

Manufacturing Development in the Government Report and the 14th Five-Year Plan Policy Update | March 2021

Former Minister Miao Wei from the Ministry of Industry and Information Technology (MIIT) gave a strong statement during this year's "two sessions" - the Chinese People's Political Consultative Conference (CPPCC) and the National People's Congress (NPC). During his speech he stated that China's manufacturing industry development is in the "third-tier" of a four-tier global manufacturing hierarchy. The current position is at least 30 years away from achieving the goal of becoming "a strong manufacturing power"¹. At this year's NPC meeting, the main topic was the upcoming 14th Five Year Plan (FYP) from 2021-2025.

Major constraints in the development of the manufacturing industry in China

The share of manufacturing industry in China's GDP has continued to decline (from a peak of 32.45% in 2016 to 27.17% in 2019). Maintaining the manufacturing proportion in GDP stable was mentioned for the first time and taken as one of the focuses in the 14th Five-Year Plan (FYP)².

Minister Miao Wei has identified the problems and challenges as follows in his speech:

- **Imperfect market mechanisms**
The pricing mechanisms often do not work properly. Due to implicit market restrictions the price often does not reflect the supply and demand in the market. Also the tax burden on companies is still heavy.
- **Weakness of innovation capacity**
The innovation resources are not efficiently allocated, the integration between industrial application and research and development (R&D) still needs promoting. A technology innovation system with companies at core shall be established. The key generic technologies in the supply chain are burdened with structural flaws.³
- **Shortage of talent**
The development of qualified personnel needs to catch up with the high-quality development of the manufacturing industry.

Strengthening core competences

In the FYP, the government has given the following answers on how to further develop manufacturing. This Plan shows the national attention to the manufacturing sector as well as the strategic development direction in the next five years⁴.

¹ News article on the speech from Minister Miao Wei (CHN): http://www.xinhuanet.com/politics/2021lh/2021-03/07/c_1211054597.htm

² The full name of the 14th Five-Year Plan is "14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives Through 2035"

³ See our Policy Update on "Science and R&D in the Government Report and the 14th Five-Year Plan"

⁴ The 14th Five Year Plan (CHN): http://www.xinhuanet.com/2021-03/13/c_1127205564.htm

The Government work report (ENG): <http://www.xinhuanet.com/english/download/2021-3-14/314fulltext.pdf>

Strengthen the construction of basic competences

- Implement an **industry foundation re-construction programme**⁵ (firstly raised by the Central Finance and Economics Committee in 2019) to overcome the “bottleneck” of critical basic materials, basic components, advanced basic crafts, basic industrial technologies as well as industrial basic software.
- Deploy **national manufacturing innovation centres** in order to strengthen the supply of generic and industrial technologies and boost the transformation towards high-tech achievements.
- Further **develop national quality infrastructure**, build public service platforms for industrial technological infrastructure in the standard measurement, certification and accreditation, testing and verification, and other areas.
- Develop a **strategic plan for the supply chain of each industry** to build a supply chain with more innovation power, added value and higher security level.
- Encourage companies to specialise in a professional field, gain superiority and become a champion in this specific area.

Boost the upgrading of manufacturing

- Deeply strengthen the **core competence in manufacturing** (the relevant industries are listed in the annex: **Table 1**); Encourage companies to apply advanced technologies.
- **Build intelligent manufacturing demonstration factories**, further develop the standards system in the area of intelligent manufacturing.
- Develop **strategic new industries** including the new generation of information technology, biotechnology, new energy, new materials, advanced equipment, new energy automobiles, environmental protection, and other industries. The value-added of these new strategic industries shall account for 17% of the GDP.

Shape a better digital ecosystem

Boost the digital transformation of the industry

- Facilitate the development of **new infrastructures**, such as 5G, Industrial Internet and Big Data Centres. Promote the deeper integration of internet, big data, artificial intelligence with other industries.
- The subscriber penetration of 5G shall be further raised to 56%. Foster the construction of a national integrated big data centre system. Further develop the **Industrial Internet** and **Internet of Vehicles**.
- **Cultivate the emerging digital industries**, further improve the development level of communication devices, core electronic components and key software. Seven key industries within the digital economy haven been identified (a detailed list can be found in the annex: **Table 2**).

