

# The Impacts of Knowledge Sharing on Development of Chinese High-tech Companies: A Social Exchange Perspective

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## ABSTRACT

Nowadays, with the rapid development of high-tech and economic globalization, technology enterprises have become the main force in promoting China's economic growth. With the advent of the information age, high-tech technology and mechanical equipment are applied to all aspects of life. In the field of management science, as a core feature of social exchange theory, the principle of reciprocity is widely used to explain various exchanges in organizational contexts such as organizational citizenship behavior and leader-member exchange. Only through creation, accumulation, transfer, sharing and application can knowledge become an important asset for the survival and development of an enterprise and ensure that the enterprise has an advantage in the current market competition. The social exchange theory provides a framework to understand knowledge sharing, which benefits development of high-tech companies in China in many aspects such as innovation and sustainable development.

**Keywords:** Chinese high-tech companies; Corporate innovation; Knowledge sharing

## Preamble

In the Chinese market economy system, the pressure of competition between the same industries is gradually increasing, and the competition of enterprises is essentially the competition of talents. Enterprise managers are also fully aware of the importance of talents as hidden resources, especially high-tech companies. The learning ability and creativity of the employees themselves are unlimited knowledge capital and the basic driving force for the sustainable development of enterprises (Gao et al., 2020). However, in the process of looking at knowledge workers, some companies ignore the particularity and demand of knowledge workers in high-tech enterprises as human capital, and only pay attention to their capital, without giving dynamic analysis of demand and development. Enterprises often only pay attention to the value and benefits created by knowledge-based employees or teams for the enterprise, but do not pay attention to the realization and development of their own value (Xu & Li, 2019).

The management of high-tech companies is critical issue that influences the development of economy. The employees in knowledge-based high-tech enterprises are very independent and have very clear career plans. If these basic job demands are not respected by the enterprise, it will cause employees to form the illusion that they are not really valued. In the process of talent management, most companies focus their incentive mechanism on material incentives and performance appraisals (Ming et al., 2019). They are often negligent about the sustainable development of employees and the improvement of their own abilities and fail to meet the individual needs of employees and their ability development appeals. The reason is that due to the lack of corporate culture, there is no cohesion, and there is no room for improvement, resulting in the blindness of employees, and ultimately causing talents to change jobs.

This article reviews and analyzes the literatures on knowledge sharing, particularly on knowledge sharing in high-tech companies. From the social exchange theory perspective, this

article discusses the factors influencing knowledge sharing as well as the impact of knowledge sharing on the development of high-tech companies in China.

### **Management of High-tech Companies in China**

With the continuous development of the national economy and science and technology, science and technology enterprises have become new things after the reform of the science and technology system, engaged in scientific research, technical consultation and technology development (World Bank, 2020). At present, there are many definitions of high-tech enterprises. This study summarizes them as enterprises that use high-tech to produce high-tech products, provide high-tech services, and create economic value through the novelty and monopoly of high-tech. Science and technology enterprises are different from general enterprises. It emphasizes that knowledge is an important part of capital. In the era of knowledge economy, knowledge capital, especially knowledge innovation and knowledge sharing, as the engine of technology enterprises determines whether enterprises can compete in the fierce competition (Xu & Li, 2019).

As the main force of the information age, technology-based enterprises play an important role in modern society (Gao et al., 2020). With the continuous advancement of the information age, more and more people pay more and more attention to technology-based enterprises. Moreover, the state attaches more importance to technology-based enterprises, and the entire technology-based industry is developing rapidly (Ming et al., 2019; World Bank, 2020). The development of technology-based enterprises requires the support of scientific and technological innovation and requires employees to continuously share knowledge to achieve good development of the enterprise and benefit the entire society.

Employees in knowledge-based enterprises, such as high-tech enterprises, have certain characteristics. The most basic thing is that the work is highly innovative. For high-tech companies, innovation is the foundation of development. Therefore, knowledge-based employees of high-tech companies will continue to collect new information in the process of work, to develop new products and establish new plans. These work behaviors have improved the industry competitiveness of enterprises to a certain extent (Usman et al., 2018; Xu & Li, 2019). In addition, the labor process of knowledge-based employees in high-tech enterprises is not easy to control. Because of the unknown nature of their work, it is useless to monitor their labor (Ming et al., 2019; Xu & Li, 2019). This makes it difficult to carry out a very detailed quantitative analysis of the labor results of knowledge-based employees in high-tech enterprises. Innovative products are also the credit of the entire team, and it is not easy to separate them.

