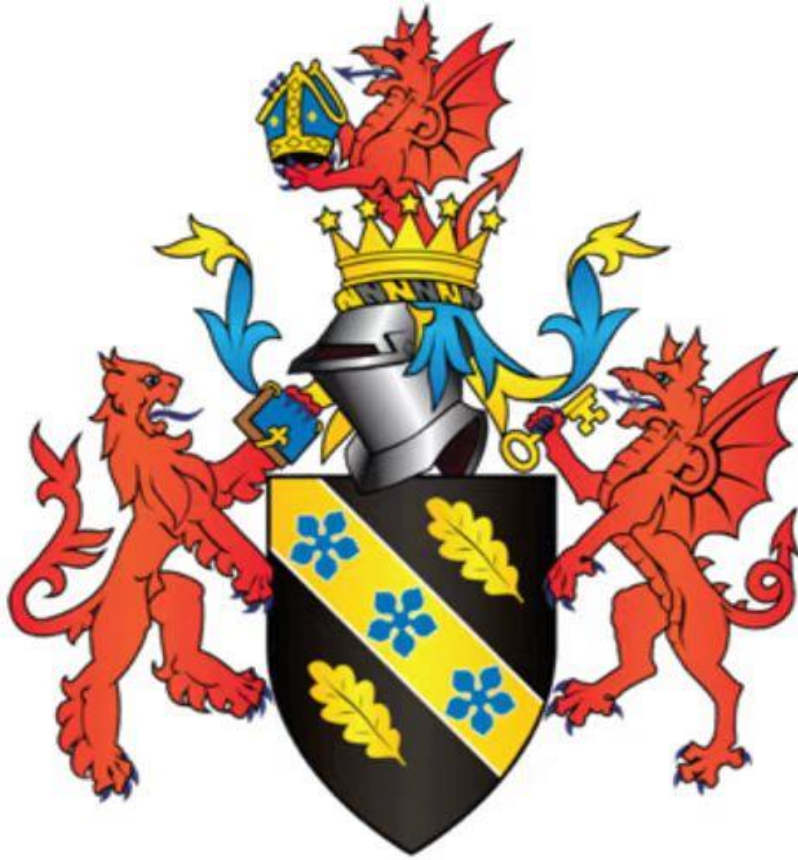


Strategy Recommendation Report for ABB



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MODULE NAME: BMMB7013 Strategic Management

Full name: Peng Guo

Student ID:2216865

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Abstract

The application of industrial robots is to free people from repetitive and tedious work. Especially under the epidemic situation, the application of industrial robots has been accelerated, and the concept of intelligent factory has also emerged. Robots have many applications. Simply put, they can simulate or approximate human eyes, hands, legs or other functions. The application of industrial robots in the field of production continues to expand, so that the production of robots constantly put forward new requirements, so as to promote the improvement of the level of robot technology. At the same time, the improvement of robot performance and intelligence level also makes robots continue to replace the role of people in production, widely replace people engaged in various production operations, become the main labor force in the production activities of enterprises. The role of industrial robots in production, from replacing most of the manual labor, to part of the brain work, and then continue to evolve into the integrated automated production system, playing a role of management and coordination.

Key words: Industrial Robot, In place of human, Intelligent Automation.

1. Introduction

Headquartered in Zurich, Switzerland, ABB is one of the world's top 500 companies. ABB was formed in 1988 by the merger of Sweden's ASEA and Switzerland's BBC Brown Boveri, two international companies with a history of more than 100 years. The two companies were founded in 1883 and 1891 respectively. ABB is a leader in power and automation technologies. ABB's technologies can help power, utility and industrial customers improve their performance while reducing their environmental impact. The ABB Group operates in more than 100 countries, employs 130,000 people and generated sales of \$32 billion in 2010. ABB announced the official opening of its leading robotic gigafactory at a launch ceremony in Kangqiao, Pudong district, Shanghai, on Dec 2, 2022.

ABB is a technology leader in electrification and automation, enabling a more sustainable and resource-efficient future. The company's solutions connect engineering know-how and software to optimize how things are manufactured, moved, powered and operated. Building on more than 130 years of excellence, ABB's 105,000 employees are committed to driving innovations that accelerate industrial transformation.

