

Analysis of Influencing Factor in the Development of Strategic Emerging Industries

—A case study of UAV industry development in S city, Northeast China

Chu Xuan
Shenyang Aerospace University
SAU
Shenyang, China
rosasifei@126.com

Zhang Senyue
Shenyang Aerospace University
SAU
Shenyang, China
Xuer27@163.com

Li Yibo
Shenyang Aerospace University
SAU
Shenyang, China
liyibo_sau@163.com

Abstract—The strategic emerging industries are strategic industry with intensive knowledge-based technologies, low consumption of material resources, enormous potential and great comprehensive benefits, which can promote the upgrading of industry structure, facilitate the sustainable development of economic society, and enhance the independent development ability as well as competitiveness, the strategic emerging industries is a type of industry what China focuses on. So, what are the factors that influence the development of strategic emerging industries and how to promote the development of strategic emerging industries are the questions that must be answered to accelerate the development of strategic emerging industries. Dissecting the influencing factors for the development of UAV industry and put it into an influence factor about strategic emerging industry development by analyzing the case of UAV industry in S city of northeast China and combining the current situation about science technology and social development. Finally, it puts forward concrete measures to promote the development of strategic emerging industries.

Keywords—*strategic emerging industries; development strategic; influencing factors; Case analysis*

I. INTRODUCTION

The strategic emerging industries are strategic industry with intensive knowledge-based technologies, low consumption of material resources, enormous potential and comprehensive benefits, which take the major technological breakthroughs and major development needs as the basic and play a major leading role to the economic and social development and long-term development. In 2010, the State Council examined and approved in principle “the Decision of the State Council on Accelerating the Cultivation and Development of Strategic Emerging Industries”, which clearly states that it is necessary to speed up the cultivation and development of strategic emerging industries based on major technological

breakthroughs and major development needs, it has a great signification on promoting industrial structure upgrading and the transformation mode of economic development, enhancing our capability of independent development and international competitiveness, and promoting sustainable economic and social development. Based on its national conditions, science and technology, industrial base, China selected seven industries of energy conservation and environmental protection, a new generation of information technology, biology, high-end equipment manufacturing, new energy sources, new materials and new energy vehicles [1].

UAV, known as aerial robot, or flying robot, drones, is one of the strategic emerging industries, which has broad market prospects and development space, it can be integrated closely with agriculture, forestry, disaster prevention and relief, land surveying and mapping industries, even the "Internet +" era of smart industry, with development prospects of ten billions, or even hundred billions blue ocean [2].

S city is an important city in the northeast old industrial base, a pilot city for low-altitude reform in the country, its equipment manufacturing industry is a traditional industry with good industrial foundation and technological advantages. In the future, the city will speed up its transformation from manufacturing to intelligent manufacturing, high-end manufacturing and green manufacturing; it will have a good aerospace foundation and endeavor to create a new growth point for intelligent equipment manufacturing and aviation equipment.

In this paper, the S-old industrial base in northeast China was selected as an example to clear up status quo of unmanned aircraft industry in foreign countries. The status of unmanned aerial vehicle industry in China's advanced UAV industry has been investigated (Table 1). The status quo of man-machine industry in-depth research, analysis of the UAV industry

development impact factors, and put forward to promoting the strategic development of new industries, specific strategies.

TABLE I. CHINA UAV ADVANCED ZONE INFORMATION SUMMARY

| Area | Number of Firms | Involved in the field of industry | Major business | Industrial organization | System document |
|------------|-----------------|--|---|--|---|
| Shen Zhen | 200 | Consumer Grade UAV | DJ Innovation Technology Co., Ltd | Industry associations In Shenzhen | <General technical requirements for civil UAV> <general technical standards for civil UAV system> |
| | | | Shenzhen Corbett co. Ltd | | |
| Guang Zhou | 30 | Agriculture plant protection drones | Polefly science and technology co. Ltd (Xaircraft) | Guangzhou UAV production and research institute technology innovation alliance | |
| | | Brainpower Drones | Yihang intelligent co. Ltd | | |
| Bei Jing | 30 | Unmanned vehicle aircraft and autopilot research, design, Development, production | Putt unmanned aircraft technology company | Beijing UAV industry association | |
| | | Intelligent vehicle platform | Institute of aeronautic In Beijing | | |
| Xian | 20 | Small and medium UAV system R&D and manufacturing | Aisheng technology group co. Ltd | | |
| Wu Han | 20 | Technical services and technical development of UAV and multi-function aircraft | Smart bird drone company | | |
| Shen Yang | 20 | Technical research and development of industrial unmanned aerial vehicle and flight control system | Liaoning Zhuanglong UAV technology co. LTD | Shenyang UAV industry technology innovation strategic alliance | |
| | | Agricultural plant protection UAV, ecological control unmanned aerial vehicle | Shenyang Jinfeng spring aviation technology co. LTD | | |
| | | Flight control system and design and development | Shenyang No distance technology co. Ltd | | |

