

RESEARCH ON THE INNOVATION CONSCIOUSNESS OF CHINESE ENTERPRISES

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Abstract

Innovation has a long history. It covers many levels, such as the state, the local, the organization and the individual. As far as enterprises are concerned, the study of economic history has found that there has been a relatively complete rudiment of companies in the ancient Roman era. In recent centuries, enterprises have gradually become the pillar of the economic system, the main birthplace of new technologies, management methods and products, with objective conditions for innovation. From the perspective of external environment, enterprise innovation is also at the right time.

Under the environment of natural economy occupying the dominant position, the enterprise system itself can be regarded as a miracle of human society, without the innovation consciousness of the ancients, there will be no enterprises.

Under the inspiration of the reform dividend and the competitive environment, most enterprises have the willingness to innovate. The work that needs to be done is to integrate innovation motivation, innovation capability and innovation resources, and to overcome innovation bias by using appropriate innovation mechanisms.

Form a chain of continuous innovation. Enterprises that do this can be called a mechanism that has "innovation consciousness", that is, consciously innovating in the fields of organization, system, technology, etc., improving the function of established elements and inspiring sustainable economic performance. China has entered a deep-water zone that comprehensively deepens reforms.

Reform is an excellent field of innovation. Comprehensive reform means comprehensive and high-level innovation. Enterprises are the main members of the national innovation system. The various innovation paths and behaviors of enterprises need to be integrated into the innovation consciousness of enterprises, and solve the problems in the innovation chain such as innovation motivation, innovation ability, innovation resources, innovation guarantee and innovation deviation.

Keywords: innovation, dividends, enterprise

1. INTRODUCTION

More than 2000 years ago, the Chinese classic <The Great Learning> mentioned "If you can improve yourself in a day, do so each day, forever building on improvement. If you can make things better for one day, you should make them better every day and never stop doing this". The outstanding economist Joseph Alois Schumpeter in the last century put forward the famous innovation theory, and believed that the

innovation of enterprises is mainly reflected in really combine production factors into production, management and service systems(Malerba, F., Orsenigo, L.,1995,pp.47-65). According to the different innovation targets and time points, enterprises should be involved in innovation fields such as technological innovation, management innovation and system innovation. Mansfield believes that technological innovation encompasses the technology, design, production, accompanying financial, management and marketing steps required to introduce new products or processes(Mansfield, E.,1983,pp.141-145). In the field of technological innovation, the goal of enterprise innovation is to develop new products through technological breakthroughs, and continue to implement technology upgrades according to market reactions, to maintain a long life cycle of products. There are some differences between the company's technology R&D work and the laboratory work of university. It is more in line with the hypothesis of economic man in the cultivation of innovative ideas, the investment of innovative resources, and the control of innovation risks(Lin,R.H., Peng, W.X.,2009,pp.118-125.). Of course, most of the world's top 500 enterprises have built their own R&D centers or laboratories, and hired professional scientists, but the most important thing for enterprise technology innovation is not simply creating new products or technologies, but creating goods on the business service model, focusing on innovation, gaining market recognition, winning competitive advantage, and carrying out one round of sustainable innovation in order to achieve strategic goals. Institutional innovation was discovered late, Davis and North pointed out that with the changes in market size, the development of production technology, and the expected changes in people's income, innovators only consider the existing system in order to obtain additional benefits,to make changes and ensure that the expected return on change exceeds the expected cost(Olmstead, A. L., & Goldberg, V. P.,1975,pp.193). In the field of institutional innovation, the starting point of the enterprise is to solve the problems of organization and governance. In the history of enterprise development, various new concepts, new systems and new systems concerning corporate property, organizational structure and human resources, finance and assets, operating profit ownership and sharing, risk management and control, corporate image and culture have been born. A large amount of manpower, material resources and financial resources are firmly absorbed around the enterprise, making the enterprise an evergreen tree in the social body and profoundly affecting the economy, politics and life(Yang, Y., Zhu, H.Y., Wu,G.S.,2007,pp.30-34). In the field of management innovation, management exploration in the manufacturing industry has become the origin of modern management science. Both entrepreneurs and front-line producers know that improving production efficiency and saving production costs are related to the survival of the enterprise and the wealth of the individual. Summarize the best methods, processes and models that should be adopted in terms of machine and manpower, information and products, production and circulation, make the enterprise as large as an empire and as accurate as a watch gear. At the same time, management innovation is assisted by learning theory to replicate, improve and even subvert old practices between industries, to form different generations of management style and strategic management innovation, resource management innovation, market management innovation and organizational management innovation practice(Li,W.,Yang,H.T.,2012,pp.89-97). Combining the insights of these scholars, the OECD's view is that: innovation is a continuous activity that originates from the use of technology, as well as production and marketing, with the aim of launching new products and services, winning new markets, gaining business success(Frondel, M., Horbach, J., Rennings, K. 2007,pp.571-584).