ABB's relationship with China dates back to the beginning of the last century, when ABB supplied the first steam boiler to China in 1907. Since then, ABB's trade relationship with China has developed considerably. ABB established its China Business unit in Hong Kong in 1974, followed by a permanent office in Beijing in 1979. In 1994 ABB decisively moved ABB China headquarters to Beijing. In 1995, ABB

(China) Co., LTD was formally established. ABB has 18,000 employees in China, serving 34 local companies and nearly 40 sales and service branches in 80 different cities. In 2010, ABB's sales in China reached \$4.4 billion, maintaining China's leading position as ABB's largest market in the world. ABB attaches great importance to attracting, developing and retaining talent, and actively undertakes social responsibilities. Abb is widely respected as one of the best employers.

Industrial robot is a multi-joint manipulator or multi-degree-of-freedom machine device widely used in the industrial field, with a certain degree of automaticity, can rely on its own power energy and control ability to achieve a variety of industrial processing and manufacturing functions. Industrial robots are widely used in electronics, logistics, chemical industry and other industrial fields.[¹]

Industrial robots first came into use in the late 1950s. Joseph F.Engelberger used servo-related inspiration to develop an industrial robot, the Unimate, with GeorgeDevol, which was first used on General Motors' production floors in 1961. The original industrial robot structure is relatively simple, the complete function is to pick up auto parts and placed on the conveyor belt, there is no ability to interact with other working environment, is to accurately complete the same repetitive action according to the predetermined basic program. Although the application of "Unimet" is a simple and repetitive operation, it shows the bright prospect of industrial mechanization and also opens the prelude to the vigorous development of industrial robots. Since then, in the

¹ Liu Ning. Installation and Commissioning of Industrial Robot [J]. Hebei Agricultural Machinery, 2019, (3):41-42

field of industrial production, many heavy, repetitive or meaningless process work can be done by industrial robots instead of humans. [2]

By the 1990s, with the progress and development of computer technology and intelligent technology, the second generation of robots with certain sensory functions has been practical and began to promote, with vision, touch, high dexterous fingers, can walk the third generation of intelligent robots have emerged and began to be applied. In 2020, the operating revenue of China's robot industry exceeded 100 billion yuan for the first time. During the 13th Five-Year Plan period, the output of industrial robots increased from 72,000 to 212,000, an average annual increase of 31 percent. From the perspective of technology and products, key technologies and components such as precision reducer, high-performance servo drive system, intelligent controller and intelligent integrated joint are speeding up breakthroughs and innovative achievements continue to emerge. The performance of the whole machine is greatly improved, the functions are increasingly rich, and the product quality is increasingly optimized. Industry applications are also expanding. For example, industrial robots have been widely used in 52 industry categories and 143 industries, such as automobiles, electronics, metallurgy, light industry, petrochemical industry and medicine.

² Yang Zhengze. Made in China 2025 High-end CNC Machine Tools and Robots [M]. Jinan: Shandong Science and Technology Press, 2018.05

Features: The robot is easy to use, high intelligence level, high production efficiency and safety, easy to manage, significant economic benefits. Application: palletizing, welding, assembly, detection.[³]

2. Strategic Analysis

Strategic analysis is an important part of strategic management. Strategic analysis is to analyze the internal and external environment of an organization through the collection and sorting of data, including two parts: organizational diagnosis and environmental analysis. The purpose of strategic analysis: 1. To obtain the scientific competitive strategy of enterprises on the basis of comprehensive and systematic strategic analysis; 2. Have clear development direction and clear business development ladder; 3. Enterprise strategy is fully communicated and consensus reached within the organization; 4. Consistent development direction and concerted efforts to achieve strategic goals; 5. Let employees identify with and support the strategy and objectives of the enterprise, and strengthen their sense of responsibility; Not only pay attention to short-term performance, but also pay more attention to long-term development; 6. Establish a strategic decision-making mechanism and make decisions scientific and

³ Industrial robots embrace new opportunities -- Economy, science and technology -- People's Daily Online[online] Available at:<
<https://baike.baidu.com/reference/1290396/fe78KcsdvhYtwODzQ8oFRqx6H5Zn5zobFPb4YDon0wErnd6VQ0EaYvZh8WUdsH-zl zg3Jav03s8KwjrneWV3U9GpMvTedugqvXVnJFin0YntYkKd8dtFjPx>>[Accessed 16 Dec 2022]

forward-looking; 7. Not only pay attention to short-term performance, but also pay more attention to long-term development; 8. The overall performance and core competitiveness of the enterprise continue to improve.