II. THE UAV INDUSTRY OVERVIEW OF THE STATUES IN DOMESTIC AND FOREIGN

A. UAV technological innovation and industrial development statues in foreign

At present, the major developed countries in the world have years of accumulation on the technological innovation and industrial development of UAV, and forming a relatively strong industrial scale, meanwhile, there are 32 countries that include the United States, Israel, Canada, Germany, Britain, France and Russia have developed more than 50 kinds of UAV, over 300 basic models and more than 50 countries equipped with UAV. The total scale of UAV has reached tens of thousands [3].

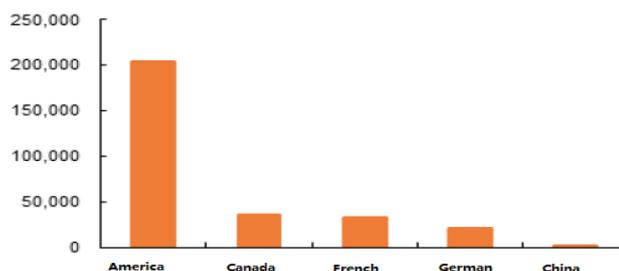


Fig. 1. Number of general aircraft in major countries of the world (unit:frame)

The United States unmanned reconnaissance aircraft are gradually becoming mature and become indispensable information support and safeguard means in the modern war. Currently, the United States has the largest number of unmanned aerial vehicles, the highest level of technological development, and the most frequently used combat space in the world (the United States currently has the largest number of unmanned aerial vehicles in the world and has over 60 species of 150 UAV).The U.S. Air Force and Defense Advanced Research Projects Agency have invested millions of dollars in the design of unmanned combat aircraft in the 21st century battlefield ,which predicted that airborne surveillance and reconnaissance missions will be completed by space resources and long-haul unmanned reconnaissance Machine together by 2020. For example, the United States "Global Hawk" high-altitude long-haul unmanned reconnaissance aircraft can be used for continuous surveillance in the target area for 24 hours [4]. In addition to tactical UAV, the United States has added a long-haul includes Predator drones, conventional high-altitude long-haul UAV and low-detect high-altitude long-haul UAV. Three companies, including NorPros Grumman, Lockheed Martin and Boeing, have the world's most advanced research and development technologies for unmanned aerial vehicles; they have built some world-renowned UAV such as the Global Hawk, X-47B and Ghost Ray.

British "Pioneer", BQM-74, TALD were used for intelligence reconnaissance and battlefield surveillance, the execution target instructions, war damage assessment and other tasks are usually performed by means of unmanned aircraft, mini-UAV and solar drone. Britain is actively adopting new design ideas and technologies, it has established a complete system of UAV research and development, which develop the Raytheon UAV and has a great breakthrough in flight time, distance, altitude, speed and stealth capability, reconnaissance and surveillance capability, offensive and Defense capability and combat effectiveness, it can be comparable with the United States RQ-4A Global Hawk UAV.

Israel started and applied early on the UAV, ranking second in the United States. It is a military UAV technology powerhouse. Herons TP and Hermes 900 are used in air force military reconnaissance and electronic warfare. Mini drone (Skylark) was used to perform close-range monitoring of obstructed eyesight, while "ghost" was used to perform missions in the city. France Multi-National "Neuron" Unmanned Combat Validator, European "Barracuda" UCAV / URAV Validator, Sweden "FILUR Verifier" For military reconnaissance, exploration.