In 2014,The Chinese Government pointed out: freed all the vitality of labor, knowledge, technology, management and capital, freed all sources of social wealth in full, accelerate the transformation of economic development, and accelerate the construction of innovative country. This shows that China is looking forward to all-round, high-level innovation. Enterprises are the new force of innovation. The situation and task show that it is not enough for enterprises to have innovation pressure and innovation impulses,we must strengthen our sense of innovation, find out the path of innovation, build an efficient and innovative mechanism, make full use of innovative resources, and form a sense of innovation. For exmople, after the successful development of the world's first water purifier in 1998, QinYuan Group of Zhejiang Province did not satisfy the market position that it has already achieved, but further enhanced its R&D investment and developed a heatless bile hot water dispenser. It has broken the monopoly position of European and U.S.A in the field of water appliances, and has achieved an important shift from industry followers to industry leaders through innovation capabilities. At present, QinYuan Group has more than 200 patents and has authorized more than 100 batches of patents to become innovative highlands. After the enterprise has advanced products, Ningbo Dongfang Cable Co., Ltd. further adjusts its innovation strategy and seizes the commanding heights of the industry to occupy the commanding heights of the industry. Since 2004, it has participated in the formulation of national standards. In 2008, the company was the first responsible organizer to draft a large-scale submarine cable industry and national standards. Therefore, the main body of this paper is to study the innovation consciousness of Chinese enterprises.

2. METHODOLOGY

The main interest of this paper is to carry out innovative theoretical research. The research methods are mainly based on the full possession of literature, field research and extensive solicitation of expert opinions to carry out theoretical logical deduction, hypothesis and induction. Mainly include: First, literature analysis. Because of the environmental factors of innovation and the motives of innovations is fuzzy, it is of great significance to find and identify clues of innovation through literature analysis. Among them, the literature includes papers, books, government documents, records of leaders' speeches, newspapers and magazines about innovation, and related materials on the Internet. These documents not only interpret innovation and its influencing factors from a theoretical perspective, but also reflect the practical views and views of innovations such as government, enterprises and the public. Second, the field research method. The field research method mainly adopts the interview method, and the interview method adopts the combination of face-to-face interview, telephone interview and mail interview. The interviewees of this project include experts and scholars engaged in relevant research, innovation policy makers, business management personnel, enterprise staff and the public.

3. RESULT

The study found that many Chinese enterprises are willing to innovate, and some Chinese companies are forced to innovate. Their innovation decisions are influenced by external factors such as economic technology, social politics and government admonition. Within the enterprises, there are some innovative powers, innovative resources and innovative mechanisms to support them to innovate.

3.1 Analysis of the External Causes of Chinese Enterprises' Willingness to Innovate

3.1.1 Economic and Technical Reasons

Today's innovation has profoundly affected individuals, nations and humanity. With the rapid development of economy and technology on a global scale, the survival and development environment in which enterprises are located is becoming more complex. The current informationization, globalization and intelligent trends that dominate the world economy and technological development provide a soil for enterprise innovation.

The trend of informationization enables enterprises to quickly understand the internal, external, political, economic and market changes. It is convenient to compare products, technologies and management, so that the strategic decision-making of the enterprise is in a better information atmosphere to reduce information asymmetry. The challenge brought by informatization is that the information of the enterprise will be transmitted to the competitors continuously. The enterprise may have imitators and chasers in resources, technology and products. Once the response is slow in a certain link or the decision-making is not working, there may be a dilemma of backwardness and backward recruitment.