3. Macro Environment Analysis

The external environment of enterprises is divided into two levels: macro environment and micro environment. Macro environmental factors include: political environment, economic environment, technological environment, social and cultural environment. These factors have a great influence on enterprises and their micro environment, and generally have an indirect impact on enterprises through the micro environment. Micro-environmental factors, including market demand, competitive environment and resource environment, involve the nature of the industry, the status of competitors, consumers, suppliers, intermediaries and other social interest groups and other factors, which will directly affect the production and operation activities of enterprises.^[4]

3.1 PESTEL Analysis

Factor	Analysis
Politics	At present, the Chinese government is stable and welcomes the localization of foreign enterprises. It not only provides tax relief, but also provides low-priced land to attract investment. On September 12, 2019, ABB announced that it broke ground on a new robotics factory and R&D facility in Shanghai, China. After a gap of three

⁴ Weng Qian. Environmental Analysis of Building Installation Enterprises [J].

	years, ABB held a production ceremony in Kangqiao, Pudong, Shanghai, on December 2, 2022, announcing the official opening of the robotic gigafactory. ABB's smart factory is a fully automated, flexible manufacturing facility that combines production and research and development and covers 67,000 square meters, with an investment of US \$150 million (about 1.1 billion yuan at real-time exchange rates). Moreover, China is a multi-ethnic country with 56 ethnic groups, which is a happy thing for ABB. Employees of all nationalities around the world will be able to work and live better in China. At the same time, with the power of China's intelligent manufacturing, more and more enterprises have the demand for automation upgrading, and the demand for ABB robots is increasing. The government also provides the mode of financial leasing. In the face of the epidemic and the international situation, China proposed the internal circulation model. China's vast territory and rich industrial belt of origin are good displays for ABB's business.
Economic	Consumption: In the first three quarters of 2021, the contribution of final consumption expenditure to China's GDP growth reached 64.8%, higher than the contribution of consumption to the GDP in 2018 and 2019. Consumption has played an important fundamental role in economic growth. In 2022, China will continue to step up

	efforts to mobilize the enthusiasm of market players and increase consumption capacity and willingness, which is expected to continue to unleash consumer demand. Investment: Since 2021, investment in the manufacturing sector has maintained a growth rate of more than 10%, and its structure has been continuously optimized. The growth rate of investment in high-tech industries and manufacturing is significantly faster than that of manufacturing and fixed asset investment as a whole. Real estate investment is expected to stabilize gradually in 2022, while manufacturing investment and infrastructure investment will continue to gain strength. External demand: China has introduced a series of policies to stabilize foreign trade and foreign investment, which will help maintain steady export growth and, together with investment and consumption, keep the national economy operating within a proper range. Structurally, China has continued to deepen supply-side structural reform, promoted industrial transformation and upgrading, and shifted growth drivers. New drivers of growth have been incubated and brought into play. For example, in the areas of scientific and technological innovation, green development, rural revitalization and common prosperity, and in the areas of specialized and innovative small and medium-sized enterprises, new areas of economic growth are showing inexhaustible vitality.
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Society	China has a market population of 1.4 billion, comprising 56 ethnic groups. The majority of the Han nationality, Buddhism, Christianity, Islam and so on. High acceptance of foreign products, concerned about cost performance and after-sales service system. With the expansion of colleges and universities, more and more young people are receiving quality education. The main languages are Chinese, Cantonese and English, and there are also many employees who can speak mainstream national languages. To ensure people's livelihood, we are actively promoting environmental protection. We need clean water and lush mountains, as well as gold and silver mountains.
Technology	As the second largest economy in the world, China is actively upgrading various industries, upgrading and accelerating technology, research and development, university cooperation and intellectual property rights. At present, it is far ahead in new energy vehicles, electric power, infrastructure construction, high-speed rail and other scientific and technological fields. At the same time, it also drives the upstream and downstream industries of the industry.

