

# The Influence Mechanism of Data Commodity Pricing and New Quality Productivity on Innovation

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**Abstract:** Data commodity pricing is a complicated problem, and data commodity pricing has become a key problem to be solved urgently. How data commodity pricing affects new quality productivity and how data commodity pricing affects innovation has become an urgent problem to be solved. This paper adopts normative research method, analyzes the mechanism of data commodity pricing affecting new quality productivity, reveals the mechanism of data commodity pricing affecting innovation, analyzes the mechanism of new quality productivity affecting innovation, and reveals the mechanism of synergistic effect of data commodity pricing and new quality productivity on innovation. The research conclusion mainly includes three aspects. First of all, the mechanism of data commodity pricing to promote new quality productivity is a mechanism to promote technological innovation, improve production efficiency, achieve industrial upgrading and cultivate emerging industries through reasonable pricing of data commodities. Second, data commodity pricing can be a powerful tool to drive innovation. New quality productivity provides abundant resources and space for innovation. Finally, the collaboration between data commodity pricing and new quality productivity can improve the level of innovation more effectively. The research results of this paper can provide reference for theoretical research and enterprise innovation.

**Keywords:** Data Commodity, New Quality Productivity, Enterprise Innovation, Mechanism, Synergy

## 1. Introduction

With the rapid development of the Internet, big data and artificial intelligence technologies, data has become an important strategic resource. As a new commodity form, data commodity has gradually become the focus of market competition. The pricing of data commodities involves many factors such as market, technology, law, etc. It is a complicated research field. The research of data commodity pricing is helpful to deepen the understanding of data value and improve the theoretical system of data commodity pricing. By studying the pricing of data commodities, the value of data resources can be better understood, and reasonable pricing strategies can be formulated to make full use of data resources in the market, so as to maximize the value of data. Through the research on the pricing of data commodities, the real value of data commodities can be better reflected, which is conducive to the income of data producers and the protection of consumer interests. By studying the pricing of data commodities, data producers can be encouraged to provide high-quality and valuable data commodities, thereby improving the overall supply quality and level of the market. Data commodity pricing has become a key problem to be solved urgently. The research of data commodity pricing has important practical significance for promoting the healthy development of data market, realizing the maximization of data value, improving the efficiency of enterprise decision making and promoting industrial innovation. The research of new quality productivity focuses on how to realize the efficient use of resources, the low emission of pollutants, and the coordinated development of economy, society and environment while ensuring the sustainable development of economy. The research of new quality productivity focuses on how to transform scientific and

technological innovation achievements into real productivity and improve the quality and efficiency of economic development. The research of new quality productivity is helpful to promote scientific and technological innovation and social and economic development. Data assets come from data, but for the same data, there are multiple rights subjects, and data producers and data consumers may be integrated. The research of data commodity pricing and new quality productivity can help enterprises better cope with market competition and achieve sustainable development. The research of data commodity pricing and new quality productivity is helpful to promote the digital transformation of traditional industries and realize industrial upgrading. It can help enterprises occupy a favorable position in international competition and provide more support and impetus for technological innovation. The research on the relationship between data commodity pricing and new quality productivity is helpful to better understand the value creation process of data commodity, which provides a basis for enterprises to formulate reasonable pricing strategies of data commodity. By studying the pricing of data goods and the impact of new quality productivity, enterprises can find effective ways to improve their market competitiveness. By studying the pricing of data commodities and the impact of new quality productivity, enterprises can provide scientific basis for the allocation of data resources and help realize the optimal allocation of data resources. The research on the impact of data commodity pricing and new quality productivity on new models helps to better grasp the pricing rules of data commodities, which provides guidance for enterprises to innovate business models and create value under the background of new quality productivity. The research on new models of data commodity pricing and the impact of new quality productivity, which will help promote the healthy development of data factor market. The research on the new model of the impact of data commodity pricing and new quality productivity is conducive to promoting international exchanges and cooperation, jointly coping with global challenges, and achieving mutual benefit and win-win. The research on the impact of data