Globalization has enabled enterprises to become more deeply integrated into regional, inter-regional economic maps and various political forces. At this time, enterprises are not only transforming the value of customers and their own shareholders, but in the global value chain, the external market of the enterprise is wider than ever, and the challenge that comes with it is that the external development environment of the enterprise is more uncertain, and the enterprise is always in the process of "going out". It may be attacked and captured by other capital forces. On the other hand, enterprises are faced with more diversified markets, rivals and customers. If they are not well adapted to them and attract them, there will be not adapted to the environment.

Wisdom is a major consensus among scholars and entrepreneurs recently. It is recognized that the resource drivers of economic development will eventually be exhausted, and new solutions must be found. The driving of knowledge elements is an important dependence of enterprises since the last century. The rise of the information technology revolution and the Internet economic tide to the era of big data cause a great impact. On the one hand, the production and transmission of knowledge have multiplied, the value of knowledge has inflated, and the combination of knowledge & capital is inseparable; on the other hand, it has profoundly changed the way of business management, competition and enterprise value calculation since the industrial revolution. Today's enterprises, whether they are in the traditional economic sector or in the "new economy", if they do not have their own characteristics in the application of knowledge, and do not change the will and actions of the original survival and development solutions, it is likely to be drowning in the wave of knowledge economy.

3.1.2 Political and Social Reasons

The political and social development of the current world runs through the spirit of reform and action, both stimulating and forcing enterprises to innovate.

In the second half of the 20th century, a new public management movement was launched in the field of western government management, criticizing the dull, inefficient and wasteful management of old-style government, advocating the management thinking and style of private enterprises, implementing customer orientation, and clarifying the government's ruling functions and service function, transforming management behavior into governance behavior. In the economic field, in order to overcome the impact of the economic cycle, various countries have carried out reform experiments. At the macro level, they have tried to reshape the way the government participates in and intervenes in the economy, actively absorb emerging technologies and management results, forming a new economic trend that has strengthened the globalization trend. In the social field, ways of people's communication, community building and maintenance have undergone profound changes. The entire human society is in an unprecedented wave of change, and enterprises are no exception.

In China, the 40 years of reform and opening up have greatly liberated and enhanced productivity, completely changed the way resources are allocated, created a relatively complete market environment and an active market atmosphere, made China's economy vibrant. Among the contributions of the Chinese economy, demographic dividends, resource dividends and reform dividends are often mentioned. The Chinese Government now values the reform dividend very much (Chi, F.L., 2013, pp.1-4). Enterprises are the main drivers and beneficiaries of the reform. Before the reform and opening up, the ownership patterns of Chinese enterprises were very simple, their dependence on the government was very strong, their vitality was obviously insufficient. In the reform, Chinese enterprises have grown rapidly. On the one hand, Chinese enterprises are good at using abundant resources and low labor cost advantages, seizing the opportunities of international industrial upgrading and internal & external demand. On the other hand, Chinese enterprises have carried out a large number of technological innovations, systems innovation, management mechanism innovation, subject innovation and behavior innovation, these kind of innovation form an integration trend, that is, where reforms, where have innovations, innovations help reform measures fall.

On several occasions, China Premier Li Keqiang proposed to use the reform dividend to replace the demographic dividend and resource dividend on which the past economic growth relied. The implications of this judgment for the company are:

First, compared with the resource dividend and the demographic dividend, the dividends brought by reform and innovation are inexhaustible. Economic growth is inseparable from factor driving. On the one hand, the high-speed and extensive growth model at the expense of natural resource depletion is increasingly constrained by resource shortages and even evolved into a resource-environment crisis, which will surely give way to some new economic forms represented by the knowledge economy and smart industries. Innovation is the core of this new economy; on the other hand, in the competition of various production factors, the exclusive status of human resources is relatively declining, the low-cost advantage has been shaken, many labor-intensive industries have turned to "substitution for machines". At the same time, as China's population is aging at unprecedented levels, the labor supply will turn from abundance to tension, labor costs will rise. The follow-up pension and medical burden of workers will erode demographic dividends.