### **Social Exchange Theory**

The social exchange theory has deeply excavated the deep-level factors of social exchange from the aspects of exchange principles and exchange relations. In terms of theoretical application, social exchange theory has been widely used in the field of organizational management and has become the mainstream theory to explain organizational behavior (Arsawan et al., 2020).

In terms of exchange principles, modern social exchange theory believes that the premise of the relationship between the two parties developing into trust, loyalty and commitment over time is that both parties abide by the common exchange principle. The exchange principle defines the behavioral norms of both parties in the exchange, and the exchange relations constructed based on different exchange principles are also different (Choi et al., 2019; Fan et al., 2019). The relevant research focuses on the principle of reciprocity and the principle of negotiation. Regarding the definition of reciprocity, some scholars define it as:

"constructing the moral code of the obligation to help and reciprocate", and propose three forms of exchange - interdependent reciprocity, belief-based reciprocity, and moral reciprocity. The principle of negotiation refers to the mutual negotiation of exchange conditions, exchange results, etc. between actors to reach contractual and binding exchange agreement on both parties. Negotiated exchange is an economic exchange. A detailed and fair contract is formulated in advance, and the responsibilities and obligations of both parties in the exchange are clear (Chernyak et al., 2018).

With the deepening of research, other exchange principles gradually attracted attention. Some scholars have pointed out that the process of social exchange is also the process of individual decision-making. In addition to the principle of reciprocity, the principle of individual decision-making also includes the principle of rationality, the principle of altruism, the principle of collective interests, the principle of status consistency and the principle of competition (Arsawan et al., 2020). Among them, the rational principle refers to the participants using logic to determine the goal and the method to achieve the goal. Rational action includes two aspects - maximizing the value of the goal and logical means to achieve the goal. The principle of altruism means that both parties in the exchange will strive to meet the needs of the other party even if it may harm their own interests (Castaneda & Cuellar, 2020).

The principle of competition is the opposite of the principle of altruism, which refers to doing as much harm as possible to the interests of others even if it may harm one's own interests, such as seeking vengeance. The principle of collective interest means that the benefits of all collective members are put into the collective, and members can claim them when needed. The principle of status consistency refers to social exchanges based on the status of individuals in a social group. It can be seen that the relevant research on the exchange principle focuses on the principle of reciprocity and negotiation and does not explore other principles in depth (Chernyak et al., 2018). However, with the great abundance of material resources brought about by the first three industrial revolutions, the phenomenon of social exchange based on other principles such as the principle of altruism and the principle of collective interests has become increasingly common, but relevant theoretical research has not followed the changes in this social reality.

The early social exchange theory regards exchange as a strategy that individuals are driven by self-interest in pursuit of maximizing returns, but the limitations of this view are gradually emerging. Fan (2019) pointed out that the essential difference between economic exchange and social exchange is that social exchange contains non-specific responsibilities and contributes to social relations such as trust and gratitude (Fan et al., 2019). Unlike earlier social exchange theory, which emphasized that participants pursue maximizing returns in the exchange process, modern social exchange theory focuses on the development of social exchange relationships, viewing social exchange theory as a theoretical model for understanding intimacy, love, and long-term relationships. Some scholars divide the exchange relationship into the relationship based on economic exchange and the relationship based on emotional exchange (Arsawan et al., 2020).

Most of the studies are based on the principle of reciprocity to explain the changes in individual cognition, psychological process, attitude and behavior. Some scholars have reviewed the principle of reciprocity from the aspects of concept elaboration, measurement methods, and existing empirical research (Obrenovic et al., 2020; Tamsah et al., 2020). The study found that although reciprocity is a general rule that all human beings follow, individuals value reciprocity in different degrees. Therefore, a large number of empirical studies use exchange orientation, exchange ideology, and reciprocity orientation to measure individuals. It is important to pay attention to the degree of reciprocity. Some scholars have pointed out that the tendency of mutual benefit affects individual behavioral decision-making and information

decision-making. Further, the study found that the characteristics of the exchange party will affect the choice of social exchange methods, such as employees' identity, leadership style and so on. Among them, employees with self-identity tend to negotiate exchanges, employees with relationship identities tend to reciprocal exchange, and individuals with collective identities tend to generalize exchanges is false.