commodity pricing and new quality productivity on new models can help enterprises better understand the generation, development and change of data value, so as to provide strong support for relevant decisions. Data commodity pricing and new quality productivity affect new models of research, enterprises can discover how prices affect the allocation of resources to achieve more efficient production and distribution. Many scholars have studied the pricing of data commodities. Gkatzelis, Aperjis, and Huberman [1] note that everyone's different attitudes toward privacy, when almost everyone chooses to participate in the market, need to set prices high enough to reduce sampling bias, and discuss how to minimize expected payments to risk-averse sellers by bunkering buyer demand. Based on the key principles of differential privacy and query pricing in data markets, Li [2] proposed a theoretical framework for determining the price of noisy query results. Yu and Zhang [3] propose a two-tier attribute planning model that takes into account both data versioning strategy and data quality. Chawla [4] studied the problem of revenue maximization under query-based pricing and discussed three pricing models, namely: unified bundle pricing, which sets the price for each bundle product; Cumulative or event pricing, where each event is priced and charged at the sum of the prices of all events in the bundle; With XOS pricing, you can get higher logarithmic returns than uniform bundle pricing and transaction pricing. Several pricing strategies are commonly used in online server network products, including connection time based pricing, search based pricing and subscription pricing. The corresponding models and optimization analysis methods are presented [5]. The simpler the pricing model, the more attractive it is to buyers [6]. The two pricing mechanisms of online goods include the purchase model of unrestricted use rights and the billing model of per-use [7]. It is more profitable and efficient to bundle different information goods than to sell them separately [8]. Koutris [9] proposed a query pricing method for Internet data transactions, which divides data products into several parts for partial and overall pricing. When the value of each part of the data product is different or buyers want to purchase multiple parts, the purchase price can be

determined in a reasonable way. Niyato [10] used the concept of SDP (smart data pricing) to give the Internet of Things information pricing model, and the application of SDP on the basis of competitive bidding pricing and cost pricing, and proposed intelligent data pricing based on parcel pricing on Internet of Things information. From the economic point of view, data assets are mainly divided into five aspects, namely, data commodity pricing, data asset management, data market operation mode, data market supervision, data market taxation. The impact of data capitalization on new quality productivity is a complex system. This paper mainly analyzes the impact mechanism of data commodity pricing on new quality productivity and innovation from the perspective of data commodity pricing in data capitalization.

## **2. The Influence Mechanism of Data Commodity Pricing on New Quality Productivity**

The influence mechanism of commodity pricing on new quality productivity is multifaceted. Reasonable commodity pricing strategy can promote the development of market demand, technological innovation, resource allocation, market competition and enterprise strategy, so as to promote the improvement of new quality productivity. The rationality of commodity pricing directly affects the market demand. High prices will cause consumers to turn to other alternatives, reducing market demand; If the price is too low, it will lead to the decline of corporate profits and reduce the investment in new quality productivity. Reasonable pricing strategy can promote the balance between market demand and enterprise profit, so as to promote the development of new quality productivity. Technological innovation is the key factor for enterprises to enhance their competitiveness. Reasonable commodity pricing can bring more profits to enterprises, thus supporting enterprises to increase investment in technological innovation. In addition, reasonable pricing can also encourage enterprises to continue to carry out technological innovation to reduce costs and improve production efficiency, thereby improving new quality productivity. Commodity pricing affects the allocation of resources. Reasonable commodity pricing can

guide the flow of resources to enterprises with high efficiency and high output, thus improving the new quality productivity of the whole industry. On the contrary, unreasonable pricing may lead to the distortion of resource allocation and affect the development of new quality productivity. Commodity pricing affects market competition pattern. Reasonable commodity pricing can reduce the vicious degree of market competition, avoid price war and other vicious competition phenomenon, which is conducive to the healthy development of the whole industry. At the same time, reasonable pricing can also encourage enterprises to enhance competitiveness through innovation, improve efficiency and other means, so as to promote the development of new quality productivity. Commodity pricing affects the strategic decisions of enterprises. Reasonable commodity pricing can bring stable cash flow for enterprises, reduce operating risks, and facilitate enterprises to implement long-term development strategies. At the same time, reasonable pricing can also help enterprises better respond to market changes and improve new quality productivity.