3.2 Porters Five forces

The porter's five forces model was introduced by Michael E Porter in 1979. The purpose of this model was to assess the competitive positioning of a company to synthesize a strategy (Azadi & Rahimzadeh, 2012). The porter's five forces are discussed below.

3.2.1 Bargaining power of suppliers

Building on ABB's strong position in electrification, motion, process automation and robotics and discrete automation, ABB aims to create superior value for all stakeholders. With ABB's purpose as the core, ABB's operation mode -- ABB's way -- is the lever for ABB to implement its strategy. By pushing the boundaries of technology and integrating sustainability into everything ABB does, ABB's employees take ABB's business performance to new levels. Together with ABB's shared values, strong brand and governance framework, the ABB Way lays the foundation for execution as a focused, successful, value-creating company. The ABB Way, with ABB's corporate purpose at its core, gives divisions full autonomy and responsibility for their strategy, performance and resources, while acting as the "glue" that holds the group together. ABB's approach consists of two parts: "how" it will operate and create superior value in the future, its business model; People and culture; Branding and governance; And the purpose, the "why" the company exists. ABB Way provides standardized policies, processes and systems, including portfolio, performance and risk management, as well as internal controls and compliance. ABB has a decentralized business model in which companies have full authority and responsibility for operational decisions. ABB's 20 divisions are ABB's highest operational level, accelerating value creation and bringing

business decisions closer to customers. ABB's four business areas focus on the governance, operational performance and portfolio management of its divisions. The business is focused on portfolio evolution, capital allocation, performance management, common policies and our brand. In fact, behind the Shanghai gigafactory lie two "necessities" for ABB. 1. Build an internationalized Chinese localization enterprise, continuously promote localization, and enable ABB's business in China to achieve rapid development. According to ABB's 2021 annual report, the total revenue of ABB's robot business in 2021 was \$3297 million, of which the revenue in the Chinese market was \$956.13 million, with a year-on-year growth of 31.56%. In addition, the Chinese market accounted for 29% of ABB's overall robot business. It has become the second largest market for ABB robots worldwide. 2. Expansion of business scope. ABB's Shanghai Gigafactory, with its 8,000-square-meter R&D center, will accelerate innovation in artificial intelligence, digitalization and software, focusing on autonomous mobility, digital twinning, machine vision and low-code programming software to make robots smarter, more flexible, safer and easier to use. At the same time, ABB will collaborate with partners and customers in the new Open Innovation Center to develop innovative solutions to unlock more possibilities for flexible automation in new areas such as logistics, healthcare, food and beverage. Specifically, the factory connects the physical world with the digital world, creating a digital manufacturing ecosystem that uses virtual planning and production management systems to collect and analyze data to improve performance and productivity. At the same time, the new plant ditches traditional, fixed assembly lines in favor of flexible, modular production units that are

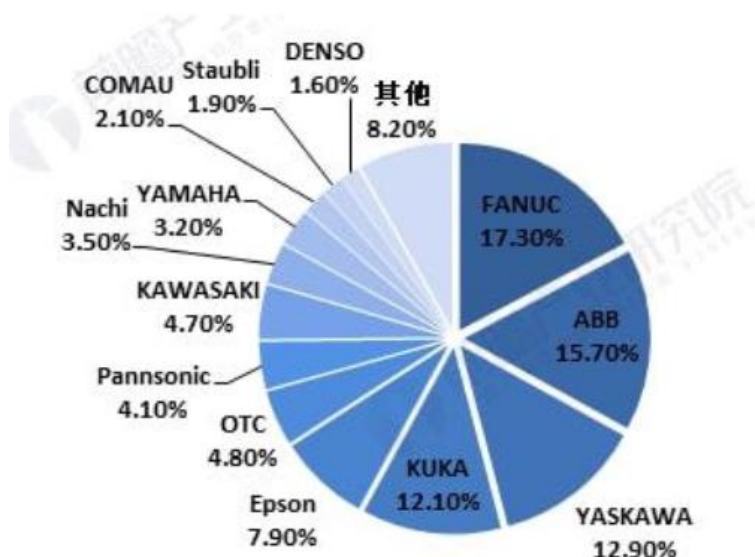
digitally interconnected, serviced by autonomous mobile robots and intelligent robotic systems that can perform tasks such as screw tightening, assembly and material handling.