TABLE II. WORLD'S MAJOR DEVELOPED COUNTRIES CLASSIC UAV MODEL AND FUNCTION

| Country | | America | | Israel | Europe | | |
|-----------------|-----------------|--|--|--|---|---|---------------------------------------|
| Classify of UAV | Military UAV | type | "Pioneer", bqm-74, TALD, unmanned combat aircraft, miniature drones and solar-powered drones | | Hérons TP, Hermes 900, Mini drone (Skylark), ghost | French multinational "neurons" unmanned combat verification machine ①European "Barracuda" unmanned combat / reconnaissance aircraft (UCAV / URAV) Validator ② Sweden "Innovative low detectable unmanned flight research" (FILUR) validator | |
| | | function domain | Military | Intelligence reconnaissance, battlefield surveillance Target instruction, war damage assessment and other task | | ①Air force military reconnaissance and electronic warfare ②perform close-range monitoring of blocked vision ③ Perform the task in the city | ①Military reconnaissance, exploration |
| | | | Civil | _____ | | ①Marine monitoring, marine pollution assessment, mine monitoring | _____ |
| Military UAV | type | UAV of Ikhana ① Global Hawk | | ① FlytrexAviation eight paddle drone ② Dronomy UAV operating system ③ Helms 450 drone | ①Parrot in France ②French Dlair-Tech UAV ③Omniwork X Netherlands ④British Altitude Angels | | |
| | function Domain | ① assess the severity of the fire and disaster damage estimates ②Hurricane "Nading" for a long time to monitor and collect data | | ①Logistics ②Auto cruise ③Civil | ①Aerial photography,②Check the railway line ③Check the furnace conditions ④Provide information services to registered drone pilots on regulatory policies, topographic data and hazardous areas | | |

^a. Note: ①, ②in the table is the corresponding model and function area

At the same time, foreign countries have started to expand their UAV to civil areas including infrastructure monitoring, fire prevention, disaster and environmental monitoring, border control and management while comprehensively strengthening technological innovation as well as research and development of military unmanned aircraft. Especially in the European drone market, the UAV in other industries are also on the rise with the booming development of consumer-grade gaming such as aerial photography. They provide various services to industry, agriculture, government and help to deploy off-the-shelf machine equipment or professional equipment [5]. For example, the U.S. "Ikhana" drone was used to assess the

severity of the fire and assess the cost of disasters. "Global Hawk" monitored the hurricane "Nading" for a long time and collected data. The Israeli FlytrexAviation eight paddles UAV was used in logistics. French Parrot unmanned aerial vehicles are widely used in aerial photography, the French Dlair-Tech unmanned aerial vehicle was used to inspect railway line, the Netherlands Omniwork X view furnace conditions; the British Altitude Angels provide information services for registering drone pilots, which context covered regulatory policies, terrain Data and danger zone.

In the future, UAV technological innovation will be further strengthened, at the same time UAV will continue to rise and

development in the field of non-military, it will present an explosive growth that the investment in research and development and procurement needs of UAV. It is estimated that the total market value of global UAV systems will exceed 91 billion U.S. dollars by 2024. Among them, the military UAV will reach 81 billion dollars as well as civilian UAV will reach 10 billion dollars [6].

The development trend of foreign civilian UAV is that on the one hand, the development of UAV at high altitudes will be used for atmospheric research and environmental protection and on the other hand, UAV certification will continue to be solved and enable the UAV to fly into civilian control airspace.

B. The status quo of domestic UAV industry

China has more than 40 years of research work on technological innovation of UAV and has accumulated some experience in many technical fields such as overall design, flight control, integrated navigation, data link system, sensor technology, image transmission, information countermeasure and anti-objection. It has a certain technical foundation and successfully developed a CK-1 unmanned target series, Changhong high-altitude unmanned reconnaissance aircraft, T-6 Universal UAV, Z-5 series of unmanned reconnaissance aircraft and ASN series of UAV. So far, the technology of military UAV already has a certain foundation, but there is still a certain gap between China and the developed countries in military UAV such as the task system is not heavily loaded and the platform technology cannot meet the high stealth of unmanned combat aircraft, high maneuverability needs, at the same time the aerodynamic, engine, high-precision navigation and other aspects of the technology still needs to be improved [7].