Second, the combination of innovative means and reform path makes the value of the reform dividend higher. With the opportunity and atmosphere of reform, innovation has a stage. Reform begins with emancipating the mind, breaking the imprisonment, and active thinking becomes the soil of innovation. The reform calls for all the best, allowing all kinds of bold attempt, and the tolerance of the system expands the space for innovation. The reform advocates hard work, designing the path of riches. China's practice proves that the 40 years of reform and opening up is precisely the period of innovation and activity. With the catalysis of innovation, the speed and dividends of reforms have greatly exceeded expectations. Among the reform measures implemented by China in various fields, the proportion of highly innovative and even completely innovative measures has been quite high. In the corporate sector, reforms have issued passes to the non-public economy, and innovation has made this group even more powerful. Alibaba and Taobao represent China's e-commerce enterprises. With the help of reform potential, they have achieved tens of billions of dollars in innovation. The commercial record of the daily turnover reflects the dual power of reform and innovation dividends.

3.2 Analysis of the Formation Path of Chinese Enterprises' Innovation Consciousness

3.2.1 Innovative Motives of Chinese Enterprises are in Line with the Management Principles

According to the explanation of the new behaviorism, the behavior is constructed according to the stimulus-response-behavior (S-O-R) system, which is caused by the stimulus, which comes not only from internal factors but also from the external environment. There are generally three ways to generate motivation: including the engine by strong internal needs; the engine touched by strong external incentives; the engine combined by internal needs and external incentives. According to comprehensive theoretical research and corporate management practices, we find external factors such as policy orientation, market choice, international environment, technological change, customer innovation experience and internal factors from shareholders, management, employees, etc., plus corporate culture, innovation costs, innovation related factors such as risk have restraining or stimulating effect on the enterprise's innovative motives. Furtherly explaining: First, the size of the enterprise. Meyers's research shows that enterprises of different sizes do not differ much in their performance of innovation activity.(Meyers,C.,2007,pp.309-318). One of the strongest supporting evidence is that more than half of the major technological innovations at 20 century have come from SMEs. Second, from the market factors. Arrow believes that a completely competitive market is more likely to strengthen the company's innovation motives than a monopoly market(Rubinstein, M.,1975,pp.812-824). Schwartz believe that the innovation of enterprises is more active under the market structure, market competition, product differentiation, enterprise scale and barriers between monopoly and perfect competition(Schwartz, C.A., Dickinsont, B.W.,Sontagt, E.D., 1984,pp.159-172). Third, on the entrepreneurial side, some people think that the entrepreneur's unique vision can see the profit opportunities brought by innovation, and thus tend to innovate, but entrepreneurs must also consider some financial factors, the enterprise's profit expectations, financial status, equipment degree and sales situation,these factor will affect entrepreneurs' decision-making in different degrees and even reject innovation. Fourth, other common factors. For example, research shows that social needs, government incentives and advocacy often become incentives for innovation and so on.

Through the life cycle theory, you can better understand the innovation motivation of enterprises. This theory can explain the macroeconomic cycle of operation, as well as explain the evolution of the industry and the development of the enterprise's ups and downs. Any industry will show different trends with the high level of the industry, the size of the market, and the speed of technological progress, just as the economists describe the sunset industry and the sunrise industry. Any enterprise is a link in the industrial chain or value chain and cannot resist this rule. The entrepreneur's vision is to become a "hundred-year-old enterprise". To do this, we must ensure that the enterprise rises in the industry chain or enters new and more vital industries. Enterprises must have a purposeful, rhythmic implementation of innovation, and thus the enterprise has innovative motives. The enterprise life cycle theory also inspires the current coexistence of traditional industries and new economies. On the one hand, traditional industries still have stable demand and reasonable output methods, while others rely on path dependence to survive. There is still room for technological innovation, and its innovation is adapt to the rhythm of stability. However, the new economy that is coming quickly can gain more favors in resource input, but its institutional foundation and management foundation need to be strengthened. In comparison, it has a greater risk of innovation, sometimes even subversive. Enterprises should make corresponding innovation choices according to the industrial circle and industrial development nodes.

