

## Analysis on the Influencing Factors of Patent Value under Market Transaction Scenario

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**Abstract:** This paper uses descriptive statistical analysis, correlation analysis, OLS model and hierarchical regression analysis to conduct an empirical study on the patent trading data of China technology exchange, and discusses the influencing factors of patent value under the market trading scenarios of patent transfer and patent licensing. The results show that patent waiting period has no effect on patent value in transaction scenario; for different patent applicants, the factors that affect the patent value are different; Both the number of claims and the way of transaction have a negative impact on the patent value of enterprises. On this basis, this paper puts forward some suggestions to promote the marketization of patent assets, which is conducive to the development of patent trading market.

**Keywords:** Patent transaction; Patent value; Influence factor.

### 1. INTRODUCTION

According to the announcement released by the United Nations, China has ranked first in the total number of patent applications and authorization for several years in a row, and the number of patent applications by domestic enterprises and universities has also increased year by year. However, the loss of valid patents in China is serious and the average service life is low [1]. Because the patents developed can not bring considerable market economic benefits and value, especially the scientific and technological achievements of universities and research institutions with strong scientific research strength are separated from the market, and the research and development strength of enterprises' innovation subjects is weak, so the transfer and transformation efficiency of patent achievements in the patent trading market is low. Therefore, it is necessary to study the influencing factors of patent value under the transaction scenario, so as to improve the conversion rate of patent results in China.

In order to promote the transformation of patent achievements, many scholars have studied the influencing factors of patent value. In 2012, the State Intellectual Property Administration published the Operation Manual of the Index System of Patent Value Analysis, which studied the value of patents from the perspectives of law, technology and economy [2]. However, the influencing factors of patent value in different scenarios are different: Tang Heng et al. studied the patent value in the scenario of pledge financing, and the results show that the uncertainty of patent income is an important factor affecting patent pledge financing [3]. Zhang Kequn et al. studied the patent value under auction mode, showing that both the originality and universality of patent have a significant positive impact on the patent value [4]. Jin Xiaodong analyzed the factors influencing the patent value

in the securitization of patent assets, and the study showed that the macro-economic environment at the time of the implementation of the securitized patent had an important influence on its value[5]. Although used to have a lot of experts and scholars studied the patent value under different scenarios, but the study of trading scenario patent value is less, so this article on the basis of predecessors' research on patent value indicators, according to the characteristics of the market transaction under patent, analysis the influence factors of patent value transaction contexts, so as to improve the sell-through rate of patent assets in the market, Applying scientific research results to the reality of social life, promoting the transformation of intellectual property achievements in China.

## 2. STUDY DESIGN

### 2.1. The Data Source

The sample in this study is the patent trading data of the state-owned scientific and technological achievements listing and trading system of China Technology Exchange in 36 months. After eliminating the data lacking information, 75 patent data were finally screened, including 66 invention patents and 9 utility model patents. The transaction methods can be divided into transfer and license, which can reflect the market transaction situation of patents.

### 2.2. Variable Setting and Measurement

#### 2.2.1. Legal Factor Variable

(1) Waiting period for patent license

The Waiting period for patent license refers to the number of years between the date when the patent administration department receives the patent application documents submitted by the applicant and the time when the patent is authorized by the relevant departments. The later the patent is granted, the more likely it is that similar patents will be granted earlier, and the competitive pressure in the trading market will increase, and the supply may exceed the demand, which will affect the patent value. So we assume that the longer the waiting period for patent licensing, the lower the value of the patent.

(2) Number of claims

The number of patent claims refers to the technical features of the patent specified in the patent claims, and the precise definition of the protection scope granted by a patent in scientific terms. It consists of a series of expressions or noun phrases. The number of claims may be one or more, which has a significant impact on patent applications and patent litigation. According to previous evaluation experience, the more technical and irreplaceable the patent is, the higher the value of the patent will be. The originality of the patent determines the value of the patent. So we assume that the more claims there are, the higher the value of the patent.

#### 2.2.2. Technical Factor Variable

(1) Type of patent

There are three kinds of invention-creation in China: invention, utility model patent and appearance design. There are also differences in requirements and application fees for different types of invention-creation examination. The collated data shows that the types of patent transaction objects mainly involve invention patents and utility model patents, so the dummy variable patent types are introduced. When the patent is invention patent, the value of patent type is 1, and when the patent is utility model patent, the value of patent type is 0. Compared with utility model patents, invention patents have higher requirements for innovation and stricter examination system. Therefore, we assume that when patent type 1 is applied, the patent value will be higher.

