

The Pricing Analysis of Real Estate Big Data

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Abstract: With the development of technology, the research value and market potential of big data in the real estate industry are well acknowledged. But its research is still lack of data transactions and pricing analysis. Aiming at this issue above, this paper use the utility theory of value and the theory of cost, combined with pricing strategy for real estate big data pricing analysis, in order to provide a reference for future research.

Keywords: Real estate; Big data; Pricing model

1. Introduction

The real estate industry is not only one of the pillar industries of national economy, but also an information-intensive industry, is increasingly influenced by the background of big data trend of the times. In the era of big data, the real estate data is growing suddenly and sharply, government departments, businesses, financial institutions, websites have huge data assets of the prospect of "data is assets". Government agencies and real estate enterprises have different mass property data, only through sharing deal to the realization of property assets, to achieve interoperability between the different bodies of data. Real estate big data pricing in the management of large data assets is a great theoretical and practical value of the issue, it is worth to carry out targeted in-depth study. Therefore, this article attempts to analyze how to determine the reasonable price of real estate big data from the basic characteristics and value characteristics of big data.

2. The Study of Real Estate Big Data

The era of big data, depending on the generation method, large data is divided into three different types, including large transactions, large interaction data, and large machine data. These three different types of data play an important role in the real estate industry. Large transaction data can not only help us grasp income and residents' disposable income, but also reflect the level of the material life of residents, the psychological state of the consumer, in order to make predictions. A lot of market information is hidden in big interaction data and unstructured machine data, through social networks, web search engine and other interactive data can even analyze consumer groups age, hobbies, philosophy of life, as a result to provide information on consumer demand for the real estate developers. In the complicated data, the analysis and use of real estate big data will become an

important problem that the real estate industry should be solved.

Since 2011, McKinsey Global Institute published their big data report which covers different sectors in economy, Academia has carried out extensive research work, which can be roughly divided into two according to their level of coverage. From a macro perspective, Manyika et al. [1] for the first time studied the roles of big data in innovation, competition and productivity in sectors of economy and analyzed the different industries from the use of data to obtain the value of the potential. They found that the value is not strong for real estate industry to capture the big data due to the globalization level is low in this industry. Furthermore, Liu and Zhang [2] briefly analyzed the opportunities and challenges that the real estate industry may face to in the era of big data. They found that big data can bring new opportunities for making decision, gaining revenue and improving the operation for the corporations. From the micro level, Zhejiang's survey group of National Bureau of Statistics has thus made a good pilot study to integrate people attitude to housing price analysis [3]. Another study was done by Chen and Zhang [4]. They detailed a development of housing information system about how to use mature technologies and big data for a database construction. Dong et al [5] used the web enquiry data from Baidu.com, to build a model for property price, which successfully fits the trend curve and predicts the new and secondhand house prices of 16 major cities in china

However, current research mainly focuses on the cognition and interpretation of big data, or the theoretical background, or application of big data from technological aspects. Other topics like identification and pricing of real estate big data are still lacking in in-depth research.

3. The Base of the Pricing of Real Estate "Big Data"

3.1. The basic characteristics of Big Data

According to Manyika et al, big data is datasets that are so large that they are not suitable to collect, store, process or analyze using traditional database tools. The characteristics of the big data are as follows:

1) Volume. So far, the amount of data produced by all human beings printed material is 200PB, however, historically, the amount of data that humans said all the words about 5EB (1EB = 210PB)

2) Variety

Compared with structured data which is easy to store, unstructured data is growing, including weblogs, audio, video, pictures, location information, etc.

3) Velocity

This is different from the traditional data mining. According to the "Digital Universe," IDC's report, expected by 2020, global data usage will reach 35.2ZB.

4) Low value density

The value of big data density is inversely proportional to the total amount of data. Under the background of big data, how to more quickly extract the value of the data through powerful machine algorithms will become an urgent problem.