3.2.2 Bargaining power of buyers

At present, a new round of scientific and technological revolution and industrial transformation is accelerating, and the new generation of information technology, biotechnology, new energy, new materials and other technologies are deeply integrated with robot technology. The robot industry is facing a window period of upgrading and leapfrog development. With the advent of the post-COVID-19 era, China's industrial economy has shown strong resilience and vitality in coping with complex and severe situations, and the performance of the industrial robot industry has bucked the trend. According to the latest data released by the National Bureau of Statistics, the output of industrial robots in enterprises above designated size will reach 363,000 units in 2021, up 44.9 percent year on year. Demand side: The sales scale of industrial robots increased by nearly 20%. China has been the world's largest consumer of industrial robots for eight consecutive years, according to the 14th Five-Year Plan for Robot Industry Development. According to IFR data, the sales scale of industrial robots in China reached 42.25 billion yuan in 2020, with a year-on-year growth of 18.9%. At the end of 2021, 15 departments including the Ministry of Industry and Information Technology, the National Development and Reform Commission, and the Ministry of Science and Technology jointly issued the "14th Five-Year Plan" for the Development of Robot Industry, promoting China's robot industry to a medium-high level in the "14th

Five-Year Plan" period. It is clearly stated in the Plan that by 2025, China will become a source of global robotics innovation, a hub for high-end manufacturing and a new highland for integrated application. The annual average growth rate of the robot industry will exceed 20%, and the density of robots in the manufacturing industry will double. It is expected that the sales scale of industrial robots in China will reach 105.1 billion yuan by 2025. According to IFR's World Robot 2021 Industrial Robot Report, China shipped 168,400 industrial robots, a strong growth of 20 percent, ranking first in the world. Generally speaking, in recent years, with the support of the national policies, the density of Chinese industrial robots has been increasing continuously, and the production and sales have been increasing year by year. In the future, with the acceleration of industrial robot localization process, industrial robot industry development space is huge.[⁵]

3.2.3 threat of new entrants



⁵ Market Outlook and Investment Strategy Planning Analysis Report of China's Industrial Robot Industry[J]

Chart 1^[6]

Fanuc, ABB and Yaskawa Electric are the world's top three companies with 17.3 per cent, 15.7 per cent and 12.9 per cent respectively, according to IFR.^[7]

Fanuc VS ABB VS Yaskawa Motor - Industrial robot technology layout comparison:

Fanuc VS ABB VS Yaskawa Motor - Industrial robot patent applications and PCT applications comparison: ABB has more advantages. In terms of the number of

industrial robot patent applications, ABB Switzerland's total number of applications is much higher than the other two companies. By August 2021, ABB Switzerland's total number of applications is 25,858, of which 6793 are PCT applications. In terms of the

trend, from 2010 to 2017, the application volume of ABB Switzerland AG has been much higher than the other two companies. From 2017 to August 2021, the application volume of Fanuc Co., Ltd. began to gradually level with the level of ABB, while the application volume of Yaskawa Electric has been at a low level and stable change. ABB

Switzerland filed 470 patents in 2020, Fanuc 398, and Yaskawa Electric 52. Fanuc VS

ABB VS Yaskawa Motors - Industrial Robot patent Market value comparison: ABB patents have a higher market value. The total value of ABB Switzerland's patents is as

high as \$3189,04.13 million, Fanuc's is slightly lower at \$23,845.17 million, Yaskawa

Electric is much lower than the first two, only \$492,585 million. From the perspective

of value distribution, the value of ABB's industrial robot-related patents is mostly less

⁶ Market Competition pattern analysis of global industrial robot technology leading enterprises Fanuc VS ABB VS Yaskawa Electric. [online] Available at: <<https://www.163.com/dy/article/GVP8IRJM053284K6.html>>[Accessed 15 dec 2022].