(2) Number of patent classes

Each patent has its own international patent classification number, which includes patent main classification number and sub-classification number. The Number of patent classes reflects the scope of the technology, and the wider the scope of the technology, the greater the benefits of the patent. So we assume that the more patents there are, the higher the value of the patent.

(3) Number of inventors

The invention and creation of a patent cannot be separated from the long-term united efforts and deep thinking of many people. When the number of people with patents and inventions is large, they can learn from various knowledge and experience, and the research problems will be more scientific and rigorous, and the patent will be more valuable. So we assume that the more inventors there are, the higher the value of the patent.

*2.2.3. Transaction Factor Variable*

(1) Way to trade

The types of patent transactions studied in this paper mainly include patent transfer and licensing. Patent transfer is to transfer the ownership of the patent to the assignee, making the new patentee enjoy the right of control of the patent; However, the transaction of patent license is the right of use, in which the patentee gives up part of the exclusive status and the transferee obtains the right to implement the patented technology. There are differences in the rights granted to the assignee by patent transfer and patent implementation, so the dummy variable Way to trade is introduced. When the Way to trade is patent transfer, the value of the Way to trade is 1; when the Way to trade is patent licensing, the value of the Way to trade is 0. Since patent transfer is more common in market transactions, the higher the value of the patent is when the Way to trade is assumed to be 1.

(2) Type of applicant

There are two main types of patent assigners: universities and enterprises. The patent assignee is generally the patent applicant. Influenced by the background of innovation activities, the patents created by different types of patentees are different, so the applicant type of dummy variable is introduced. When the applicant is a university, the value of applicant type is 1; when the applicant is an enterprise, the value of applicant type is 0.

The above variable definitions are shown in Table 1: **Table1. Explanation and description of variables I**

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|                   | Unit of measure   | meaning                           | instructions  |
|-------------------|-------------------|-----------------------------------|---|
|                   | Ten thousand yuan | The transaction price             | The closing price of a patent transaction   |
| Legal factors     | years             | Waiting period for patent license | The number of years elapsed between the date the patent was filed and the date the patent was granted |
|                   | item              | Number of claims                  | The scope of protection of patent claims  |
| Technical factors | (0,1)             | Patent type                       | The invention patent is 1, otherwise it is 0  |
|                   | item              | Number of patent classes          | Number of international patent classes assigned   |
|                   | people            | Number of inventors               | Number of patent inventors  |
| Trading factors   | (0,1)             | Way to trade                      | Assign to 1, otherwise to 0   |
|                   | (0,1)             | Type of applicant                 | University is 1, otherwise 0  |

### 2.3. The Research Methods

Previous scholars studied the influencing factors of patent value, mainly using expert scoring method, analytic hierarchy process and fuzzy comprehensive evaluation method. These methods have strong subjectivity to the determination of index weight vector, which will affect the objectivity of the research results. In this paper, the OLS model and hierarchical regression were combined, and group variables could be added layer by layer for regression. The comparison of the model could make the research conclusion more scientific and reasonable. The specific research steps are as follows: Firstly, descriptive statistical analysis of the sample data is required to understand the minimum value, maximum value, mean value, standard difference and other basic conditions of the sample data, which is conducive to making an overall judgment for the subsequent analysis and research; Then it is necessary to conduct multicollinearity test and heteroscedasticity test on the sample data to judge whether the data is suitable for OLS regression model. Finally, hierarchical regression analysis was conducted to compare the regression results of different models longitudinally to determine whether the model would become better after the addition of new group variables. At the same time, OLS classical linear regression method was adopted for each model, and the factors affecting the explained variables could be analyzed horizontally.