In the research on leadership style, some scholars pointed out that transformational leadership will lead to general exchanges of employees, and transactional leadership will lead to employees' negotiation and exchange of reputation. Modern social exchange theory deeply explores the principles, relationships, and applications of social exchange, and shows us more systematically the essence of social exchange. Social exchange is not based solely on the principle of reciprocity, exchanges based on other principles also exist, but receive less attention (Arsawan et al., 2020). Although the principle of reciprocity is widely applied in practice, exchanger characteristics, such as the exchanger's reciprocity tendency, can influence the type of social exchange. The establishment of the exchange relationship between the exchange parties and the process of the relationship from sparse to dense are affected by situational variables such as the motivation of the exchanger (Chernyak et al., 2018).

### **Knowledge Sharing**

Knowledge sharing behavior began to become a new field of knowledge management theory research in the mid-1990s, and there are many research results on knowledge sharing (Tamsah et al., 2020). Research shows that employees' knowledge sharing behavior has a positive impact on the market efficiency of enterprises. Knowledge sharing is the composition of individuals exchanging their explicit and tacit knowledge with each other and using this knowledge to jointly create new knowledge. In fact, knowledge sharing is a selective interaction process carried out by people in a certain environment. Enterprise employees will not only choose different interaction objects, but also choose different knowledge to share with them because of different objects.

Researchers argued that the so-called knowledge sharing refers to the understanding of the professional knowledge, skills, experience, values, interpersonal network and work process of the batch of enterprise employees (e.g., Usman et al., 2018). The degree of knowledge sharing is closely related to the knowledge recipient, and the knowledge recipient's methods and skills, learning attitudes and behaviors, and recipients and recipients (enterprise employees) are determined by each other degree of knowledge sharing (Usman et al., 2018; Xu & Li, 2019). The role of market function in promoting knowledge transactions and emphasized the importance of trust.

Enterprise knowledge sharing belongs to organizational knowledge sharing, including knowledge sharing within an organization and knowledge sharing between organizations (Castaneda & Cuellar, 2020). The former emphasizes mutual communication and sharing of knowledge among employees, so that knowledge can be spread from personal possession to organizational possession; the latter includes knowledge sharing between enterprises and enterprises, between enterprises and governments, between enterprises and banks, and between enterprises and local administrative units (Yams et al, 2022). At present, the focus of domestic and foreign research on the influencing factors of knowledge sharing mainly includes three aspects: the subject of knowledge sharing, the object of knowledge sharing, and the environment in which knowledge sharing is located. The subject of knowledge sharing is the initiator of knowledge sharing, the object is the receiver, and the environment is the atmosphere in the process chain of knowledge acquisition, transfer, and application (Obrenovic et al., 2020).

## **Types of Knowledge Sharing**

Knowledge sharing in the company can be conducted in different methods. The essence of enterprise knowledge sharing is the technical exchange and discussion of employees within the enterprise. Various technical exchange seminars are often held within the enterprise for the exchange of technical experience among the employees of the enterprise (Azamela et al., 2022). This method is the main method of enterprise knowledge sharing, and it is also the most common method, and its efficiency is relatively high. Moreover, the effect of technical exchange is also considerable, and it is a method that companies are competing to use (Tamsah et al., 2020).

The types of communication between individual employees of an enterprise are diverse. Some employees have technical exchanges with employees who have a good relationship with them and who have frequent daily work contacts. Some of these exchanges are face-to-face; some are conducted through chat tools and so on (Azeem et al., 2021; Castaneda & Cuellar, 2020). This realizes the sharing of enterprise knowledge, which is conducive to mutual progress, can complete daily work more efficiently, and promote the innovation of knowledge within the enterprise (Haefner et al., 2021). This approach is informal, but very effective. In addition, enterprises can promulgate some relevant rules and regulations to guide the sharing of knowledge within the enterprise. In today's highly developed informatization, enterprises use computer technology to generate a database of employees' personal technical experience, and store them in the form of coding, so as to provide reference and reference for relevant employees and realize enterprise knowledge sharing (Gao et al., 2020; Ming et al., 2019).