⁷ International Federation of Robotics: China's robot market is the fastest growing in the world.[N]

than \$30,000, while the value of Fanuc and Yaskawa Motor patents is mainly distributed in the range of \$30,000 to \$300,000. ABB's core technology is the motion control system, which is also a big difficulty for the robot itself. ABB, which has mastered the motion control technology, can easily realize the robot performance such as path accuracy, motion speed, cycle time and programmable design, greatly improving the quality, efficiency and reliability of production. Technology: Good algorithm, but slightly expensive. ABB implements the strategy of holding high and fighting high in China, focusing on the cooperation with major customers in China. Huawei, Changhong and Topstar are the leaders of application terminal and integrator in the 3C household appliance industry respectively, playing the role of weather vane in the industry, which can be seen that ABB attaches great importance to the 3C industry. Its future products will integrate more advanced technologies such as intelligence, interconnection and big data. Ontology enterprises begin to move towards the application side, and the relationship with system integrators will be closer. At the same time, ontology enterprises themselves begin to pay attention to the development of integrated applications.

3.2.4 The threat of substitutes

In August 2021, at the Tesla AI Day event, Tesla CEO Elon Musk unveiled plans for the Tesla Bot, code-named Optimus. A year later, the prototype Optimus Prime was unveiled, showing off operations such as carrying boxes, watering plants, and moving metal rods. Musk expects to produce millions of units in the future, with a price target of less than \$20,000. In fact, humans have been searching for humanoid robots for a

long time. Back in the late 15th century, the Italian scientist Leonardo Da Vinci sketched a humanoid robot in his manuscript. The robot was designed to look like a knight, but due to the limitations of technology, its limbs could only be powered by wind and water. In the 21st century, with the development of artificial intelligence, big data, edge computing, cloud computing and other technologies, humanoid robots have made a qualitative leap. In 2013, for example, Kirobo, a robot developed by the University of Tokyo, Dentsu and Toyota, has facial recognition and can talk to astronauts. In 2016, Boston Dynamics unveiled its humanoid robot Atlas, which can walk upright on two legs like a human. After several years of updates and iterations, Atlas has been able to complete various difficult parkour sports. In 2020, Agility Robotics, an American startup company, announced that its bipedal robot Digit can handle goods without any interference and can be applied in logistics, warehousing, industry and other scenarios. Busboy, launched by Toyota in 2021, can perform 85 percent of complex human-level tasks. Humanoid robots are the most similar to humans. They can walk on two legs, perform simple actions through arm and body coordination, and communicate with humans through simple language. For example, humanoid robots can go up and down steps, cross obstacles while walking, bend down to lift goods, and perform human-like dance moves that are difficult for other robots to accomplish. It can be said that humanoid robots have a wide range of application scenarios, specifically: 1. Ensure human security: security is the most obvious advantage of humanoid robots. They can replace human work in some dangerous workplaces and harsh working conditions to maintain maximum safety. 2. To alleviate the dilemma of

aging: At present, the problem of population aging is occurring all over the world. According to the forecast of the United Nations on the development trend of world population aging, the number of people aged 60 and above will reach 2.1 billion by 2050. Humanoid robots can take care of the elderly and alleviate some of the risks of aging.

3. Enhance the shopping experience: All kinds of stores, administrative departments and hotels are using humanoid robots to provide memorable shopping experiences. They help customers find what they want, let visitors know if their size is available, collect customer feedback, and more. As a result, humanoid robots can save valuable time for employees and customers.

4. Highly Flexible and mobile: Humanoid robots are very mobile and their legs help them move easily in different directions. As a result, humanoid robots can perform multiple tasks. As mentioned above, these robots are designed to mimic human behavior. Some robots are therefore ideal for heavy industry tasks, such as deep-sea exploration, space and mining. In addition, they can also be used to operate vehicles and equipment. It can be said that humanoid robots will become an important helper in human daily life. It's important to note that while humanoid robots are on the horizon, it won't be easy to make them commercially viable.