### **2.1 The Influence Mechanism of Data Commodity Pricing on Material Productivity**

Reasonable pricing of data commodities is of great significance for promoting the development of material productivity. Reasonable pricing of data commodities can stimulate the enthusiasm of producers, improve production efficiency, and thus promote the development of material productivity. When the price of data goods is high, producers will increase input and improve production efficiency, thereby increasing the supply of material goods. On the contrary, if the price of data goods is too low, the enthusiasm of producers will be discouraged, production efficiency will be reduced, and material productivity will also be affected. Data commodity pricing can guide producers to produce according to market demand to meet consumer demand. When the market demand for a material product is large, the price of the data commodity will also increase accordingly, and the producer will increase the production of the product to meet the market demand. On the contrary, if the market demand for a material product is small,

the price of the data commodity will be correspondingly lower, and the producer will reduce the production of the product, thus avoiding the waste of resources. Data commodity pricing can regulate the development of material productivity to achieve optimal allocation of resources. When there is an oversupply of a certain material product, the price of the data commodity will decrease accordingly, and the producer will reduce the production of the product to alleviate the contradiction between supply and demand in the market. On the contrary, if the supply of a material good is insufficient, the price of the data good will rise accordingly, and the producer will increase the production of the product to meet the market demand. Data commodity pricing can encourage producers to carry out technological innovation and improve production efficiency. When the production cost of a material product is high, producers will try to find ways to reduce the cost, such as the use of new technologies, new materials, etc., so as to improve production efficiency, reduce production costs, and increase the supply of material products. Data commodity pricing reflects market demand, and price changes guide producers to adjust the scale and direction of production to meet consumer demand. This allows producers to allocate resources more efficiently and increase production efficiency. Data commodity pricing helps to form market competition, prompting producers to improve production efficiency, reduce costs, and improve product quality. Market competition helps to eliminate inefficient producers and concentrate resources to efficient producers, thus improving the material productivity of the whole industry. Data commodity pricing can encourage enterprises to carry out technological innovation and research and development, improve production efficiency, and thus promote the development of material productivity. Reasonable data commodity pricing can help enterprises recover research and development investment, encourage enterprises to continue to carry out technological innovation, improve production efficiency, reduce production costs, and thus promote the development of material productivity. Data commodity pricing helps create economies of scale. When prices rise, producers have more incentive to scale up

production to reduce unit costs. Economies of scale help to increase production efficiency and thus increase material productivity. Data commodity pricing can encourage enterprises to improve product quality, enhance competitiveness, and thus promote the development of material productivity.

## **2.2 The Influence Mechanism of Data Commodity Pricing on Digital Productivity**

Data commodity pricing has an important impact on digital productivity. Data commodity pricing is affected by a variety of factors, including data quality, scarcity, timeliness, data source, data processing degree, and market demand. Together, these factors determine the price level and market acceptance of data commodities, thus affecting the development of digital productivity. Data commodity pricing will have a significant impact on market demand. High prices may dampen market demand and lead to fewer sales of data goods, thus affecting the development of digital productivity. And too low a price may lead to insufficient supply of data commodities, affecting the quality of digital productivity development. Therefore, reasonable pricing is a key factor to ensure the steady development of digital productivity. Data commodity pricing directly affects the investment decisions of data producers. Reasonable pricing can incentivize data producers to increase investment in data production, improve data quality and quantity, and thus promote the development of digital productivity. High prices may cause data producers to reduce investment, which in turn affects the development of digital productivity. Data commodity pricing has an important impact on data flow. Reasonable pricing can reduce the cost of data circulation, promote data circulation and market competition, and thus improve the development level of digital productivity. And too high a price may cause the flow of data to be blocked, which in turn affects the development of digital productivity. Data commodity pricing has an important impact on technological innovation. Reasonable pricing can encourage enterprises to increase research and development investment in data technology, improve the application level of data technology, and thus promote the development of digital productivity. The high price may cause

