

# China's Emerging Industry Development Strategy and Its Implications for Korea



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China's emerging industries have a great need for development in terms of technological innovation and national development and play a leading role in the long-term development of the society as a whole. The emerging industries announced last year by China's National Bureau of Statistics include eight major industries: energy-efficient and environmental technologies, next-generation information technology (IT), biotechnology, high-end equipment manufacturing, new energy, new materials, new energy vehicles, and digital technology. These industries are not only technology-intensive and consume a low level of physical resources, they also have high growth potential and thus affect the development of a wide range of other industries.

Emerging industries in China are growing faster than general manufacturing sectors. In the first half of 2019, the value-added of strategic emerging industries grew by 7.7% over the same period last year, accounting for 18.6% of the manufacturing value-added. Among these industries, the electronics and telecommunication equipment manufacturing industry grew by 11.6%, and the aerospace industry recorded 10.5%

growth. In the case of commodities, the areas of 3D printing, smartwatches, service machines, eco-friendly cars, and solar batteries showed impressive growth rates in production, increasing by 271.4%, 162.9%, 86.5%, 34.6%, and 20.1%, respectively.

There is a fair case that the rapid growth of these emerging industries can be attributed to the huge domestic market in China and strong support from the Chinese government. The Chinese government has established long-term goals at the national level to foster emerging industries and is implementing national strategies to achieve them.

First, through participation in the international technology standardization process, China is aiming to enhance its competitiveness. In 2017, the Chinese-German Standardization Cooperation Committee announced reform measures for the standardization of industries such as smart manufacturing (Industry 4.0), electric vehicles, and intelligent connected vehicles. In September of that year, China, the United States, the EU, and Japan organized a working group for electric vehicle safety (EVS) to promote international standards for electric vehicles and battery safety. These efforts aim to reduce risk and increase market share through a strategy of industrial standardization through international cooperation.

Second, China is jointly conducting R&D by providing an infrastructure and development environment favorable to overseas companies. Through such research and development, the nation hopes to rapidly narrow the technology gap with advanced countries. Currently, China's representative autonomous driving project is Baidu's Apollo project. As of July 2018, more than 110 overseas and Chinese companies, including Honda, Ford, Hyundai, Microsoft, and NVIDIA, are participating in the Apollo project. The project operates on an open cooperation system that provides partners with an autonomous driving platform and continuously develops technologies using their autonomous driving data.

Third, the Chinese government is striving to maximize synergies among industries. According to a plan released by the State Council in 2017, it will employ artificial intelligence (AI) in the fields of intelligent manufacturing, intelligent medical care, smart cities, smart agriculture, and try to raise the market size of the AI industry to 400 billion yuan by 2025. Through the development of these related industries, the government is striving to apply its policies in all directions possible, for instance by constructing AI platforms, establishing AI-powered courts, and taking measures to protect the AI environment. The Chinese government seeks to utilize IT technology to compensate for the large development gap between regions, while improving technology and accumulating know-how through experiences in the domestic market.

Fourth, the government aims to enhance competitiveness through a strategy that reduces market intervention and creates sound market order. As excessive government subsidies distort the market and burden the government's finances, the government is trying to reduce the size of subsidies and establish market order in the industry. Representative industries are those in which local companies show relative competitiveness, such as electric vehicles and the solar industry. The government plans to grant one renewable energy supply certificate (REC) per 1MWh of electricity produced through eco-friendly energy and introduce an REC trading system through a government-operated platform.

In addition, the current subsidy policy for new energy vehicles will be terminated by 2020. Instead, the “double mileage policy” seeks to promote industry standardization and drive market competition. Cars produced by automobile manufacturers are given negative scores according to their average chemical energy consumption, while new energy vehicles are given positive scores. If the cumulative score is negative, the company will be fined. According to the regulations, the cumulative scoring system will apply from 2019 to companies producing more than 30,000 passenger cars a year. Each company will be required to accumulate a certain ratio of points for the new energy vehicles they produce, with this ratio set at 10% and 12% by 2019 and 2020, respectively.

However, despite these strategies aimed at promoting development in emerging industries, they still struggle with a general lack of basic competencies. Local companies show low willingness to participate in the standardization process, which in turn is hampered by the behavior of companies producing products of similar quality due to excessive price competition. Also, advanced production equipment is highly dependent on imports. For example, 80% of the production equipment for integrated circuit chips depends on imports, while about 70% of main production equipment for automobiles depends on imports.

In this sense, China's emerging industries are growing rapidly in terms of size, and there are areas where Korea can share in this growth through cooperation with China. As Korea is limited in the size of its domestic market, it will be important to participate in the standardization process ongoing at China, particularly in industries where China is likely to lead industrial development in the future. The reason behind Japan's joint decision with China to determine the high-speed charging standard for electric vehicles is to gain an advantage in entering the Chinese market in the future.

Overcapacity and inefficiency remain in the domestic market due to excessive subsidies supported by the government. For example, in 2017, 17% and 10% of the annual amount of electricity generated from hydro-power and wind energy were discarded without being used. This is due to the lack of efficient transmission infrastructure between provinces and the lack of large-capacity electrical storage equipment and technologies. By identifying these local market demands and providing the equipment and technology necessary for Chinese companies, it will be possible to prepare a bridgehead into the Chinese market.

The domestic gap within China is proving difficult to narrow because of the severe technological gap between provinces and the unbalanced distribution of researchers who play a key role in technological development. For example, in 2016, there were an estimated 169 million researchers nationwide, of which 104 million were active in eastern China, while only 11 million were situated in the northeast. Considering the large differences in technology levels among provinces, a localization strategy should be established by collaborating with local companies that desperately need the skills and equipment of Korean companies.

As China continues to grow in terms of its technological development and industrial competitiveness, Korea will above all need to agilely respond to these changes. Such a response should begin with an understanding of China's industry and cooperation between the two countries. Since technological cooperation with foreign-invested companies is one of the main drivers of growth in China's emerging industries, it is important to continuously study China's development strategy and cooperation process with foreign countries by industry. Urgent efforts should be made to realize opportunities to further Korea's technological development through cooperation in China's emerging industries. **KIEP**