## **The Impact of Knowledge Sharing on Innovation**

Enterprise innovation refers to the behavior of increasing enterprise value by developing new production methods, increasing capital, new products, and services, updating and improving management models in the process of operation and management (Kom & Shim, 2018). It runs through the entire dynamic of the company from beginning to end, that is, runs through every unit and every detail. Only through continuous innovation can enterprises adapt to the rapidly changing market. According to the application of innovation, enterprise innovation includes organizational innovation, technological innovation, management innovation, marketing innovation, etc.; according to the degree of innovation, enterprise innovation can be divided into basic technology innovation, engineering technology innovation, customer-centric innovation and efficiency-driven innovation (Castaneda & Cuellar, 2020; Obrenovic et al., 2020). According to the nature of innovation, enterprise innovation is divided into R&D innovation and non-R&D innovation, of which non-R&D innovation includes four categories: technology and knowledge adoption, reverse engineering and imitation innovation, integrated innovation and market innovation (Krstic et al., 2018).

With economic development entering the era of knowledge economy, knowledge sharing, and cooperation have gradually become the research trend and practical development trend at this stage. When an enterprise caters to the upsurge of knowledge sharing and implements knowledge sharing work, it may generate a certain impetus for the innovation ability of the enterprise from the three paths, and gradually become the basis for the enterprise to acquire and enhance its core competitiveness (Swanson et al., 2020; Tamsah et al., 2020). The external activities of enterprises in knowledge sharing work, including knowledge sharing with banks, governments, and local administrative units, will largely depend on the bank-enterprise relationship, government-enterprise relationship and geographical relationship operated by the company itself. When an enterprise conducts knowledge sharing work with these three objects, the enterprise can obtain information on policy changes first, obtain the support of geographical units with a greater probability, and become more comfortable in

investment and financing activities, thereby contributing to enterprise innovation activities. have a positive impact (Latifi et al., 2021). The external activities of enterprises, specifically, the knowledge sharing work between enterprises, and the objects of such knowledge sharing are more reflected in the enterprises in the same supply chain. When an enterprise has a friendship other than interests with larger suppliers and distributors, the ability of the enterprise to take risks can be greatly improved, and the enterprise will have greater courage and capital to formulate more promising strategies, and these strategies may Including increased investment in corporate innovation capital (Azeem et al., 2021; Swanson et al., 2020). The activities of employees within the enterprise can transform personal tacit knowledge into explicit knowledge of the organization. When the degree of knowledge sharing within the enterprise is high, it also means that the corporate governance structure and incentive policies have better results, which can not only help the enterprise to achieve the greatest accumulation of knowledge resources, but also the innovation vitality that is indispensable for innovation work. It will also be continuously provided in the dedication and exchange of people.

### **Knowledge Sharing and Corporate Development**

Knowledge sharing can enhance the connections between employees in the corporate. It requires constant communication among enterprise employees, which plays a very important role in strengthening mutual friendship among enterprise employees. At the same time, knowledge sharing is conducive to strengthening the mutual communication between the leadership and employees within the enterprise, thereby optimizing the cadre and group of the enterprise, relationship, and promote the construction of a harmonious corporate culture, thereby strengthening the connection within the enterprise ( Tamsah et al., 2020). Knowledge sharing is the exchange of knowledge among employees. In the process of exchanging professional knowledge and skills, it is conducive to the exchange and collision of employees' thinking. For solutions to the same problems, employees can learn from others' strengths, so as to continuously improve their divergent thinking ability, realize the update of enterprise technology, and promote the improvement of productivity (Lu & Chesbrough, 2022).

Knowledge sharing is the continuous exchange of technical knowledge within the enterprise, which can strengthen the cohesion within the enterprise to a certain extent, thereby reducing the loss of knowledge within the enterprise and avoiding the loss of the enterprise. Knowledge plays an increasingly important role for enterprises (Azeem et al., 2021; Obrenovic et al., 2020). Therefore, preventing the loss of corporate knowledge is a great asset for enterprises. And knowledge sharing can play such a role and enhance the cohesion of enterprises. Knowledge sharing is the reasonable planning and allocation of enterprise knowledge, and employees exchange professional and technical knowledge with each other, so as to continuously improve the utilization efficiency of the enterprise's own cultural resources and realize the rational allocation of knowledge resources.