The civilian UAV industry of China has been booming in recent years. According to the development trend of China's civil UAV industry, the domestic UAV market can be roughly divided into three stages: first stage, which the military monopoly, inertial formation and the control system technology are immature as well as have high cost simultaneously. In the second stage, from the 1990s to the beginning of this century, the market began to "infiltrate" the private sector with the appearance of low-end civil small UAV. In the third stage, after the military demand is saturated, the civil field will blossom everywhere, and the future part of the military industry will also be involved in the civil field, and the industrial has a fierce development momentum [8].

At present, approximately, there are 450 UAV enterprises nationwide, the output value of 2015 is about 130 billion Yuan. China has formed a relatively strong advanced area for UAV industry, including Shenzhen, Guangzhou and Xi'an, as well as well-known UAV enterprises such as DJ and Polefly. At present, there are 300 UAV of various types in Shenzhen; accounting for 70% of the market share of global civilian UAV, the output value exceeds 230 billion. Shenzhen Municipal Government issued "Shenzhen Aerospace Industry Development Plan (2013-2020)" and promulgated the "Shenzhen UAV Standard Specification". Shenzhen UAV Association developed the "Shenzhen UAV technical standards" and "Shenzhen Civil UAV Union standards." In

2016, Shenzhen City supported 12 enterprises which include DJ, electricity, high-tech new farmers and others with a total investment of 402.28 million Yuan. In 2017, the first batch of aerospace industry supported in 2017 is 14 million Yuan.

It is estimated that the market size of China's small civil UAV will reach 75 billion Yuan by 2025. Only the industrial and consumer-level UAV are estimated in this calculation method.

The size of China's small commercial UAV market should also include the value that generated by value-added services such as airborne mission components, application services, inspection and maintenance, which is estimated to reach 250 billion Yuan.

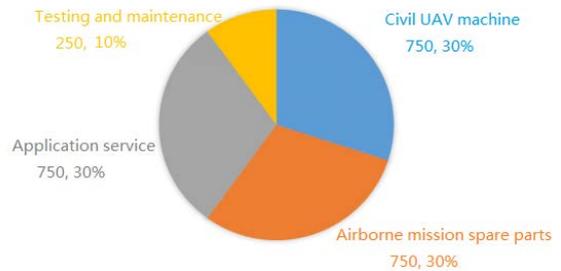


Fig. 2. Overall Forecast of China's UAV Market in 2025 (Unit: 100 million Yuan)

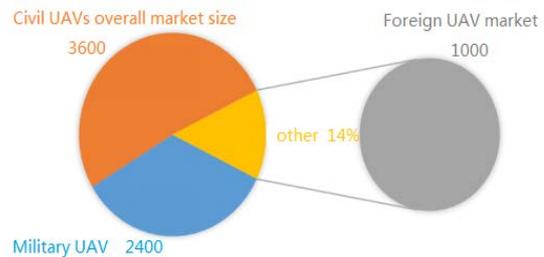


Fig. 3. Prediction of the Overall Size of China's UAV Market in 2025 (Unit: 100 million Yuan)

III. ANALYSIS ON THE INFLUENCE FACTORS OF DEVELOPMENT ABOUT UAV INDUSTRY IN S CITY

A. S city UAV industry status quo

S City is the most important heavy industry base in the equipment manufacturing industry in China and has the reputation of "the eldest son of the Republic." There are strong foundations for the aviation industry, resources for key aviation industry enterprises in the country, 14 R & D and manufacturing bases for central fighters and research institutes, famous fighter planes and aero-engines, involving aerospace, weapons, ships and nuclear industries, the output value of these industry are more than 40 billion Yuan.

S City has a group of well-known aviation research institutes and universities; there are senior technical staff more than 2500 and industrial employees over 100,000 people.

The UAV industry of S City has also had a great degree of development in recent years, it has UAV enterprises more than

20, some units and enterprises have mastered the UAV core technology, it also has a more solid foundation in the UAV industry.