On the one hand, humanoid robot is a high-tech, comprehensive project, involving materials, sensors, control technology, algorithm, exercise physiology, ergonomics and other disciplines, need to invest a lot of capital and technology; On the other hand, humanoid robots lack mature application scenarios and practicability. According to

Marketsandmarkets^[8], the global humanoid robot market is expected to grow from \$1.5 billion in 2022 to \$17.3 billion in 2027, with a compound growth rate of 63.5%. According to the data released by Statistics Market Research Consulting, the global humanoid robot market has reached \$1.51 billion in 2021, and is expected to reach \$26.43 billion in 2028, with a compound growth rate of 50.5%. At present, humanoid robot is still in the early stage of development, the market increment potential is huge. We believe that with the influx of new players and the maturing of technology, humanoid robots will eventually enter our homes.

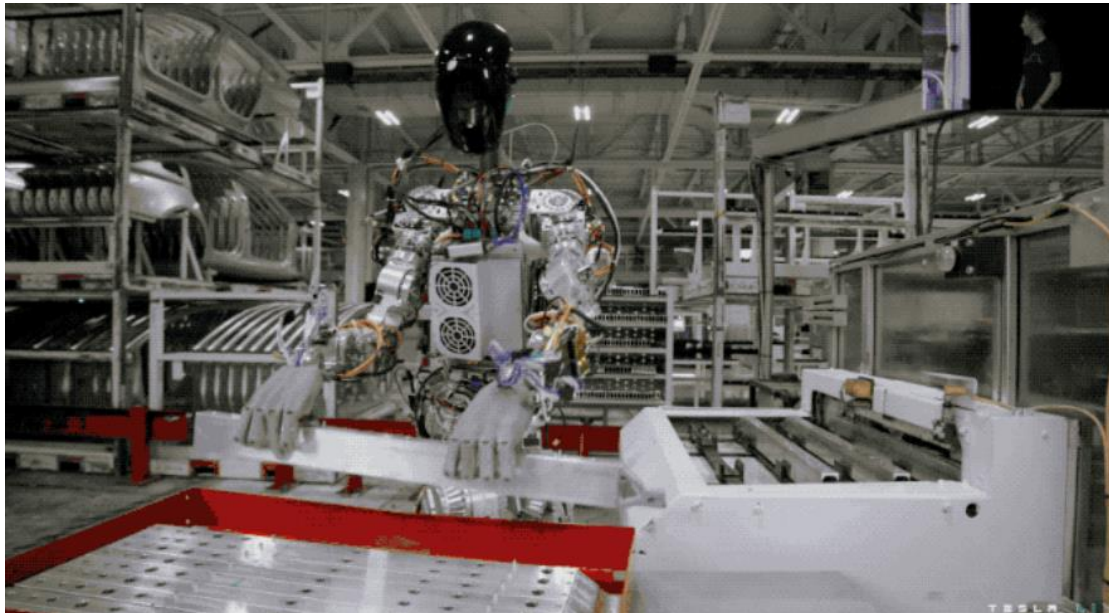


Chart 2^[9]

⁸ MarketsandMarkets forecasts the global edge AI market to reach \$1.152 billion by 2023..[online] Available at: < <https://www.marketsandmarkets.com/#>>[Accessed 15 dec 2022].

⁹ Musk's first 'human creation' and 'mass production' of a robot under \$20,000 in 3 years? [online] Available at: < <https://www.tesla.com/>>[Accessed 15 dec 2022].

3.2.5 The level of competition among competitors

ABB has consolidated its businesses and made frequent acquisitions since 2015. In 2015 it acquired Gomtec Plus Code collaborative robotics, in 2016 it acquired SVIA, a Swedish systems integration company, in 2017 it acquired B&R and GE Industrial Systems. In China, ABB has a full range of business activities including research and development, manufacturing, sales and engineering services, with 40 local enterprises. In May 2018, ABB Chongqing Application Center was officially opened to provide customers with full value chain business support from application development, front-end sales, system integration and customer service. Fanuc: In order to improve production capacity, in Japan, Fanuc spent 8.7 billion yen and 1.8 billion yen respectively to expand the ROBOSHOT and ROBOCUT factories in 2018, and spent 6.5 billion yen to build a new processing plant to produce robot parts, which is scheduled to be completed by the end of 2018. In China, Fanuc invested 100 million yuan to sign a contract with Chongqing Technology Center Project in 2016, and strives to reach an annual production capacity of 10,000 industrial robots and 20,000 service robots and special robots by 2020. In 2018, Fanuc started construction of its South China base, which mainly includes R&D, production and manufacturing of robots and robot systems. Yaskawa Motor: In April 2017, Yaskawa Motor and Changying Precision formally signed a joint venture, Guangdong Tianji Robot Co., LTD., to expand the Chinese market through technical cooperation, has produced 500 sets of small six-axis robots in 2017, 2000 sets in 2018, to achieve an annual output of 10,000