## 3. CALCULATION RESULTS AND ANALYSIS

### 3.1. Descriptive Statistical Analysis

Descriptive statistics were conducted on variables such as transaction price, Waiting period for patent license, number of claims, patent type, Number of patent classes, number of inventors, transaction method, and type of applicants. The specific results are shown in Table 2. In this paper, invention patent is defined as 1, utility model patent is defined as 0, and the mean value of patent type is 0.88, indicating that about 88% of patents in the patent trading market are invention patents, while utility model patents account for a relatively small proportion. This indicates that invention patents are favored by buyers more than utility model patents in market transactions. As can be seen from Table 2, nearly 88% of patent applicants traded on the platform of China technology Exchange are universities, and the patent transaction rate of enterprises is relatively low. **Table 2.** *Descriptive statistics for the full sample*

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| variable                          | N  | The minimum value | The maximum | The mean | The standard deviation |
|-----------------------------------|----|-------------------|-------------|----------|------------------------|
| The transaction price             | 75 | 1                 | 1800        | 85.74    | 273.38                 |
| Waiting period for patent license | 75 | 0.5               | 4.5         | 2.20     | 0.97                   |
| Number of claims                  | 75 | 1                 | 10          | 6.09     | 3                      |
| Patent type                       | 75 | 0                 | 1           | 0.88     | 0.33                   |
| Number of patent classes          | 75 | 1                 | 9           | 2.61     | 1.95                   |
| Number of inventors               | 75 | 1                 | 13          | 4.93     | 2.56                   |
| Way to trade                      | 75 | 0                 | 1           | 0.75     | 0.44                   |

|                   |    |   |   |      |      |
|-------------------|----|---|---|------|------|
| Type of applicant | 75 | 0 | 1 | 0.88 | 0.33 |
|-------------------|----|---|---|------|------|

**Table3.** Grouping Descriptive Statistics 3

| variable                          | Colleges and universities | enterprise | differences |
|-----------------------------------|---------------------------|------------|-------------|
| The transaction price             | 62.74                     | 254.39     | 191.65      |
| Waiting period for patent license | 2.14                      | 2.67       | 0.53        |
| Number of claims                  | 6.14                      | 5.78       | 0.36        |
| Patent type                       | 0.86                      | 1          | 0.14        |
| Number of patent classes          | 2.56                      | 3          | 0.44        |
| Number of inventors               | 5.12                      | 3.67       | 1.45        |
| Way to trade                      | 0.73                      | 0.89       | 0.16        |

Patent applicants include universities and enterprises. Different types of applicants lead to different invention patents, and the transaction rates and prices of patents are also different. Therefore, this paper divides universities and enterprises into descriptive statistics, and the specific results are shown in Table 3. The patent transaction price of the enterprise group is much higher than that of the university group. At the same time, the transaction patents of the enterprise group are all invention patents, and the patents of the university also include practical patents. The intrinsic attributes of patents in the two sets of data are quite different, which may be due to the different nature of universities and enterprises [6]. Enterprises develop patents for profit, and the number of claims is positively correlated with the possibility of litigation [7]. Enterprises are reluctant to increase litigation costs, so they control the number of patent claims.

### 3.2. Correlation Test

#### 3.2.1. Multicollinearity Test

When the absolute value of Pearson correlation coefficient is greater than 0.5, it indicates that there may be multicollinearity among variables. As shown in Table 4, the correlation coefficient between patent type and Waiting period for patent license is 0.572\*\*, indicating that there may be a linear relationship between the two.

**Table4.** Pearson correlation coefficient matrix of full sample 4

|                                   | The transaction price | Waiting period for patent license | Number of claims | Patent type | Number of patent classes | Number of inventors | Way to trade | Type of applicant |
|-----------------------------------|-----------------------|-----------------------------------|------------------|-------------|--------------------------|---------------------|--------------|-------------------|
| The transaction price             | 1                     |                                   |                  |             |                          |                     |              |                   |
| Waiting period for patent license | 0.007                 | 1                                 |                  |             |                          |                     |              |                   |
| Number of claims                  | 0.126                 | 0.092                             | 1                |             |                          |                     |              |                   |
| Patent type                       | 0.110                 | 0.572 **                          | 0.002            | 1           |                          |                     |              |                   |

|                          |         |          |       |         |         |       |       |   |
|--------------------------|---------|----------|-------|---------|---------|-------|-------|---|
| Number of patent classes | 0.231 * | 0.344 ** | 0.013 | 0.244 * | 1       |       |       |   |
| Number of inventors      | 0.010   | 0.131    | 0.123 | 0.042   | 0.116   | 1     |       |   |
| Way to trade             | 0.043   | 0.265 *  | 0.043 | 0.257 * | 0.279 * | 0.141 | 1     |   |
| Type of applicant        | 0.229 * | 0.178    | 0.039 | 0.136   | 0.074   | 0.183 | 0.121 | 1 |