enterprises to reduce research and development investment in data technology, which in turn affects the development of digital productivity. The level of data commodity pricing directly affects the enthusiasm of data producers. A reasonable pricing strategy can incentivize data producers to provide more high-quality, valuable data, thereby boosting digital productivity. On the contrary, unreasonable pricing strategies may lead to the motivation of data producers to be frustrated, which will affect the development of digital productivity. Data commodity pricing has a great impact on the willingness of data consumers to use it. A reasonable pricing strategy can lower the threshold for data consumers and increase the usage rate of data goods, thus promoting the development of digital productivity. On the contrary, unreasonable pricing strategies may lead to a decrease in the willingness of data consumers to use, thus affecting the development of digital productivity. Data commodity pricing has a great impact on the competitive pattern of data market. Reasonable pricing strategies can attract more data producers and consumers to participate in market activities, thus promoting market competition and digital productivity. On the contrary, unreasonable pricing strategies may lead to distortion of the competitive landscape in the data market, thus affecting the development of digital productivity. Data commodity pricing has a great impact on the quality and innovation of data commodity. A sound pricing strategy can encourage data producers to improve the quality and innovation of data goods, thereby driving digital productivity. On the contrary, unreasonable pricing strategies may lead to a decline in the quality and innovation of data goods, thus affecting the development of digital productivity. Data commodity pricing has a great impact on the application and development of digital technology. Reasonable pricing strategy can reduce the application threshold of digital technology, promote the popularization and development of digital technology, and thus promote the development of digital productivity. On the contrary, unreasonable pricing strategies may lead to the application and development of digital technologies being hindered, thus affecting the development of digital productivity. The pricing of data commodities is directly related

to the costs and benefits of data producers. Proper pricing can incentivize data producers to actively participate in data production and trading, thereby increasing digital productivity. If pricing is too low, data producers may not be able to recoup their costs, resulting in less incentive to produce data. As a special commodity, the pricing of data commodity is affected by market demand. When the market demand is high, the price of data commodities will rise, which will help to increase the enthusiasm of data producers, and in turn drive the improvement of digital productivity.

### **2.3 The Influence Mechanism of Data Commodity Pricing on Green Productivity**

Data commodity pricing has an important impact on green productivity. Data commodity pricing can directly affect the resource allocation of green productivity. Reasonable data commodity pricing can guide resources toward efficient and environmentally friendly green industries and projects, thereby increasing green productivity. On the contrary, unreasonable pricing of data commodities can lead to resource misallocation and reduce green productivity. The pricing of data goods also affects the efficiency of resource allocation. When the price of data commodities is higher, producers may choose to use more environmentally friendly production technologies to reduce production costs. This may prompt companies to invest more in research and development of green technologies and improve green productivity. Data commodity pricing can incentivize companies to invest more resources in green technology innovation. When the price of data commodities is high, companies are more motivated to develop and apply environmentally friendly technologies and processes to improve green productivity. Conversely, if the price of data commodities is too low, companies may reduce their investment in green technology innovation, causing green productivity to stagnate. Data commodity pricing affects market demand, which in turn affects green productivity. Reasonable data commodity pricing can guide consumers to choose green products, thus expanding green market demand. The expansion of market demand will encourage enterprises to increase the production and supply of green products, thus improving green