⁵ Introduction of the programme (CHN): https://pdf.dfcfw.com/pdf/H3_AP202011111428148444_1.pdf?1605081386000.pdf

Development plan for selected regions⁶

- **Beijing**
 - Set a worldwide benchmark for the digital economy
 - Build 6.000 new 5G base stations
 - Accelerate the construction of an open e-government service platform with the integration of “*artificial intelligence arithmetic algorithm data*”
 - Coordinate the planning for the construction of satellite internet, Industrial Internet, and edge computing nodes
- **Shanghai**
 - Build Shanghai as an international digital capital
 - Build 8.000 new 5G outdoor base stations
 - Facilitate and build a cross-border data flow mechanism
 - Accelerate the construction of an international port
- **Tianjin**
 - Develop intelligent manufacturing; Build 100 digital workshops and smart factories
 - Focus on integrated circuits, Internet of Vehicles and 10 other industries
- **Zhejiang**
 - Build a national digital economy innovation development zone
 - Raise the added value of core digital economy industries by 10%
- **Hainan**
 - Increase average annual growth of digital economy by more than 30% in next five years

Build a digital ecosystem

- Establish basic regulations and standards on the **property, exchange, and cross-border transfer of data**. Actively participate in **international rulemaking in the digital area** including data security, digital currency, and digital taxation.
- Build and improve the **data property exchange mechanism** including data exchange platforms and main market entities. Strengthen the data protection in areas related to national interests, business secrets and personal privacy. Boost the development of **the fundamental legislation regarding data security and personal information protection**. Improve the data classification protection system.
- Drafting the Data Security Law and the **Personal Information Protection Law** are also on the list of the NPC’s work plan for this year⁷.
- Enhance the construction of cybersecurity infrastructure, strengthen the protection of data resources and important network and information systems.

⁶ Xinhua Net News: http://www.xinhuanet.com/info/2021-03/10/c_139799343.htm

⁷ Article from People’s Posts and Telecommunications News (PPTN) (CHN): http://paper.cnii.com.cn/article/rmydb_15811_298402.html

Table 1: Key industries of core competence in the manufacturing sector in the 14th FYP (comparison with Made in China 2025)

8 Key industries of core competence in the manufacturing sector in the 14 th FYP	10 Key industries in the Made in China 2025 initiative from 2015 ⁸
High-end new materials (e.g. high-end rare earth functional material, special steel products, reinforced carbon)	New materials
Major technical equipment (e.g. CR450 high-speed train, high-end machine tools, large-scale ship building)	Ocean engineering and high-tech ships Railway equipment
Intelligent manufacturing and robotic technology (e.g. Distributed control systems, data acquisition systems and other industrial control systems, advanced controller and robotic key technologies, additive manufacturing)	Numerically-controlled machine tool and robotics
Aero-engines and gas turbines (e.g. build Shanghai heavy-duty gas turbine experimental power station)	Aerospace equipment
Industrial application of Beidou (e.g. integrate Beidou satellite navigation system with communication, finance, energy, and other piloting industries)	
New Energy Vehicles (NEVs) and Intelligent (Connected) Vehicles (ICVs) (e.g. break through in research and development of high-performance drive systems and other key technologies, develop a basic technology platform and soft- and hardware systems)	Green energy and green vehicles
High-end medical equipment and innovative medicine (e.g. robotic for endoscopic surgery, vaccines for serious infectious diseases)	Medicine and medical devices
Agricultural machinery (e.g. high-power tractors and other advanced highly efficient devices)	Agriculture machinery
	Electricity equipment (smart power grids, smart cities)
	Information technology (integrated circuits, operating systems and industrial software)

⁸ Introduction on Made in China 2025 (CHN): <https://www.mckinsey.com.cn/%E4%B8%AD%E5%9B%BD%E5%B0%86%E5%85%A8%E5%8A%9B%E5%8F%91%E5%B1%95%E5%8D%81%E5%A4%A7%E9%87%8D%E7%82%B9%E4%BA%A7%E4%B8%A9/>

Table 2: Seven key industries in the digital economy (with relevant details)

Cloud computing	<ul style="list-style-type: none"> • Upgrade cloud operating system • Promote technological innovation in the area of massive distributed storage, elastic computing, virtual isolation of data • Improve cloud security level • Promote hybrid cloud as key industrial solution
Big Data	<ul style="list-style-type: none"> • Develop technologies including Big Data collection, cleaning, storage, digging, analysis, and visualisation algorithms • Build a full life cycle system for Big Data and improve the standard system
Internet of Things (IoT)	<ul style="list-style-type: none"> • Promote technological innovation of sensors and high accuracy positioning • Coordinated development of cloud services and edge computing, foster Internet of Vehicles, medical IoT industry
Industrial Internet (II)	<ul style="list-style-type: none"> • Build an autonomous identity resolution system, a standard system as well as a security management system • Strengthen the R&D of industrial software • Build Industrial Internet Platforms with an international influence • Promote the Industrial Internet + Intelligent Manufacturing ecosystem
Blockchain	<ul style="list-style-type: none"> • Develop application solutions using blockchain in supply chain management, government affairs services and other areas
Artificial Intelligence (AI)	<ul style="list-style-type: none"> • Build AI data sets in key industries • Foster the general utilisation of AI and build an open industrial AI platform
Virtual reality / Augmented reality (VR / AR)	<ul style="list-style-type: none"> • Develop tool software, industrial solutions and devices based on VR technology

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