B. Analysis on influencing factors of UAV industry development in S city

1) Lack of integrated UAV industrial base

Currently, S city haven't a centralized UAV test base and lacks a comprehensive Industrial UAV (Aerial Flying Robot) equipment manufacturing industrial park that includes all R & D, industrial, and component manufacturers of industrial UAV, it has not yet created UAV product testing center, did not develop technical standards for industrial UAV and components and it is not conducive to the development of the standardization of the UAV industry.

2) Industrial ecological environment is not perfect

S City UAV lacks a sound industrial environment; the city has not yet formed with enough brand influence of the core manufacturing enterprises. Many UAV products have no supply chain and need to go abroad or domestic advanced regional procurement as well as supporting the lack of manufacturing capacity, there is no formation of core technology companies R&D, assembly, and other types of professional division of labor supporting the sound industrial ecology.

In addition, the supporting policies are also obviously inadequate. S city has not yet established various funds for the UAV industry and lacked specialized professional personnel policies at the same time. As a result, it has a clear gap in the soft environment of industrial development compared with the advanced cities and regions in China.

3) Insufficient supply such as capital resources

For the UAV enterprises in S City, the capital is the top priority; most UAV enterprises have the problem of insufficient funds. On the one hand, some companies invested about 10 million in the early stage, but the output of UAV in the first 1-2 years was about 3 to 5 million with less profits, resulting in a strained capital chain. On the other hand, the external markets often has a price war, While safeguarding the quality of products, enterprises also need to reserve more reserve funds for the price war, which exert great pressure on UAV enterprises. Due to the fact that UAV are mostly driven by value, their core competencies are operating fundamentals, lacking of the fixed assets as a valid guarantee, and they cannot obtain financial support by borrowing from banks.

4) Lack of industry standards and standardization

At present, the UAV industry in S City lacks corresponding industry standards. In recent years, UAV have been increasing year by year. However, there is a lack of a commonly accepted technical standard for UAV. The entry threshold is so low that resulting in an incomplete and unmanaged UAV. Coupled with the lack of uniform, commonly recognized specific industry charges, regardless of the consequences of all businesses and cost desperately gain a foothold, so, the vicious competition among enterprises led to the UAV chaos rebirth; it is not conducive to forming a joint force to promote the healthy development of unmanned machine industry. At the same time, the development of the UAV industry also involves issues such

as air safety and industry regulation, the UAV surveillance issue is outstanding, too. S City lacks the specific norms governing the UAV industry, including flight safety, UAV production and sales access, Flight altitude and speed, flight space and other specific flight regulatory standards.

5) The challenges of industrial restructuring and upgrading

S UAV products have been applied in many fields such as agricultural plant protection, emergency rescue, environmental protection, communications, weather, video and aerial photography and achieved certain achievements. However, the UAV industry has not been established into an industry Clusters, nor establish close cooperation with agriculture, forestry and other related industries. For example, the UAV have a very large demand for agricultural plant protection due to its features such as easily to operate, safety and small, but it is not perfect in S City that agricultural plant protection industry and UAV docking. In addition, some UAV components can be produced in the industry which produces mobile phone manufacturing equipment, the sharing between UAV industry and other industry resource is still relatively scarce, and thus UAV industrial posed a challenge in response to the restructuring and upgrading.

6) Lack of good municipal and business environment

Some companies which located in S City believe that the local municipal business environment is not optimistic, the government lack of support for emerging economic growth point policy, they always want to introduce large-scale and well-known enterprises while lacks of the patience for supporting the local enterprises which is small and micro, resulting in the small and micro enterprises lack of trust to government departments.

Government departments take the initiative to serve the consciousness is not strong and cannot anxious business urgently, think the business idea, its service efficiency and service benefit is not high. Departmental lack of management system and the scientific industrial fund management system. The criteria for industry to apply the industrial funds are unscientific and inflexible, it lacks of a scientific and pluralistic evaluation standard for industrial funds and professional auditing and supervision, which only take the technological innovation (including the number of granted patents, etc.) as single criteria for obtaining the approved industrial funds ,it is also unfair that they don't refer to product sales, development potential, customer evaluation and other indicators, largely dampened the enthusiasm of small and micro enterprises.