productivity. On the contrary, if the data commodity pricing is not reasonable, it may lead to insufficient consumer demand for green products, thus affecting the development of green productivity. Reasonable data commodity pricing can provide effective price signals to policymakers and guide them to formulate more targeted incentives to promote the development of green productivity. At the same time, appropriate regulatory measures can prevent market failure in the process of data commodity pricing, maintain market order, and ensure the sustainable development of green productivity. Data commodity pricing will affect the competitive landscape of the international green industry. Reasonable pricing of data commodities can reduce the cost of green industries and enhance the competitiveness of enterprises in the international market. On the contrary, if the data commodity is priced too high, it may cause the green industry to be at a disadvantage in international competition, thus affecting the development of green productivity. Data resource is a kind of intangible asset and has scarcity. With the development of the data commodity market, the value of data resources is gradually emerging, and the impact on green productivity is becoming more and more important. Reasonable pricing can help incentivize the development, utilization and protection of data resources, thereby driving green productivity. Data commodity pricing can help reduce the information asymmetry in the green industry market. By providing transparent price information, enterprises can better understand market supply and demand conditions, so as to adjust production plans, improve production efficiency, reduce production costs, and ultimately improve green productivity.

#### **2.4 The Influence Mechanism of Data Commodity Pricing on Blue Productivity**

Data commodity pricing has an important impact on the development of blue productivity. Reasonable pricing of data commodities can encourage enterprises and individuals to actively participate in the collection and collation of Marine data, thereby improving the quality of Marine data. These data include Marine resources, Marine environment, Marine biodiversity and other

aspects of information. Through in-depth analysis of these data, we can better understand the current situation and development trend of Marine economy, and provide decision support for the development of blue productivity. Reasonable pricing of data commodities can encourage enterprises to invest more resources in Marine technology innovation and research and development, and reduce the cost of data acquisition in Marine economic activities. These technologies include Marine resource exploration, Marine energy development, Marine biopharmaceutical and other fields. Through technological innovation and research and development, the competitiveness of the Marine industry can be enhanced, thus promoting the development of blue productivity. The reasonable pricing of data commodities can guide the rational layout and development of the Marine industry. Through data analysis and market demand forecasting, enterprises can better grasp the direction of the development of the Marine industry, so as to optimize the industrial layout and improve the overall efficiency of the Marine industry. At the same time, data commodity pricing can also guide the government to formulate more targeted industrial policies to promote the development of blue productivity. Reasonable pricing of data commodities can promote international maritime cooperation and competition. Through data sharing and collaborative research, countries can jointly deal with issues such as depletion of Marine resources and pollution of the Marine environment. At the same time, reasonable data commodity pricing can also encourage enterprises to participate in international market competition and improve the international competitiveness of blue productivity. Data commodity pricing can affect the market competition pattern, and reasonable pricing helps to form a fair competition environment. At the same time, data commodity pricing can also promote cooperation between enterprises to achieve resource sharing and complementary advantages, thereby enhancing blue productivity. The reasonable pricing of data commodities can attract more outstanding talents to join the development of the Marine industry. Through the provision of high-quality education training and practical opportunities,

it is possible to cultivate talents with Marine expertise and skills to provide human support for the development of blue productivity. High-quality data can provide enterprises with more accurate analysis and predictions, which can improve productivity. Lower quality data can lead to inaccurate decisions that affect productivity.

### **3. The Influence Mechanism of Data Commodity Pricing on Innovation**

The mechanism of the impact of commodity pricing on innovation is complex, and it is necessary to formulate appropriate pricing strategies through comprehensive consideration of market demand, technological innovation, return on investment, market competition, consumer behavior, laws and regulations, cost control and other factors to achieve enterprise innovation and development. Pricing strategies should be demand-oriented to maximize the value of products. Excessive pricing may lead to insufficient market demand, affecting the promotion and popularization of innovative products. And too low pricing may affect the profitability of the enterprise, thus reducing the investment in product development. The pricing of a product will directly affect its motivation for technological innovation. If pricing is too low, companies may lack sufficient funds to support technological innovation, resulting in uncompetitive products. On the contrary, appropriate pricing strategies can encourage enterprises to increase investment in technological innovation, improve product quality and market competitiveness. The innovation activities of enterprises require a large amount of capital investment, so the pricing strategy has a great impact on the return on investment. The appropriate pricing strategy can improve the profitability of enterprises, so as to provide more financial support for the innovation activities of enterprises. The price of goods will affect the market competition pattern. Reasonable pricing strategy can help enterprises to occupy a favorable position in the market competition, so as to promote the innovation and development of enterprises. The price of goods will affect the purchasing behavior of consumers. Reasonable pricing strategy can attract more consumers to buy products, thus providing market support for enterprises'

