

THE STUDY ON THE TRANSACTION COST OF INTELLECTUAL PROPERTY OF NATIONAL DEFENSE

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***Abstract:** In the field of the intellectual property of national defense, the price analysis has made periodical development. However, the cost analysis which is corresponding to the price analysis is in severe shortage. The paper selects the transaction link of the intellectual property of national defense as the cutting point. Moreover, the author makes a brief analysis of the transaction cost of the intellectual property of the national defense from three perspectives of the necessity of the analysis of the transaction cost of the intellectual property of national defense, the reason of the occurrence of transaction cost of the intellectual property of national defense and the independent variable of the transaction of the intellectual property of national defense.*

***Keywords:** intellectual property of national defense; transaction cost; proprietary; sunken cost*

1. INTRODUCTION

Price theory and cost theory are the two indispensable parts in the theory of commodity exchange. Studies show that in the field of the intellectual property of national defense, the golden ratio method is the most operable through the price analysis of pricing trial. However, the theoretical achievements of cost analysis in the field are in comparatively great shortage. The paper selects the transaction link of the intellectual property of national defense as the cutting point. Moreover, the author makes a brief analysis of the transaction cost of the intellectual property of the national defense from three perspectives of the necessity of the analysis of the transaction cost of the intellectual property, they are namely: national defense; the reason of the occurrence of transaction cost of the intellectual property of national defense; and the independent variable of the transaction of the intellectual property of national defense.

2. THE NECESSITY OF THE ANALYSIS OF THE TRANSACTION COST OF THE INTELLECTUAL PROPERTY OF NATIONAL DEFENSE

In terms of the form of the right, it is rooted in laws, which is also a systemized “product”. However, if dig it much deeper, we will find the root lies in the systemized and rationalized demands of social life. Every individual in the same common world has his or her own unique demands. Conflicts of interests occur inevitably. If we take no actions to solve the conflicts, the social life will definitely in disorder. Therefore, the “product set” which is used to manage social orders comes into being, which integrates the diversified “product sets” of the power or rights that are considered as rational and legal and entitled to the individuals. The intellectual property of national defense belongs to the intellectual rights. Therefore, it is also a member of the big family of the “product set”.

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As for the intellectual property of national defense, it is a right that the nation and the national defense can enjoy the intelligence accomplishment made by the national intelligence party on their own; or they can enjoy the accomplishment jointly.

As a branch of rights, it requires for cost payment not just because the essence of rights is the dependence on the government.

Moreover, unlike other rights, the property right party of the intellectual property of national defense also includes our nation.

As a result, it is more complicated and necessary to conduct cost analysis.

Speaking of cost, it seems to be associated with certain theories of accounting. Nevertheless, just as what the author of *Costs of Rights* points out in page 9, i.e. "...it is only related to the essence of legal rights rather than an elaborate study on finance".

The intellectual property of national defense is a right, which means freedom. As for freedom, it is just as what the author of *Costs of Rights* points out in page 153, i.e. "...it does not mean that freedom does not need the government; on the contrary, an active government provides the conditions for freedom."

If there is no compulsory interference of the government or as the deterrent for the potential right-invaders, right or freedom may encounter invasion. The right depends on the ability of government to absorb and allocate the resources.

Besides, to add up with the dependence due to "an active government provides the conditions for freedom" requires for certain cost payment.

In December 2009, the leading group ready to implement the intellectual property of national defense issued *Implementation Plan of the Strategy of the Intellectual Property of National Defense*, which ensures to establish perfect intellectual property of national defense, create the environment for the operation of the intellectual property system of national defense normatively, improve the quantity and quality of the intellectual property of national defense, etc.

The plan requires that the implementation of the strategy of the intellectual property of national defense shall make some innovation and breakthrough on the system construction to further update the ownership system of the intellectual property conducive to innovation, the utilization system of the intellectual property which is helpful to the transfer and application of technology and the management system of the intellectual system beneficial to motivate the development of national defense technology and weaponry equipment.

The establishment of the confidential and disclosure system of the intellectual property of national defense, enhancement of the system and measures of the application of the intellectual property of national defense in the civilian area, encouragement of the system and measures of the application intellectual property in the civilian area in the national defense area, the establishment of the system of treating disputes of the intellectual property of national defense, the construction of the intellectual property institutions of national defense, the construction of the information platform of the intellectual property of national defense, the establishment of the agency service system of the intellectual property of national defense, the development of the legal system of the intellectual property of national defense, the ownership and interest allocation system of the intellectual property of national defense and other specialized tasks in the plan are all major supports for the establishment of standardization of the transaction environment of the intellectual property of national defense.