In order to further determine whether there is serious multicollinearity among independent variables, the variance-widening factor (VIF) value was calculated as the basis for the judgment. As can be seen from Table 5, VIF values of the whole sample, university group and enterprise group are all less than 10, so it can be considered that there is no multicollinearity problem among independent variables. **Table 5. multicollinearity test of independent variables 5**

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| variable                          | All the samples | Colleges and universities | enterprise |
|-----------------------------------|-----------------|---------------------------|------------|
| Waiting period for patent license | 1.677           | 1.656                     | 2.520      |
| Number of claims                  | 1.029           | 1.032                     | 2.203      |
| Patent type                       | 1.520           | 1.576                     |            |
| Number of patent classes          | 1.212           | 1.188                     | 3.054      |
| Number of inventors               | 1.088           | 1.125                     | 3.027      |
| Way to trade                      | 1.171           | 1.183                     | 3.598      |

**Note:** Since the data of the enterprise group are all invention patents, the enterprise group patent type does not have the value of VIF.

### 3.2.2. Heteroscedasticity Test

The test results showed that the P values of Model (2), Model (3), Model (5) and Model (6) were 0.0157, 0.0189, 0.0053 and 0.0126, respectively, all less than 0.05, indicating the existence of heteroscedasticity, while the P values of the remaining five models were all greater than 0.05, indicating no heteroscedasticity. Weighted least square method, feasible generalized least square method and heteroscedasticity robust standard error method are usually used to solve the heteroscedasticity problem. Heteroscedasticity robust standard error method does not need to know the form of conditional variance function, and the estimation of regression coefficient and standard error is consistent, so it is the most common method to correct heteroscedasticity. Therefore, this paper will use robust standard error to deal with the heteroscedasticity problem.

## 3.3. Regression analysis

### 3.3.1. Full Sample Regression Analysis

In this study, three models were selected for hierarchical regression analysis (see Table 6). **Table 6. Regression analysis results of full sample 6** Model (1) only considers the influence of legal factors on the transaction price of patents. Model (2) adds the influence of technical factors on the basis of Model (1). On the basis of Model (2), Model (3) considers the influence of transaction factors on the transaction price of patents.

**Table6.** Regression analysis results of full sample 6

| variable                          | Model (1) | Model (2) | Model (3) |
|-----------------------------------|-----------|-----------|-----------|
| Waiting period for patent license | 5.131     | 44.460    | 46.529    |
| P values                          | 0.877     | 0.2899    | 0.2628    |
| Number of claims                  | 11.621    | 10.646    | 10.206    |
| P values                          | 0.281     | 0.3188    | 0.3297    |
| Patent type                       |           | 112.200   | 116.490   |
| P values                          |           | 0.3429    | 0.3187    |
| Number of patent classes          |           | 36.283    | 38.269    |
| P values                          |           | 0.0412    | 0.0309    |
| Number of inventors               |           | 7.334     | 0.886     |
| P values                          |           | 0.5615    | 0.9444    |
| Way to trade                      |           |           | 83.766    |
| P values                          |           |           | 0.2768    |
| Type of applicant                 |           |           | 199.4705  |
| P values                          |           |           | 0.0448    |
| constant                          | 3.635     | 38.634    | 165.910   |
| P values                          | 0.973     | 0.7690    | 0.2997    |
| Number of samples                 | 75        | 75        | 75        |
| R <sup>2</sup>                    | 0.016     | 0.089     | 0.152     |

Model (1) shows the influence of legal factors on the patent price in the trading market. The P value of independent variable is not significant, and the determination coefficient R<sup>2</sup> is 0.016. The model has a poor fitting degree, indicating that legal factors are not the only factors affecting the patent trading price. Model (2) added technical factors such as patent type, Number of patent classes, number of inventors and so on on the basis of Model (1). The Number of patent classes had a significant positive impact on patent transaction price, which means that the more the number of international classification IPCs, the wider the scope of patent application and the higher the patent value[8]. In Model (3), the influence of transaction factors such as transaction method and applicant type is added on the basis of Model (2), and the coefficient of determination R<sup>2</sup> is 0.152, which increases by 0.063 compared with Model (2), and the fitting degree of the model becomes better. At the same time, the p-value of patent classification number is smaller than that of Model (2), indicating that the influence of patent classification number on patent value is more significant in Model (3). In addition, the types of applicants have a significant impact on the transaction price, indicating that different types of applicants will have an impact on the transaction price. The research results of Morgan et al. also illustrate this situation. Due to the different background of invention activities, the patents produced by different types of patentees may be quite different[9].