innovative activities. Laws and regulations have an important effect on the pricing of goods. When formulating pricing strategies, enterprises should fully consider the requirements of laws and regulations to ensure the compliance of pricing strategies.

#### **3.1 The Influence Mechanism of Data Commodity Pricing on New Technologies**

The impact of data commodity pricing on new technologies involves many aspects such as market demand, supply and demand relationship, competition pattern, regulations and policies. Enterprises need to fully consider these factors and formulate reasonable pricing strategies to adapt to changes in the market environment. New technologies affect the supply and demand of data commodities. The application of new technology can reduce the cost of data commodity production and improve the quality and availability of data commodity. This will lead to an increase in the supply of data goods, and with it an increase in demand, which will affect the pricing of data goods. New technologies change the competitive landscape of data commodities. With the development of new technologies, more and more enterprises have begun to get involved in the field of data commodities, and the market competition has intensified. In order to stand out from the competition, enterprises need to develop the right data commodity pricing strategy to attract more consumers. New technologies affect pricing strategies for data goods. In order to cope with the market changes brought about by new technologies, enterprises need to constantly innovate and adapt their pricing strategies for data goods. New technologies affect the way data commodities are traded. With the application of new technologies, the way data commodities are traded is constantly changing. New technologies influence regulatory policies for data commodities. With the continuous development of the data commodity market, the government's regulatory policies on the data commodity market are also constantly adjusting. Data commodity pricing should fully consider the market supply and demand relationship. In the context of the development of new technologies, the competitive landscape of the data commodity market is also constantly changing. As more players enter the market, competition becomes more intense,

which can lead to price wars that affect pricing strategies for data goods. Data commodity pricing has a significant impact on R&D investment in new technologies. Reasonable pricing of data commodities can encourage enterprises to increase investment in research and development of new technologies, improve technical level and innovation ability. Excessive pricing of data goods can lead companies to reduce research and development investment, which affects the speed and quality of development of new technologies. Data commodity pricing has an important impact on the achievement transformation of new technologies. Reasonable data commodity pricing can lower the threshold for the transformation of new technological achievements, so that more enterprises have the opportunity to obtain and use new technologies, thus accelerating the promotion and application of new technologies. Excessive pricing of data commodities may lead to enterprises being unable to bear the cost of using new technologies, thus affecting the achievement transformation and promotion of new technologies. Data commodity pricing has an important impact on the market competition pattern of new technologies. Reasonable pricing of data commodities can promote market competition and allow more enterprises to participate in the research and development of new technologies and market competition, thus improving the technical level and innovation ability of the entire industry. Excessive pricing of data commodities may lead to monopolization of the market, thus affecting the competitive landscape of the market and the promotion of new technologies. Data commodity pricing has an important impact on the formulation of technical standards for new technologies. Reasonable data commodity pricing can encourage enterprises to participate in the formulation of technical standards and improve the technical level and standardization of the entire industry. Excessive pricing of data commodities may lead to enterprises being unable to bear the cost of technical standards development, thus affecting the development of technical standards and the promotion of new technologies across the industry. Data commodity pricing has an important impact on the talent training of new technology. Reasonable data commodity pricing can

encourage enterprises to increase the training and introduction of technical talents, and improve the technical level and innovation ability of the entire industry. Excessive pricing of data commodities may lead to enterprises being unable to bear the cost of technical personnel training, thus affecting the technical personnel training and the promotion of new technologies in the entire industry.