In August 2011, the 19th specialized task in the strategic implementation of the intellectual property of national defense, i.e. "the right ownership and interest allocation system of the intellectual property of national defense" pointed out that through pricing trial, the golden ratio is the most operable when signing the national defense contract on the condition that it meets the requirements of the national defense and forced transaction pricing and by adjusting technology adversely to achieve the price balance between the buyer and seller.

Besides, the golden ratio method can well demonstrate the value of the intellectual property of national defense.

It symbolizes that price analysis has achieved periodical progress in the field of intellectual property of national defense.

In addition, cost and price are two indispensable parts in the field of exchange.

However, in the field of intellectual property of national defense, cost analysis is comparatively in shortage.

Therefore, it is necessary to carry out multi-dimensional analysis on the cost. That's also the reason why the author writes the paper.

3. THE REASON OF THE OCCURRENCE OF TRANSACTION COST OF THE INTELLECTUAL PROPERTY OF NATIONAL DEFENSE

In essence, wherever the exchange activity happens, there is transaction cost. The concept of transaction cost was first introduced to the economic analysis by the New Institutional Economics besides traditional production cost.

The transaction cost of the intellectual property of national defense refers to the cost needed to complete the transaction of intellectual property of national defense, that is, all the time cost and currency cost in the transaction process, including the disclosure of the cost of the information disclosure, consultation, discussion, negotiation, contract implementation and supervision, solutions of disputes, relief and other activities.

The denominator of "New Institutional Economics", Oliver Williamson, the Nobel Economic Prize Winner in 2009 held the opinion that the market failure phenomenon due to the mutual impact of human beings and transaction environment added to the difficulty of transactions and generated the transaction cost.

The author agrees Williamson's opinion. Furthermore, the author thinks that in the transaction field of the intellectual property of national defense, the occurrence of transaction cost is attributed to the following several factors:

3.1 The proprietary of the intellectual property of national defense. From the essence of capital, it can be used for different purposes and by different users on the condition that it does not sacrifice the production value.

However, due to the particularity of the intellectual property of national defense, many kinds of intellectual properties of national defense cannot be used for other purposes except national defense.

The transaction process is too exclusive with few transaction objects. Therefore, we can call it Small Numbers.

Besides, the proprietary and small numbers may result in the Sunken Cost of the investment cost of the intellectual property of national defense. The purpose of the transaction is "one-off"; the sunken cost becomes the transaction cost.

3.2 The complexity of the transaction environment of the intellectual property of national defense. The intellectual property of national defense serves for the national defense.

Because of the unpredictability and various changes in the environment factors, the transaction parties take into consideration the uncertainty and the complexity in the future in the transaction process, which increases the difficulty of the transactions and adds to a huge amount of bargaining costs in signing the contract in the transaction process (The transaction contract of the intellectual property of national defense). What accompanies the high risk is the high price. Moreover, in order to reduce the high price, time, labor and other costs are also in great consumption. All these types belong to transaction cost.

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3.3 The restriction of the subjective cognition of the transaction parties of the intellectual property of national defense.

The participants in the intellectual property transaction of the national defense seek for the maximization of the profits, thus generating the restriction of the subjective cognition.

Specifically speaking, the sales party of the intellectual property transaction of national defense tries every means to sell the intellectual property of national defense at the highest price.

However, the purchase party hopes to obtain the intellectual property of national defense with the lowest price and make full use of the property.

In the process, the personal interest-centered transaction sets up barriers for the success of the transaction and adds to the transaction time, negotiation expenses and invested human resource.

Moreover, due to the distrust and suspicion, the cost on supervision also increases in the transaction process. As a result, transaction cost comes into being.

3.4 Unsmooth information exchange in the transaction of intellectual property of national defense. In the transaction process, the relevant parties have different information in varying degrees.

However, because of their orientation toward personal interest, the transaction parties do not announce their information until the opportunity most beneficial to them comes so as to maximize their interests.

In this way, the first information-occupier in the transaction process of the intellectual property of national defense tends to gain more benefit because of their possession of more information.

Ultimately, the “Small Numbers” occurs.

In the process, the unsmooth information exchange will lengthen the transaction and increase the transaction cost.

3.5 The potential contradictory emotions between the transaction parties in the transaction process of the intellectual property of national defense. When the transaction begins, the relevant parties do not trust each other. Moreover, they may in a contradictory state. Consequently, it is unlikely to create a satisfying transaction relationship, which leads to the stagnated transaction process and adds to the difficulty in the transaction.