### **Strategies to Enhance Knowledge Sharing**

It is important to build a new corporate culture. Promoting employees to improve their relationship with each other corporate culture is the soft power of corporate competition and plays an important role in corporate competition in modern society (Gao et al., 2020). Enterprises should build a harmonious corporate culture, to continuously improve their cultural soft power and improve their own culture. At the same time, enterprises should support mutual cooperation among employees, implement appropriate policies to encourage exchanges and cooperation among employees, and improve mutual relations, so that each employee can selflessly exchange experiences and realize knowledge sharing in a harmonious atmosphere, thereby continuously improve professional ability (Obrenovic et al., 2020).

Enterprises can continue to carry out a variety of training activities, knowledge competitions and debates and other activities, and at the same time, from the perspective of thinking, help employees establish the concept of lifelong learning, encourage employees to continue to learn, improve their professional skills, and encourage employees to continuously improve themselves (Udin, 2022). And to a certain extent, it can also reduce the differences between employees and strengthen technical exchanges and cooperation within enterprises, thereby clearing obstacles for knowledge sharing and promoting the continuous development of enterprises.

The development of the enterprise needs to use the correct strategy to guide the development of the enterprise, raise the knowledge sharing to the height of the enterprise development strategy, increase the attention of the enterprise to it, urge the enterprise to implement the knowledge sharing, and make the knowledge sharing become the enterprise in the new era (Azamela et al., 2022). It is necessary to put knowledge sharing at a strategic height, lay a solid guarantee for the realization of knowledge sharing, and continuously promote the development of enterprises.

A corporate should establish an internal intellectual property protection system to ensure corporate security. In the new era, this famous saying has become a fact, knowledge has become the core of enterprise competition, and knowledge sharing is sharing the power of knowledge. It is worth noting that the enterprise knowledge security in the sharing process. In the process of knowledge sharing, it is necessary to establish a relevant intellectual property protection system, use the system to protect the security of corporate knowledge, make full use of the protection of the law, prevent the leakage of corporate intellectual property rights, so as to maintain the security of the company's core competitiveness, and at the same time It also provides a solid guarantee for knowledge sharing and lays a solid foundation for enterprises to gain a foothold in the market (Obrenovic et al., 2020; Kom & Shim, 2018).

With the development of information technology and the popularization of the Internet, the ways for people to communicate and obtain information are becoming more and more diverse. The number of virtual communities on the Internet is increasing day by day. Online virtual communities based on computer networks have broadened the social scope of traditional communities (Azamela et al., 2022). Online communication has improved the efficiency of people's interaction and contributed to the sharing of important information and knowledge. People with common interests or goals exchange or share knowledge in virtual communities and form social gatherings of personal relationship networks in cyberspace. From the perspective of knowledge management, virtual communities provide individuals with a new way of exchanging knowledge (Tamsah et al., 2020). At present, the knowledge management of virtual community has been paid more and more attention. Related literatures have studied the knowledge sharing behavior among individuals in virtual community.

Researchers established a model that affects the knowledge contribution behavior of virtual community users and pointed out that the relationship between members and personal professional reputation have a positive impact on the knowledge contribution behavior of virtual community. Chao and Hsu studied the information sharing behavior of virtual community from the perspective of social capital theory, divided social capital into structural dimension, relational dimension and cognitive dimension, and established a model of influencing factors of virtual community information sharing under three dimensions. Kom and Shim (2018) discussed the factors that affect knowledge sharing behavior in virtual communities from the perspective of individual and environmental factors.

The flattened corporate organizational structure has greatly broken the barriers between various departments in the traditional organizational structure. It greatly promotes the enthusiasm among the employees of the enterprise and provides favorable conditions for the

smooth communication between various departments and organizations. In the flat organizational structure, the decisions and ideas of the enterprise will be quickly communicated to all employees of the enterprise, and the opinions and suggestions of the employees on the decision-making will also be quickly transmitted to the ears of managers (Castaneda & Cuellar, 2020). In this era of ever-changing knowledge, the update and replacement of knowledge is carried out all the time, and the open and flat structure is conducive to the dissemination and exchange of knowledge among enterprises, so as to realize the sharing of knowledge to the greatest extent. In such an open and loose organizational structure, ordinary employees of an enterprise can make suggestions for the development of the enterprise, put forward personal opinions, and the listening and adoption of managers will greatly encourage the employees of the enterprise, thereby enhancing the employees' morale (Tamsah et al., 2020). This kind of efficient and open communication and conversation between employees and managers will often inspire sparks of wisdom, enabling knowledge innovation between employees and managers, thereby improving the overall innovation capability of the enterprise.