7) The challenges of sustainable development and unique development

Among the new economic growth points cultivated in the future, green sustainable development is an important strategic direction. Green environmental protection is the focus of future industrial development. In addition, it is necessary to have industrial characteristics to form industrial highlands, create brand industries, the other aspects such as security and safe have to be strengthened in the further.

S city UAV industry started relatively late, most enterprises are small and micro, many companies have restrict in funding, technological innovation and other restrictions which leads to the enterprises lack of business innovation and independent

intellectual property rights and technology. Some UAV companies haven't a clear positioning and development goals as well as lack of distinctive and differentiated development goals, and thus, it is difficult to meet the challenges of sustainable development and unique development, especially difficult to form UAV industry brand of S City.

IV. AN IMPORTANT MEASURE TO PROMOTE THE STRATEGIC DEVELOPMENT OF NEW INDUSTRIES

It can be deduce about the status quo of UAV industry development in S city and think that almost the same problems exist in the development of strategic emerging industries. We think the factors which affect the development of strategic emerging industries include government awareness, capital policies, institutional mechanisms, Human resources, science and technology platform and culture. The following elements are proposed for the specific measures:

A. Enhancing government awareness, increasing support

Government departments should continuously improve their own important role in promoting the development of strategic emerging industries and step up efforts to support and promote the development of strategic new industries.

The development of strategic emerging industries must receive the strong support of government departments, some projects in the strategic emerging industries pay back relatively slowly, and some basic equipment construction needs strong support from government departments.

Government departments should raise their awareness on the development life cycle of strategic emerging industries, give more tolerance and patience to the development of strategic emerging industries, and vigorously support the development of small and medium-sized strategic emerging enterprises, provide more convenient conditions for the development of the industry, set up green channels in the examination and approval procedures, take the initiative to carry out various types of services for enterprises, and improve service awareness, service efficiency and service quality

B. Improve financial policies, innovative financing model

Local governments should speed up to improve the capital policies, take the form of government-funded and enterprise-assisted social assistance, and establish shared platforms, laboratories, industrial development special funds and talent funds. At the same time, the government should also make clear the fund management system such as the norm of fund utilization so that the fund can use the norm and can spend money on "cutting edge", achieve tangible results.

Government departments need to set up a financial platform for strategic emerging industries and set up special funds for industrial development. Relying on industrial alliances, government agencies should work together with government funds, venture capital institutions and banks to broaden financing channels and innovate financial policy systems.

First, the government should step up fund support and set up a number of government special funds.

Second, encourage society to participate in venture capital. Government departments should comprehensively improve their venture capital policies and encourage and guide social funds to invest in the industry through such means as project subsidy, loan interest subsidy, equity investment and risk compensation.

Thirdly, government departments will formulate and improve relevant laws on hi-tech venture capital as soon as possible, such as intellectual property law and SME management laws and regulations, identify strategic emerging industries as priority areas for development, and guide social capital to support industrial development by improving laws and regulations [9].

Fourth, government departments need to establish a service platform for venture capital. Through the service platform, providing information for venture capitalists and investment projects, establishing a bridge of communication between them and providing services such as market information, decision-making consulting and agency negotiation for investors, venture capital organizations and venture enterprises, as well as providing financial audits and technical appraisals and other aspects of service.

Fifth, government departments need to increase preferential income tax on venture capital gains, appropriately reduce taxes and fees on venture capital gains, exempt enterprises that have not yet achieved capital gains, and provide some tax credits for their investment losses, premising enterprises conduct deduction VAT in technology development costs, transfer of new products and a certain percentage of the amount of input tax, increasing its return on investment. The drop down menu to differentiate the head from the text.

C. To speed up institutional innovation, create a system environment s

The development of strategic emerging industries must be based on institutional mechanisms, it is necessary to speed up the innovation of institutional mechanisms and provide a sound institutional environment for industrial development.

1) Speed up the construction of supply and demand docking platform

Government departments will make full use of big data and "Internet +" means to establish a shared service platform and speed up the construction of supply and demand docking platform, which will set up specialized agencies and designated professionals to take charge of collecting, aggregating and releasing relevant industry information on a regular basis so as to help enterprises, universities, research institutes, financial institutions and intermediary agencies conduct comprehensive docking in talents, science and technology, and activate talent, science and technology resources supply stock to solve the imbalance between supply and demand due to information asymmetry. Through the sharing of information sharing services platform for enterprises and users, intermediaries and other organizations to build bridges of communication and cooperation, promote multi-cooperation and mutual assistance to achieve the double win situation.