3.2. The reasons for the formation of big data value and its characteristics

For goods, the value is the basis of price, the price is the value of the currency, price fluctuations around the value. Real estate big data as a special commodity, then the value of the study is the basis of the analysis of pricing. The first of all, we must recognize that not all data can have the property of assets. Financially speaking, the business owned and controlled, can be measured with money, and can bring economic benefits to the enterprise data to meet the requirements of the asset.

According to the basic characteristics of big data, the value of big data in the following aspects:

1) Sparsity. Mainly manifested in two aspects: first, the uncertainty of the value, big data has no direct use value, it may have value through data mining and analysis; second, the diversity of value, due to the large volume and diversity of big data makes its value also has a diversity, different subjects can be what they want from the big data.

2) Occult. The "Occult" of big data is to say that the value of big data hide in linear and nonlinear multi-type data, its value can be rendered after efficient storage and mining. We usually say that the value of big data is low, in fact, reflects the occult of the big data value. In the era of big data, the real utility of the data lies in its potential value in the future, it seems that there is no value of clutter data, perhaps in the near future will show the extraordinary social and commercial purposes.

3) Sustainability. With the continuous improvement of computer technology, we can retrieve the data in storage device, to reuse it, in order to achieve the total value su-

perimposed. The more in-depth data mining, the more obvious the value presented; the more data reuse, the sustained effect of value will be stronger. In this way, we will find more correlation between different things, predictions of the future will be more accurate.

4. Real Estate Big Data Pricing Model

Real estate big data is different from traditional commodities, so the pricing model is not much that could be taken. Due to the special nature of big data, this paper uses utility theory of value, cost price theory to analysis the price of the real estate big data.

4.1. Utility theory of value

Utility theory of value pointed out that the decision to the price of the real estate big data is its use value, that is, the difference that the expected return of the use of real estate big data before and after is the highest price. The expected return is easy to calculate before using of real estate big data, difficulty lies in the utility of big data is not easy to determine. If the purpose of the purchaser using the real estate big data is clear, then the expected return after its use can be quantified calculation. If the user is not sure about the benefits of using the product, you can refer to the earnings of the competitors used commodity, Analysis of industry value and other methods, to estimate the expected return after use.

4.2. Cost price theory

Cost of production theory pointed out that the decision to the price of the big data is the cost, that is, the cost of real estate big data is the lowest price. The cost includes two parts: the cost of the implementation and the running cost. The implementation of the cost includes data collection costs, personnel costs, hardware and software acquisition costs and so on, operating costs included operating costs, management costs and maintenance costs and so on.

4.3. Theoretical price range

Thus, we can draw the theoretical range of the price of P for the real estate big data is [production cost, utility prices], to provide the basis for the actual transaction price. Due to the asymmetric information and uncertainty information, there is a price negotiation between the buyer and the seller in the actual transaction, which requires the development of a reasonable pricing strategy.

5. Pricing Strategy

The pricing strategy of big data mainly includes static pricing strategy and dynamic pricing strategy. In order to determine the reasonable price of the real estate big data, the paper puts forward the following strategies.

5.1. Negotiation strategy

Negotiated pricing is based on the recognition of the parties to the value of the big data, however, traders are different in cognition of value. Real estate big data owners can use big data trading platform and buyers to negotiate, through the negotiation of trading platform, as far as possible to obtain the mutual recognition on the value of the big data, so as to obtain a reasonable price.

5.2. Auction strategy

Auction strategy can ensure that the interests of the seller, but also to take into account the market principles. Real estate big data owners can use one-time auction strategy, phased auction, feedback auction and other strategies or use a variety of auction forms, such as the combined use of the buyer's auction and reverse auction.

6. Conclusion

The sustainable development of the real estate big data transaction needs reasonable pricing and it needs the comprehensive use of the pricing model and pricing strategy. This paper presents a real estate big data rea-

sonable price range and pricing strategy, thus speeding up the real estate big data assets into the corporate balance sheet, provides the basis for the pricing of real estate transaction data.

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