3.2.2 Deviation of Chinese Enterprises in Innovation Planning

It is necessary to promote the innovation and consciousness of enterprises, and to identify and solve the bias factors that influence innovation with the reform vision. The European Union's statistical agencies classify innovation barriers into four categories: risk and capital, internal knowledge and skills, external knowledge and skills, and rules(Li,W., Yang,H.T.,2012,pp.89-97). Other studies have shown that corporate innovation barriers include: high risk, lack of funds, insufficient research and development capabilities, poor personnel quality, lack of market information, poor ability to respond to the outside world, and easy to imitate innovation. For Chinese enterprises in a reformed environment, the more explicit innovation bias factors are:

·Understanding of the Innovation National Policy is not Deep

Innovation has become a national policy for China. The time for enterprises, especially SMEs, to understand the benefits of innovation is still insufficient. In particular, a large number of SMEs with low-end industrial chain divisions are also accustomed to resource-dependent and labor-intensive. The growth mode has no sensitivity and urgency for transformation and innovation.

·Unstable Innovation Willingness

At present, the development environment of Chinese enterprises is more complicated, the external demand is shrinking, currency appreciation, the friction of foreign trade, the instability of domestic demand, the rising of raw materials and labor costs, etc., have caused a large number of enterprises to be passive. In the case of sluggishness, many enterprises have chosen to shrink their business fronts, reduce spending, and weaken support for innovation, so that innovative people's desire for innovation, work attitude and innovation results are affected and restricted.

·Fuzzy Choice of Innovation Direction

In the dimensions of technological innovation, management innovation and institutional innovation, Chinese enterprises pay more attention to the technical level, and management innovation is relatively lagging behind. In the endogenous technological innovation and the choice of external forces, enterprises are more inclined to buy equipment, invite experts, etc., prefer short-term products, and have insufficient willness to invest in long-term scientific and technological personnel.

·The Depth of Innovation is Lacking

Intellectual property is a direct indicator of the level of innovation. Driven by the enterprises independent research and the government patent subsidy policy, China's intellectual property work has progressed rapidly, and currently has a good performance in the number of patent applications and authorizations. However, further analysis found that the core invention patents in China's enterprise patents accounted for a relatively low proportion, the patent applications to overseas was less, the proportion of effective patents was not high, and the number of patents was higher than the quality of patents, indicating that technological innovation in Chinese enterprises has not yet achieved leap.

3.3 Analysis of Important Mechanisms that Contribute to Chinese Enterprise Innovation

Innovation is a systematic project to mobilize internal and external resources of enterprises. In the process of innovation evolution, the key mechanisms include:

3.3.1 Internal Coordination Mechanism

Foreign scholars use nonlinear theory to reveal the overall collaborative operation mechanism of the innovation process and the co-evolutionary paradigm of technological economy(Zhang,Z.Y., Chen,J.,2008,pp.61-67). The synergy of innovation is essentially the internal establishment process of the innovation system, driven by a certain innovation culture atmosphere. The components are collaboratively responsive to innovation, promoting the emergence of innovation, and making innovation tend to be conscious. This kind of synergy means the synergy of enterprise strategy, corporate culture, enterprise organization, enterprise technology, and it is no longer the single leading innovation of the technical department. The more important meaning of this synergy is to eliminate the innovation resistance existing in the enterprise.

3.3.2 Incentive Mechanism

In the enterprise,the incentives subject are enterprise owners & management officer,the incentive objects are enterprise technology innovators.the incentive can be subdivided into two aspects: spiritual incentives and material incentive systems(Bai,J.H., Chen,Y.H., Li, W.,2008,pp.409-413). The innovation desires, work attitudes and innovation achievements of enterprise innovators will be affected and restricted by various conditions. It is not enough to have innovative slogans and innovation strategies. Whether continuous innovation can largely depend on whether there have an entire incentive system to stimulate the enthusiasm of enterprise employees to promote and participate in enterprise innovation.

3.3.3 Interactive-Reflexive Mechanism

The innovative interactive-reflexive mechanism stems from the triple-helix model of the enterprise-government-research sector in the process of innovation. The traditional innovation is the support of the scientific research department (colleges and universities)-enterprise (production-research relationship). With the creation of knowledge and institutional changes, the government joined in and formed the relationship between production and research(Tu,J., Li,J.Z.,2006,pp.411-417). The overlap of the research community, business and government becomes a source of innovation. Each party, while fulfilling its mission, also plays the role of other participants and puts more energy into innovation. For example, the government has changed from a management role to a resource provider, a service provider and an innovation guarantor.The research department itself is also brewing enterprise and industrialization. With this

mechanism, enterprises can easily introduce external innovation resources, and make the innovation results of enterprises more outward and more convenient.