2) Innovation incentives

Based on the innovation incentive system of performance appraisal and risk compensation, the development of strategic emerging industries can improve the enthusiasm of industry-related personnel and promote the rapid development of the industry.

First, establish the assessment mechanism. On the one hand, government departments should regard the development of strategic emerging industries as the important work content of relevant government departments, clarify specific job functions, set goals and responsibilities, and implement "negative lists" to enable management departments either do something or they don't, improving service awareness and service efficiency. On the other hand, establish assessment mechanism on enterprises, universities, research institutes, financial institutions, intermediaries and other. All parties should formulate specific work objectives in light of their own circumstances and assess their work performance through a combination of self-assessment and his evaluation of materials.

Second, it is must to establish a risk compensation mechanism. Most of the strategic emerging industries and industrial development are mainly intellectual capital. Some technological innovation work which is crucial to industrial development has a greater risk of failure. Some of the innovative technological achievements have a longer conversion period and no significant short-term benefits. Therefore, all local governments need to establish risk compensation mechanisms, set up special funds, provide policies, funds and projects to enterprises and individuals that carry out a higher level of innovation work, provide certain subsidies at risk, encourage innovative work to be carried out actively, and enhance industries technical innovation ability.

D. To improve the accommodate intelligence system and creating educating depression

The introduction and cultivation of innovative talents is an important indicator to promote the development of strategic emerging industries. Therefore, accommodating intelligence and educating people are important means to improve the level of human resources for the development of strategic emerging industries. Improve the reserve of talent in strategic emerging industries and enhance the capability and level of industrial innovation by improving the accommodate intelligence system and creating educating depression.

1) Accommodate intelligence plan

Government departments should include high-level industry professionals in regional talent introduction policies based on the strategic emerging talent standards and demand plans, provide eligible high-tech and innovative teams with housing, spouse employment, and children's enrollment academic training subsidies and other preferential policies in accordance with the relevant regulations.

2) Talent cultivation

It should be done that comprehensively promote the training of qualified personnel, improve the quality of innovative personnel training, and at the same time formulate policies to attract outstanding talents to stay in the market, improve the quality of qualified personnel in strategic

emerging industries in the region, and raise the level of innovation.

First, we should further promote cooperation among industries, universities and research institutes, strengthen the in-depth cooperation between schools and enterprises, deepen the model of personnel training, and refine the reform of personnel training mode in schools and enterprises, which includes building a school-enterprise alliance, a public practice, training base and productive training base to carry out commissioned training, orientation training, order custom training aims to achieve complementary advantages of resources. Encourage school-owned enterprises to adopt various forms of running schools and encourage enterprises and universities to jointly build a mixed-ownership secondary school with personnel training.

Second, to improve the service ability of college personnel, provide pre-job training, job training, continuing education and training for enterprises staff to enhance the level of staff skills and aptitude for positions.

Third, establishing a smooth flow mechanism between enterprises and universities. Support college teachers to the enterprise research, short-term or mid-term attachment exercise, as well as R & D cooperation and other practical activities. At the same time, enterprises should support some employees with strong industry background and strong ability of innovation and entrepreneurship to serve as part-time innovative entrepreneurship tutors or project mentors in colleges and universities to improve the quality of personnel training in colleges and universities.

Fourth, in order to enable innovative talents to "retain, use, and do well," it should also be done to introduce undergraduates, master students and doctoral students in the region to formulate classified subsidy policies, including the subsidy policies for talented science and technology projects, Promotion policies and personnel development and guiding policies, forming talent depressions.

E. Building science and technology platform, improve science and technology lead

In order to promote the development of strategic emerging industries, all the regions need to speed up the construction of science and technology platforms and integrate resources so as to provide a resource sharing platform for strategic emerging enterprises, universities, research institutes, financial institutions and intermediaries in this region, and promote multi-party cooperation in scientific and technological innovation as well as encouraged many parties to jointly carry out the transformation of scientific and technological achievements to enhance the cooperation in science and technology innovation.