units in 2021. In order to add servo drive production line, the construction of Yaskawa (Shenyang) Third plant began in May 2017, and the beam erection ceremony has been completed. Multiple conditions support the acceleration of domestic substitution process and system integrators are expected to be the first to break through.

4. Micro Environment Analysis

The micro analysis of a company is used to highlight the internal capabilities and strengths of the company while highlighting the weak points that can be improved. The micro analysis can be done using the swot analysis. Tools such as core competencies and stakeholder analysis are done to get a broader view.

Strengths	Established early, has its own core technology, a wide customer base, a global vision of professional technology, business capabilities.
Weaknesses	The cost is higher than that of Japanese companies.
Opportunities	Original customers can be sold and upgraded. Localization can speed up cost reduction.
Threats	Fanuc, Yaskawa technology competition, cost competition, also set up factories in China. Also at stake are customer relations and political and business relations.

5. Strategies for the Future Development

Liang Rui, president of ABB Robotics Business in China, said, "ABB robotics has been in the Chinese market for nearly 30 years and has been providing support to various industries, including automobiles, electronics, metals, plastics, logistics, etc. With the opening of the smart factory, we can further meet the surging demand for automation in the Chinese market, especially in emerging sectors such as new-energy vehicle manufacturing, wearable smart electronic devices, catering, medical and health care, e-commerce, retail and service robots," he said. Earlier, ABB released a forecast on the development of the robot industry, saying that it expects global robot sales to grow from the current \$80 billion to \$130 billion by 2025. China is the world's largest robot market. In 2021, the number of installed robots in China accounted for 51% of the global total, and the operating stock of robots exceeded 1 million units. From "guerrilla warfare" to "positional warfare." The opening of the gigafactory represents ABB's position in China, and its business in China has changed from "guerrilla warfare" to "positional warfare", which is more conducive to its development in the Chinese market. Staubli robot's first domestic production line has landed in Hangzhou; Fanuc Shanghai "super smart factory" will be completed in 2023; Yaskawa (Changzhou) Electromechanical Integration System Co., LTD., with a total investment of more than \$100 million, has laid the foundation in Wujin National High-tech Zone; However, other foreign manufacturers and domestic robot brands have not slowed down their pace and are stocking up on food. Estun Robot can realize the second phase of the intelligent Industrial park with an annual capacity of 50,000 units, which is planned to be completed by the end of 2022. Huichuan Technology Nanjing high-end equipment

R&D and production base has been officially started; Eft's annual capacity of 30,000 units of industrial robot research and development and intelligent gigafactory project has been completed for the record; Canop's industrial robot R&D and production project covering an area of over 35,000 square meters is still completed. There is no doubt that ABB has embarked on a "fire" campaign. Conclusions

6. Conclusion

In order to provide better service for the industry, it is necessary to use the robot well from two aspects. One is based on the robot itself, to keep enough understanding of the industry changes and product characteristics, so as to master the needs of the market and customers; The second is based on automation, constantly improve the manufacturing process, research and development, production, manufacturing and other processes, to achieve all-channel, all-application technology leadership. In order to maintain strong strength in the future market competition, ABB will continue to adhere to independent research and development and innovation practice, create flexible and efficient production mode, to ensure the resilience of the supply chain to do a good job of "localization" development, and accelerate the automotive industry, especially the new energy vehicle industry product development and technology innovation. And these, is also the automobile industry chain on all the enterprises are thinking about the topic.

7. Recommendation

Continuous product iteration, closer and richer supply chain management, localization as soon as possible, promote cross-industry cooperation, use secondary sales to increase

revenue. Maintain the patent advanced nature, steady investment, promote the sustainable development of green energy.