It may also add to the transaction cost in the time and difficulty of information collection and condition negotiation, the signing and implementation of contract, supervision, etc.

4. THE INDEPENDENT VARIABLE OF THE TRANSACTION OF THE INTELLECTUAL PROPERTY OF NATIONAL DEFENSE

The transaction cost of the intellectual property of national defense is attributed to three independent variables.

Furthermore speaking, the combination of the three variables decides the transaction cost of the intellectual property of national defense.

4.1 The proprietary of the transaction of the intellectual property of national defense. The subject matter of the transaction of the intellectual property of national defense is the intellectual property of national defense.

It is one type of intellectual assets, which severs for the national defense.

To some degree, the intellectual property of national defense as the transaction asset has a weak circulation in the market.

In other words, when the national defense contract signed in the transaction terminates, the cost invested in the intellectual property cannot be withdrawn or transferred for other uses.

It is called the “proprietary” of the transaction of the intellectual property of national defense.

The proprietary of the transaction of the intellectual property of national defense is an important factor that affects the transaction cost.

Because a majority of intellectual properties of national defense cannot be re-allocated for other uses after the completion of the transaction, the loss of values will occur.

Moreover, the subject matter of the transaction cannot be replaced, thus leading to the highly mutual dependence between the relevant parties, which are accompanied by the high risks of the transaction contract of the intellectual property of national defense.

When the sale party of the transaction of the intellectual property of national defense has to invest a certain amount of intellectual assets, the opportunism is also intensified.

At this time, the purchasing party will take defense measures, such as signing formal “legal contracts” to ease the opportunism. Despite what’s the above mentioned, the sunken cost resulting from the proprietary will still brings about high transaction cost.

4.2 The risks of the transaction of the intellectual property of national defense. There are all kinds of risks in the transaction of the intellectual property of national defense.

Because of the restriction of the subject cognition of the two parties, people cannot make predictions in advance when they try to see through the future.

Coupled with the unsmooth information exchange in the transaction process between the parties, the increasing uncertainty in transaction is also accompanied by the increasing of supervision cost and bargaining cost, which results in that the transaction parties adopt the method of signing contracts to maintain their own interests.

The result is that the transaction risk intensifies and the transaction cost increases.

Under the condition of the sunken cost, the unsmooth information exchange will increase the risk of the success of the transaction.

Sunken cost indicates that the relevant party has to undertake sunken cost in the later transaction. The higher the sunken cost is, the possibilities it faces and the higher the negative influences it receives.

Besides, it also means that the unsmooth information exchange and the sunken cost exert important negative influence on the transaction.

It affects the transaction of the intellectual property of national defense.

4.3 The frequency of the transaction of the intellectual property of national defense.

The shorter the cycle of the transaction of the intellectual property of national defense is, the higher the transaction frequency is. Besides, the management cost and bargaining cost rise accordingly. However, the high transaction cost may reduce or eliminate the potential beneficial transaction. The intellectual property of national defense belongs to the intellectual asset; the transaction of the intellectual property of national defense belongs to technical transaction. The increasing transaction cost brought by the transaction frequency will directly cause the transaction parties to internalize the economic activities of the transaction so as to save the transaction cost.

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In accordance with the externality theory, generally speaking, the external economic transaction will result in the higher private cost compared to the social cost.

The internalization of the external transaction can change the external influence into the internal influence, thus eliminating the external impact, minimizing the transaction cost and optimizing the transaction state.

5. CONCLUSION

The evaluation result of the above variables can be concluded in the form of scoring. We can get the evaluation result of the transaction cost with the weighted sum. Therefore, we can get the objective data of the transaction cost of the intellectual property of national defense. The calculation formula is as follows:

$$TC=A_{TF} \times B_{TS} + A_{TU} \times B_{TU} + A_{TS} \times B_{TF}$$

TC: transaction cost

A: the evaluation score of each variable of the transaction cost

B: weight: $B_{TS} + B_{TU} + B_{TF} = 1$

TS: the proprietary of the transaction subject

TU: transaction risks

TF: transaction frequency

REFERENCES

1. Williamson, O. *The Mechanisms of Governance*. Oxford University Press (1996).
2. Williamson, O. *Markets and Hierarchies: analysis of antitrust implications*. New York: Free Press. (1975).
3. Hart, Oliver. *Firm, Contract and Financial Structure*. Oxford University Press(1995).
4. Knight, Frank. *Risk, Uncertainty, and Profit*, New York: A.M.Kelley.(1921).