3.3.4 Guarantee Mechanism

Safeguarding innovation can mobilize talent, capital and other factors. The aforementioned internal synergy mechanism for enterprise innovation and the interaction mechanism between industry, government and researcher mainly focus on planning in this area, such as the Small Business Innovation Research Program (SBIR) and the Small Business Technology Transfer Program (STTR) introduced by the United States.

Safeguarding innovation requires legal means. Intellectual property law is a comprehensive protection solution for various spiritual wealth including invention and creation, Intellectual property law is also the core of protection technology innovation. At present, intellectual property protection has become a global trend. Especially after the World Trade Organization passed the Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS), the protection of intellectual property rights for innovation begins before innovation (such as patent search according to law), which runs through innovation. The entire process (such as comprehensive protection of patented technology and non-patented technology), intellectual property protection covers visible products and invisible method patents, patents for industrial processes and plant origin protection for traditional fields. Innovators can guarantee the results of innovation by applying for authorization, applying for compulsory licenses, applying for injunctions, licensing according to law, transferring and proposing intellectual property rights.

3.3.5 Learning Mechanism

The popular view of economic management puts forward the topic of hard power and soft power of enterprises, while the authors raises it to the theory of enterprise ability(Zhang,G.M., Wen,Q.X.,2010,pp.126-132). Soft power actually targets the innovation ability of enterprises, and can clearly divide the innovation ability of enterprises into technology-relevant capabilities, market-related capabilities and integration capabilities. Technical capabilities exist in research and development, product design, manufacturing and other aspects; market capabilities are reflected in product design, product marketing, sales execution and other activities. Through the matrix combination of technical ability and market ability, it can be judged where the innovation breakthrough of the enterprise is. For example, in a market with unclear division of specialization, production and sales are important innovation goals of the enterprise; under the condition of homogenized product competition,enterprises should shift their innovative attention to the development of differentiated products and innovate in product performance, design and user interface. Emerging learning theories suggest that the stronger the absorptive capacity of enterprises, the stronger their ability to manage the external environment, and the more opportunities they have to introduce competitors' spillover knowledge into the enterprise. This knowledge can be used to strengthen corporate innovation ability.Closely related to absorptive capacity is the ability to integrate, because the absorbed knowledge must be integrated into the existing knowledge structure to function, and different knowledge needs to be integrated, transformed and integrated.

4. CONCLUSION

Driven by the innovation consciousness of Chinese enterprises, it is foreseeable that more and more resources will be included in the chain of innovation, especially the five elements of people, finance, materials, technology and information. First, people's roles can be divided into two types: those who provide ideas and those who turn good ideas into innovations. Compared with the traditional team of engineers and R&D personnel, we can find that the influence and contribution of the personnel of other enterprise functional departments to the innovation activities has increased significantly, and the momentum of innovation of all employees has emerged. At the same time, the economy and society outside the enterprise have emerged. Interest groups in the network may also become providers or initiators of innovative ideas, such as customers, suppliers and even competitors. Second, the source of wealth is more extensive, in addition to corporate research and development investment, the government's special technology reform fund, technology funds, bank credit funds and the risk-creating investment funds that have been popular in recent years can be used by enterprises. Third, the venues, facilities, equipment, instruments and materials required for technological innovation can be owned by enterprises, and they can also use technology business incubators, regional equipment and equipment sharing service platforms. Fourth, the technical resources available to enterprises are increasingly represented by patents and non-patented technologies. Due to the existence of legal rules that are patented in advance but are subject to the use of patented technologies, the extraction and integration of patented technologies requires legal procedures, and under the amplitude. Fifth, technical information and market information are the information sources that must be

mastered by enterprise innovation activities. The former helps enterprises to choose reasonable innovative technology routes and implementation plans, while the latter helps enterprises choose the right product solutions and product application fields. Regardless of the innovation of any model, it is necessary to search, acquire, integrate and utilize innovative resources, as well as the flow and dynamic renewal of innovative resources. At the same time, it is necessary to integrate the above resources into the outside of the enterprise (between upstream and downstream enterprises, between enterprises and customers, between enterprises and governments, between enterprises and research departments) and within the enterprise to integrate behaviors, building cooperation innovative atmosphere.

5. ACKNOWLEDGEMENT

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