. China will also provide Chinese companies with subsidized prices, increasing domestic competition while pushing them for a greater international footprint. (see table: 1) For example, China buys more than half of the semi-conductors sold globally. To promote domestic production of home-grown semiconductors and processing chips and reduce international dependence, Chinese news media reported that the government would invest more than 1 trillion yuan (\$161 billion) in developing indigenous chips.

The Ministry of Agriculture and the National Development and Reform Commission (NDRC) released an action plan in 2016 in accordance with MIC 2025. The action plan highlighted the need to have self-sufficiency for critical parts, increasing the rate to 50 per cent by 2020 and 70 per cent by 2025. China provided significant funding to invest in R&D, while also providing subsidies to agricultural machinery manufacturers. The action plan called for the creation of multiple internationally competitive, famous brands that manufacture critical parts and components.

Apart from financial assistance, China is also introducing multiple policies and practices aimed at elevating domestic companies. These policies and practices restrict foreign companies' access to Chinese markets while allowing Chinese firms better access to foreign markets, mainly to foreign technology. China also requires banks to use domestic intellectual property and encryption to standardize Chinese technology. Standardization of tests and certificate systems has also been introduced to ensure Chinese

companies produce high-quality products and secure domestic and international competition.

China has also invested heavily in education and training facilities to create the right pool of talent for MIC 2025. The number of Chinese engineering students graduating from universities has quadrupled between 2002 and 2014, coming in second right behind the United States. Moreover, China also encourages Chinese expatriates to return and work in China and hire field experts from foreign countries. Chinese technology firms such as TikTok, Alibaba, and more often partner their American-based R&D centres with US universities to hire and work with foreign talent.

International Reaction to Made in China 2025

The West, particularly the United States, has been openly critical of China's attempts at becoming a major manufacturing and technologically advanced country. Chinese companies and firms have invested large sums into American start-ups working on new technologies with potential military applications. These technologies include work in rocket engines for spacecraft, sensors for navy ships, flexible screen printers used in plane cockpits, and more. The United States Department of Defense has reported that the Chinese government is pushing for firms to invest in sensitive start-ups to gain a strategic, technological edge over the US.

The report also highlighted the need to increase restrictions and exercise further control over investments by foreign firms into American markets, as the investment also leads to the transfer of some of the most promising technologies being worked on by these start-ups. Moreover, to dodge the restrictions already in place such as the Committee on Foreign Investment in the United States, a governmental oversight agency, Chinese firms make "unofficial" investments.

Chinese firms' increasing presence in American markets is an issue because there is a growing blurry line between military consumer technology and sophisticated commercial technology. Even in social media companies, facial recognition and image detection are increasingly used and developed techno-

Table 1: Key Manufacturing Indicators for 2020 and 2025

Category	Indicators	2015	2020	2025
Innovation Capability	R&D cost of manufacturing industry (%)	0.95	1.26	1.68
	Number of inventions per CNY 100 million total revenue	0.44	0.7	1.1
Quality and Value	Quality competitiveness index	83.5	84.5	85.5
	Growth of Industrial Value Added since 2015 (%)	-	2	4
	Annual productivity growth of labor (%)	-	7.5	6.5
IT and Industry Integration	Broadband penetration (%)	50	70	82
	Usage of digital design tools in R&D (penetration %)	58	72	84
	Key production processes and use of numerical control machines (penetration %)	33	50	64
Green Industry	Industrial energy consumption per unit reduction from 2015 (%)	-	18	34
	Carbon dioxide emissions intensity reduction from 2015	-	22	40
	Water usage intensity reduction from 2015	-	23	41
	Solid industrial waste being reutilized	65	73	79

Source: State Council, http://www.gov.cn/zhengce/content/2015-05/19/content_9784.htm

-logies that have military and state applications used to identify and track threats to a nation’s security.

China has also targeted field experts, scientists, and technology developers through its “Thousand Talents” program. The program attracts and recruits top experts from across the world to help develop its ultimate goal of becoming a technological and manufacturing powerhouse by 2050. However, intelligence agencies from the US have raised concerns over theft of intellectual property and corporate espionage as a consequence of the “Thousand Talents” program.

A common criticism that continues with the Made in China 2025 initiative is the restricted access to Chinese markets foreign companies face while Chinese firms and companies have unlimited access to foreign markets. The only way foreign companies can have access to Chinese markets is through a Chinese firm, which often requires signing over rights to intellectual property and transferring of data.

With an ever-growing Chinese economy that rivals the United States, coupled with a growing imbalance of trade, increasing Chinese investments in exports into

the US, and as the US states: “China’s unfair trade policies, domestic safeguards against foreign competition, and exploiting WTO membership” led to the trade war between the US and China. On March 23, 2018, President Donald Trump launched a trade war against China by signing the “Presidential Memorandum Targeting China's Economic Aggression”. The US, along with other Western countries, imposed heavy tariffs on key Chinese industries. For US authorities, it fears that key industries, such as the cobalt industry, could fall under China’s control. China is considered to be US’s geopolitical rival.

China’s top-down approach has also seen criticism from Europe. The German Council of Economic Experts has been vocal in its criticism of the state playing such a huge role in a free-market economy, highlighting that even private companies are assisted and directed by the state in the background. Moreover, China was labelled as an economic competitor and rival in 2019 by the European Commission in the “2019 EU-China-A Strategic Outlook”. Pressure from President Donald Trump also forced the EU to take a tougher approach to China. Furthermore, the EU also released a report stating that China is distorting the market through cheap capital and state-owned capital. France and Germany began tightening their hold over acquisitions by foreigners, allowing them to block deals with as little as 15% of voting rights in a local company.

China’s Response to Criticisms of MIC 2025:

With global criticism of MIC 2025, increased tariffs and sustained pressure from the West; China has signalled that it would make changes to its MIC 2025 to accommodate global needs. Announced at the G20 Summit in 2018, Chinese authorities announced that the new version of MIC 2025 will encourage foreign investment. Additionally, it was also reported that China will encourage fair competition between private, public, and foreign companies, however, it will work to provide a level playing field to everyone by being “competitively neutral”. This would pander to global

criticisms of MIC 2025, while also pushing domestic companies towards international competitiveness.

Moreover, any references to MIC 2025 were removed in July 2018, either signaling a shift away from the targets set by MIC 2025 or concealing China’s targets, goals and objectives from the world. As a way to showcase the former, China has strengthened its IP protection laws, establishing a national-level court that handles IP appeals, managing IP-related disputes across the country and increasing protection and redressal for foreign companies. China also reformed the procedures and bureaucratic red-tape required to start a new business, cutting down the days required from "22.9 days to nine days."

Conclusion:

Made in China 2025 is an ambitious and significant initiative that aims to push Chinese technological and strategic industries towards self sufficiency, challenging and surpassing the Western technological dominance. Through state funding, restricted access to domestic markets, recruiting foreign field experts and setting specific targets and objectives, China is pushing to reach its goal of becoming a manufacturing superpower by 2049, the same year it plans to complete its national rejuvenation.

However, the West's response to its initiative has forced China to rethink its approach to MIC 2025. Its current approach led to the US-China trade war, the effects of which are still felt in a post-pandemic world. While it seems like China is drawing back on some of its measures, it is still unclear whether the CCP plans to follow through with the changes it plans to make to accommodate global needs. Due to the opaqueness of the CCP, only time will tell how MIC 2025 shapes China's technological future.

About the Author

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