3.3.2. Group Regression Analysis

This paper carried out grouped regression analysis on patent data according to different types of applicants. The specific regression analysis results are shown in Table 7 and Table 8. **Table7.** Regression analysis results of colleges and universities 7 **Table8.** Enterprise regression analysis results8

**Table7.** Regression analysis results of colleges and universities 7

| variable                          | Model (4) | Model (5) | Model (6) |
|-----------------------------------|-----------|-----------|-----------|
| Waiting period for patent license | 7.107     | 28.174    | 21.354    |

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|                          |        |         |         |
|--------------------------|--------|---------|---------|
| P values                 | 0.8310 | 0.4990  | 0.6080  |
| Number of claims         | 17.186 | 15.478  | 15.260  |
| P values                 | 0.1105 | 0.1474  | 0.1502  |
| Patent type              |        | 61.088  | 79.536  |
| P values                 |        | 0.5918  | 0.4853  |
| Number of patent classes |        | 36.538  | 40.009  |
| P values                 |        | 0.0370  | 0.0234  |
| Number of inventors      |        | 0.532   | 3.218   |
| P values                 |        | 0.9662  | 0.8007  |
| Way to trade             |        |         | 104.237 |
| P values                 |        |         | 0.1732  |
| constant                 | 57.910 | 115.607 | 97.003  |
| P values                 | 0.5854 | 0.3611  | 0.4423  |
| Number of samples        | 75     | 75      | 75      |
| R <sup>2</sup>           | 0.040  | 0.118   | 0.145   |

Model (4) only considers the influence of legal factors on patent value, and the results show that the waiting period of patent authorization and the number of claims have no significant influence on the patent value of universities under the transaction scenario. However, related studies on factors affecting patent value believe that the Waiting period for patent license has a positive impact on patent value, and the patent value with more claims is higher. This is different from the empirical study in this paper, indicating that the factors influencing patent value are different for different applicants [10]. Model (5) added technical factors on the basis of Model (4), and the result showed that the determination coefficient R<sup>2</sup> significantly increased, indicating that the model (5) added technical factors had a better fitting degree. In Model (6), transaction factors are added on the basis of Model (5), and the results show that the coefficient of determination further increases, indicating that transaction factors further enhance the fitting degree of the model to the samples. At the same time, the Number of patent classes has a positive and significant effect in both Model (5) and Model (6), indicating that for universities, the Number of patent classes is the key factor affecting the value of patent transactions.

**Table8.** Enterprise regression analysis results8

| variable                          | Model (7) | Model (8) | Model (9) |
|-----------------------------------|-----------|-----------|-----------|
| Waiting period for patent license | 128.486   | 199.413   | 239.873   |
| P values                          | 0.3894    | 0.4035    | 0.0680    |
| Number of claims                  | 27.773    | 32.815    | 114.690   |
| P values                          | 0.5275    | 0.4709    | 0.0174    |
| Number of patent classes          |           | 17.400    | 2.671     |
| P values                          |           | 0.8874    | 0.9575    |
| Number of inventors               |           | 103.618   | 243.236   |
| P values                          |           | 0.2254    | 0.0099    |
| Way to trade                      |           |           | 1273.921  |
| P values                          |           |           | 0.0182    |



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|                   |         |          |          |
|-------------------|---------|----------|----------|
| constant          | 757.487 | 1407.883 | 3588.955 |
| P values          | 0.1475  | 0.0859   | 0.0064   |
| Number of samples | 75      | 75       | 75       |
| R <sup>2</sup>    | 0.179   | 0.478    | 0.938    |

**Note:** Since the data of the enterprise group are all invention patents, there is no variable of patent type in the regression analysis of the enterprise group.