Social exchange theory holds that exchange expectations are a prerequisite for social interaction. In a certain sense, the reason why people can communicate with each other is that they measure their own pay and benefits. Shared experience in the group prompts members to think that their inputs are similar and expect similar returns, that is, the average return received by group members becomes the expected standard that governs the value of the reward (Azamela et al., 2022). However, it is clear that the special attributes of knowledge itself and the personal abilities of knowledge sharing subjects and the environment in which they are located are different, and the social rewards brought by knowledge sharing behaviors are high or low. Trust is the emotional basis of social exchange, but at the same time trust also has the properties of time difference, asymmetry, uncertainty and subjectivity. These properties of trust determine that in the process of social exchange, risk and trust coexist. The performance appraisal system is widespread in modern enterprises, and the competition among employees is becoming increasingly fierce. Employees take their own knowledge as an advantage and are reluctant to share knowledge. In addition, employees will compare the knowledge they have and others lack with the knowledge others have and they lack, so that only insignificant knowledge or knowledge that everyone has learned or known is shared in the knowledge sharing process. The smooth progress of employee knowledge sharing requires a sound knowledge sharing mechanism to ensure it (Obrenovic et al., 2020). This knowledge sharing mechanism not only needs to enhance the willingness of knowledge sharing subjects to share knowledge, but also needs to enhance their trust in the process of knowledge sharing, including establishing a cognitive trust guarantee mechanism and an emotional trust guarantee mechanism, because cognitive trust and emotional trust. However, the existing knowledge sharing guarantee mechanism focuses more on the process, specification and content of knowledge sharing, but lacks attention to the main body of knowledge sharing (Castaneda & Cuellar, 2020).

## **CONCLUSION**

At this stage, the inefficiency of the knowledge sharing platform for enterprise employees and the lack of employees' willingness to share knowledge have become the bottlenecks for the development of Chinese enterprises. The general lack of trust among employees, the lack of professional talents, the lack of information sharing and experience exchange between professional managers and grass-roots workers, lead to the lack of understanding of the company's service concept and corporate image, and the lack of professional quality. The above problems have seriously affected the effect of enterprise knowledge sharing and led to the loss of customers. To a certain extent, they have become



restrictive factors for the development of enterprises. It is critical to investigate how to convert employees' tacit knowledge into explicit knowledge and improve the level of knowledge sharing is a problem that enterprises need to solve.

From the perspective of social exchange theory, the employee knowledge sharing mechanism means that employees take the spontaneously formed community or the organization under the company structure as a sharing platform, pay a certain cost and obtain relative social remuneration through the interaction behavior within the organization. The result of the comparison with the expectation determines whether the subsequent knowledge sharing process occurs. When employees participate in knowledge sharing, they will measure the cost they pay and the social reward they get. The social reward obtained by comparison is in line with or higher than their own expectations, then the knowledge sharing behavior will continue; on the contrary, if the social reward obtained by the employee is lower than their own expectations, then this knowledge sharing behavior will be terminated.

The era of knowledge economy has given birth to the knowledge management of modern enterprises, and knowledge sharing is an important branch of enterprise knowledge management. In an enterprise, knowledge sharing can effectively accumulate and use the knowledge and experience of employees from different professional backgrounds, help enterprises improve management efficiency, improve the relationship between upstream and downstream enterprises, promote scientific and technological innovation and development, and rationalize organizational structure. Employee knowledge sharing from the perspective of social exchange theory means that employees take the community formed by themselves or the departmental organization under the company structure as a sharing platform, and through the interaction within the organization, pay a certain cost and obtain relative social rewards. The comparison of social rewards with one's own expectations determines whether the subsequent knowledge sharing process occurs. This paper proposes effective strategies to promote knowledge sharing among employees, aiming at providing a useful reference for promoting the innovation and development of high-tech enterprises in China.

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