Research on the Transformation and Upgrading Path of Traditional Industries Driven by Big Data from the Perspective of Big Data Value Chain

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Abstract. Due to the rapid development of digital technology, digital form has become the development direction of various industries. As the main development factor of the current digital economy, big data can effectively drive traditional industries and new transformation and upgrading, bring positive influence to the development of various traditional industries and industries, and effectively solve the problem of high cost and low harvest in traditional industries. Therefore, through the research on the basic theoretical knowledge of big data and the exploration of its internal value connotation from the perspective of the value chain of big data, and the value creativity of big data can be used to complete the transformation and upgrading of the traditional industrial nature. In addition, the three elements of the big data value chain, including data quality, innovative thinking and data analysis ability, provide the ways and means for the transformation of traditional industries, and then put forward relevant policy suggestions for the transform and upgrade the nature of traditional industries.

Keywords: The Value of Big Data, Traditional Industrial Transformation, Ways and Means of Transformation and Upgrading

1. Introduction

In recent years, as a product of information development, big data is the key production factor of the current digital economy, which can bring new opportunities for the development of traditional industries. Xu Zhengzhong pointed out that only through big data can the smart industry in the 13th five years plan be realized. Chen Deyu et al [1] believe that the impact of big data on the industrial structure can be achieved through three aspects, namely, Big data links are used to help transform and upgrade the traditional industrial structure, and upgrade the structure of some industries so as to achieve the coordinated development of various industrial structures.

2. Mechanism of driven by big data, traditional industries will be transformed and upgraded

Big data is not literally more just, and big data was collected through a kind of innovative thinking, and the use of professional technology to deal with the data collected, accordingly to improve the
quality of the whole data collection, the value of the available data all technology is the quality and quantity of data, and analysis of the whole process of big data sorting and innovative thinking [2].

3. Use big data to promote the development of traditional industries

According to different value big data source, you can build a three-dimensional coordinate system, that is to say, the amount of data as well as its quality and data analysis ability with creative thinking, can see from figure 1, conditions, in line with the quality of data volume of data and data analysis ability, continuous improvement of innovative thinking, the value of big data created by the traditional the value creation of point A is higher than that of point C, which can be concluded from the data analysis of small neural network to that of medium neural network [3]. Because the value creation of data is not determined by the single factor of innovative thinking. Of course, it is also limited by the three elements of big data to create value. Improvements in these three factors often go hand in hand. Therefore, the value creation of point A above is higher than that of point B, which also indicates that the more data analyzed, the more creative the data will be and the more powerful the data analysis will be.

![Figure 1. Influencing factors of big data value creation.](image)

4. Big data driven industrial transformation and upgrading

Most of the traditional industries in the transformation and upgrading will encounter the problem is whether they are facing a lack of direction and ability, or external environment, for traditional industries, whether the development of manufacturing industry, medical industry, unbalanced development and other pressures, It limits the pace of transformation and upgrading of traditional industries. Financial industry, communication industry, etc. Will it eventually become one of the whole big data industries [4]. Therefore, we must utilize the power of big data to carry out transformation and upgrading mechanism of traditional industries. It can outline three kinds of transformation and upgrading paths, namely data-driven path, ability building path and thinking dual path (see Figure 2).
5. Data driven path
In general, the most valuable part of big data is the data it collects. The current social data can be said to be the core part of the whole traditional industry. So the data-driven path is based on traditional industries. Through the digital economy, traditional industries can gain access to a large amount of effective data, which can be used as the basis for the development of their enterprises. However, due to the lack of digital technology in traditional industries, they need to use data technology to promote self-transformation and upgrading, so as to better integrate with emerging industries across borders. This path is mainly embodied in the mechanism [5].

5.1. Traditional industries can integrate with emerging industries.
With the development of social economy, it is gradually changing from supply-oriented to demand-oriented, and consumers occupy the main position or even the leading position in the current economic market, according to an analysis of big data and according to these consumers can be concluded that the consumer's needs and preferences, which provided the traditional industry with the direction of product positioning and key, as the data collection and analysis show that can have to traditional industry products to meet consumer demand, in the current social traditional industries and enterprises need according to the data to understand the consumer demand oriented to shift [6]. At the same time, with the industry's pursuit of scope economy, technological innovation and deregulation to break the barriers between industries, more and more different industries are integrating with each other, especially the integration of traditional industry and emerging industry, which is promoted by the current big data environment [7]. This kind of industry integration opportunities are more and more in the process of traditional industry information, leading to traditional industry The data itself will be used as an inducement for cross-border integration with emerging industries.
6. Hierarchical management and cloud search service for the whole life cycle of production data.

As shown in Figure 3, the intelligent Internet platform based on big data can realize hierarchical management of management, technology and operators, automatic generation of customized reports and cloud distribution. Through big data mining, we can realize the portrait of foreman, team and blast furnace, extract key indicators based on mechanism model, and form and perfect effective key performance indicator (KPI) management mechanism.

![Figure 3](image)

**Figure 3.** About big data intelligent Internet platform to realize hierarchical management and cloud search.

7. Conclusion

Traditional industries should combine the specific situation and characteristics of the industry to find the path suitable for the transformation and upgrading of enterprises. For example, in order to improve the level of competitiveness of the emerging industries, it is necessary to use the data as the core technology to improve the competitiveness of the emerging industries. And gradually realize transformation and upgrading. The electronic industry itself belongs to the information industry, with a high degree of integration of industrialization and informatization, and it is easy to perceive the changes of the external big data environment; at the same time, its data analysis ability is easier to build than other industries, so it is more suitable for the ability construction path. Starting from the data analysis ability, it relies on the core technology for transformation and upgrading [8]. For the communication industry, especially the communication operators, their information level is high, they have a lot of data. They can not only mine the data, but also establish the corresponding data system and platform by using digital technology, that is, they can carry out mining innovation and exploratory innovation at the same time, which is more suitable for thinking dual path.

8. Conclusion

In summary, practices are key to achieving policy planning and standards support. Only by promoting the implementation of top-level design of big data, promoting the application of big data technology in traditional industries, transforming enterprises and organizations into data-driven and software-defined enterprises, and promoting the transformation and upgrading of traditional industries, can the big data industry be realized and promoted by the digital economy.
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