Model (7) is the regression result that only legal factors are considered, while Model (8) is the regression result that technical factors are added on the basis of Model (7). Although the explanatory variables of both models are not significant, the determination coefficient R of Model (8) increases significantly after the addition of technical factors, indicating that the model has a better fitting degree after the addition of technical factors. In Model (9), transaction factors are added on the basis of Model (8) to make the coefficient of determination R<sup>2</sup> as high as 0.938, indicating that the model gives a reasonable explanation to the samples. At the same time, transaction factors are added into Model (9) to make the number of claims, number of inventors and transaction methods all have a significant impact on the transaction price of enterprises' patents, which indicates that the impact of transaction characteristics on the value of enterprises' patents is higher than that of patent attribute variables. The more patents with more claims, the more likely they are to face litigation. Patent buyers are unwilling to bear litigation risks, so they will choose the patents with fewer claims in the transaction. Therefore, the number of claims has a negative impact on the patent value. Model number (9) results show that the inventor of patent transaction price has significant negative impact, Zhang Kequn etc. Research shows that patent into the process of product, buyer will require the patent licensor to provide technical guidance, the more the inventor, buyers need to spend more time cost and communication cost, so buyers tend to be the inventor of choose and buy less number of patents. The results of Model (9) show that the Way to trade has a negative impact on the patent transaction price, indicating that enterprises are more inclined to implement the patent Way to trade of license rather than transfer, which shows the attitude of enterprises towards the patents developed by themselves. They retain the ownership of the patent and obtain profits through licensing the right to use the patent. At the same time, due to the higher possibility of successful commercialization of enterprise patents, a higher patent transaction price can be obtained only through the implementation of the license, and it is unnecessary to transfer the ownership of the patent[9].

## 4. RESEARCH CONCLUSIONS AND RECOMMENDATIONS

### 4.1. The Research Conclusion

36 months of patent technology exchange in China based on transaction data as sample, selection of legal factors, technical factors, trading as the independent variable descriptive statistics analysis, correlation analysis and hierarchical regression analysis, and the model for multicollinearity test and heteroscedasticity test to ensure the accuracy of regression results. Based on the above research methods, this paper mainly draws the following conclusions:

(1) In the transaction scenario, the patent licensing waiting period has no effect on the patent value. Relevant studies on the influencing factors of patent value show that the Waiting period for patent license has a positive effect on patent value. The empirical results of this paper are quite different from that, which proves that the realization of patent value does vary greatly under different scenarios[10]. Under the transaction scenario, the patent has been authorized and protected by law, and the patent assignee does not need to worry about being infringed by others. Therefore, the length

of the authorization waiting period is not important to the patent assignee, so the patent authorization waiting period will not affect the patent value.

(2) For universities, the Number of patent classes is the key factor affecting the value of patent transactions. The more the Number of patent classes, the higher the value of patents. This indicates that in the market, the patent transferee mainly pays attention to the Number of patent classes in the research and development of universities. For enterprises, there is a significant negative correlation between the number of inventors and the value of patents. The more the number of inventors, the patent buyers need to pay more exchange costs in the process of product transformation of patents. Therefore, patent buyers will pay more attention to the patents with fewer inventors in the transaction scenario.

(3) Both the number of claims and the mode of transaction have a negative impact on the patent value of enterprises. Claim number briefly to scientific terms to define a scope of protection conferred by the patent, patent right to ask for more, so the higher the risk of lawsuits, patent buyers are not willing to bear the risk of litigation, so the deal would claim number less patent, so the claim number and negatively correlated with enterprise patent value. The regression analysis results show that the enterprise more inclined to licensing, rather than the transfer of the patent trading way, this is because the enterprise patent commercialization mature, need not transfer of patents, Revenue can be earned by licensing the right to use a patent.

### **4.2. Suggestions to Promote the Marketization of Patent Assets**

Through the empirical study of patent transaction data, in order to improve the marketization level of patents under the transaction scenario, this paper puts forward the following suggestions from the government, universities and enterprises:

(1) The government needs to create a good operating environment for patent assets, provide a patent technology trading platform, and promote the development of various patent asset transformation methods, such as patent auction, patent pledge financing, patent securitization, etc. Different management models should be adopted for different patent applicants, and professional consulting services should be provided to support and guide the transformation of patent achievements.

(2) Colleges and universities need to further promote the transformation of patent research results, and closely link academic research with social reality; Establish a special patent asset management organization, and form a patent transformation process from technological research to patent invention to market product integration. Recruit high quality talents with both intellectual property expertise and marketing expertise to study the factors that contribute to successful transaction of patent assets.

(3) Enterprises need to improve the comprehensive quality of patent asset operators, carry out regular training, and strengthen the study of intellectual property, economic law, financial management and other knowledge; Establish patent early warning mechanism, reduce the risk of patent infringement lawsuit, control the cost of patent commercialization operation; Increase the investment of research and development funds, strengthen the innovation of patent technology.

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