The main measures include:

- Accelerate the construction of industry-shared environment, including basic service center, industrial quality testing center and industrial incubator.
- Accelerate the construction of technical innovation platforms such as common labs. Based on the support

of the fund, the institute will integrate innovations such as research institutes and universities to highlight the technological innovation of industry and enterprises and establish an open laboratory and a common technical laboratory.

- Promote the industrial promotion plan in an all-round way, build industrial technology innovation zones, production bases and productive service gathering areas and speed up the cultivation of industrial ecological chains.

At the same time, it is must to speed up the introduction of strategic emerging industries to lead the policy by accelerating the implementation of priority bidding and subsidy policies, strengthening demand-side reform, speeding up the construction of industrial leading system, through the role of capital leverage to tap and stimulate market potential and create vitality, form the source driving force for industrial development, and build a demonstration base for strategic emerging industries. Through industrial demonstration, they will lead the industry in innovation and development [10].

F. Improving cultural policies, building an industrial environment

Building a cultural atmosphere for the development of strategic emerging industries is the highlight of promoting industrial development. Extensive publicity through various channels, it is possible to raise public awareness of strategic emerging industries and understand the strategic emerging industry interest, improve the cultural of industry.

The various regions can set up strategic alliances for strategic emerging industries, relying on alliances, conducting industrial technology competitions, setting up industrial culture exhibition parks, international and national high-level industry forums and exhibitions, conducting cultural building in an all-round way and enhancing the strategic Emerging industry culture.

Various regions can also carry out a plan of education and popularization to raise the interest of ordinary people in various regions through industry such as "clubs, performances, tours and summer camps", cultivate young people's scientific and technological feelings and improve their practical ability. At

the same time, the demonstration application projects of strategic emerging industries can also be promoted through media such as television and online video, so as to provide a good cultural foundation for strategic emerging industries.

V. CONCLUSION

In short, all regions can adopt a series of reform measures to provide a sound institutional environment, a sound financial environment, a positive cultural environment, a sound industrial chain and a healthy ecological environment for the development of strategic emerging industries so as to promote strategic emerging industries Healthy and sustainable development.

REFERENCES

- [1] Song Lin, Liu Zhao etc. National politics: The Combination of Technology and Market Economy - A Case Study of the Development of Civilian UAV Technology in China [J].Journal of University of Science and Technology of Beijing (Social Science Edition),2016(5:91-93). (In Chinese)
- [2] Chen Shuhua. UAV industry: hundreds billion blue ocean [J]. Decision making, 2015 (6):67. (In Chinese)
- [3] Zhou Yuting, Zheng Jianshi. UAV industry in the whole world. Status quo and trends [J]. Economic Research Guide, 2016 (26): 30.(In Chinese)
- [4] WEN Xian-qiao, Li Ying. Unmanned air vehicle's applied foreground in future warfare from the American development [J]. Modern Defence Technology, vol.(31),No.5,2003:2.(In Chinese)
- [5] Zheng bo, tang wenxian. Status and trend of global UAV industry development [J]. Dual-use technology and products, 2014 (7): 8.(In Chinese)
- [6] Song fujie, xiao qiang. Analysis report of UAV industry [J]. High technology and industrialization, monthly, 2016 (8): 57.(In Chinese)
- [7] He yuqingm, Han Jianda. Robotics Roadmap Theory and Practice [M]. Liaoning Science and Technology Press, 2016:100.(In Chinese)
- [8] Xie Chunmao. UAV system industry development and market research [J]. Science and Technology, 2013 (6): 77-79. (In Chinese)
- [9] Song Lin, Liu Zhao. National Policy: the Integration of Technology and Market Economy—With the Case of China's Civil UAV [J]. Journal of University of Science and Technology Beijing, Vol. 32, No. 5, 2006:97. (In Chinese)
- [10] ZhouZhiyan, ZangYing, LouXinwen, Technology innovation development strategy on agricultural aviation industry for plant protection in China[J].Transactions of the Chinese Society of Agricultural Engineering, Vol.29, NO.24,20013:6-8.(In Chinese)