### **3.2 The Influence Mechanism of Data Commodity Pricing on the New Model**

The pricing strategy of data commodities has an important impact on the new model. A reasonable pricing strategy can help companies maximize profits and attract more users. The value creation of data commodities is at the heart of the new model. With a reasonable pricing strategy, companies can increase the value of data goods and thus maximize profits. The cost control of data commodities is the key to the new model. With the right pricing strategy, companies can reduce the cost of data goods and thus increase profit margins. The market competition of data commodities has an important impact on the new model. Reasonable pricing strategy can help enterprises occupy a favorable position in the fierce market competition, and then realize the profit maximization. As a new type of commodity, the pricing strategy of data commodity will have an important impact on the attractiveness of the market. A reasonable pricing strategy can attract more users and customers, thus promoting the development of new models. The pricing strategy of data goods will also affect its position in the market competition. By setting the right price, the data commodity can be more competitive in the market, thus promoting the promotion of the new model. Pricing strategies for data goods also affect customers' perception of their value. Reasonable pricing can make customers feel the value of the data commodity, thereby increasing customer acceptance of the new model. Pricing strategies for data goods will also affect the development of their business models. By setting the right price, more revenue can be gained from data commodities, thereby supporting the continued development of new models. The pricing strategy of data commodities will also affect the coordinated development of the entire industrial chain. Reasonable pricing can promote the



coordinated development of all links of the industrial chain, thus promoting the popularization of the new model.

Data commodity pricing directly affects the demand side's willingness and purchasing power. Too high a price may cause the demand side to be unbearable, thus reducing the willingness to buy, while low prices may increase the purchasing power of the demand side. Data commodity pricing will also affect the landscape and competitive dynamics of the market. Excessive prices may narrow the market space and intensify competition, while low prices may attract more participants, thereby expanding the market space. Data commodity pricing will affect the value distribution of each link in the industrial chain. Excessive prices may lead to higher returns for data producers upstream of the industry chain, while data users downstream face cost pressures. Data commodity pricing will also affect the quality and availability of data. Too high a price may cause data producers to invest less in their data, reducing data quality and availability. The low price is likely to attract more people to participate in the production, collation and processing of data, thus improving the quality and availability of data. Data commodity pricing will also be influenced by the legal, regulatory and policy environment. Some countries and regions have restrictions on the pricing of data goods, and excessive prices may lead to violations of relevant laws and regulations. Reasonable pricing strategies can ensure that data commodities are traded and circulated under the framework of laws and regulations.

### **3.3 The Influence Mechanism of Data Commodity Pricing on New Advantages**

The pricing of data goods can influence a company's new advantages in market competition. The pricing of data goods is often influenced by the costs of their production, storage, and transmission. Reasonable pricing strategy can help enterprises reduce costs and form cost advantages in market competition. Enterprises can reduce production costs by optimizing data collection, storage, analysis and other links, so as to reduce the price of data commodities and improve competitiveness. Through differentiated pricing strategies, enterprises can formulate different pricing strategies according to

different consumer groups, use scenarios and demand characteristics to meet the needs of different consumers. Differentiated pricing can help enterprises stand out in the market competition and form a differentiated advantage. Economies of scale refers to the phenomenon that with the expansion of production scale, production costs will gradually decrease. Data commodity pricing can create economies of scale by reducing unit costs. Enterprises can reduce the unit cost by expanding the production scale, increasing the sales volume of data goods, thereby reducing the price of data goods and improving competitiveness. The pricing of a data commodity affects its market penetration, that is, the prevalence of the data commodity in the market. Reasonable pricing strategy can help enterprises increase market penetration and form market penetration advantage in market competition. Companies can increase their competitiveness by lowering the price of data goods, attracting more consumers and increasing market penetration. Brand advantage refers to the enterprise through the establishment of brand image, improve the consumer's trust and recognition of its products. The pricing of data goods can form brand advantages by establishing brand image. Enterprises can improve their competitiveness by improving the quality of data goods, service quality and customer satisfaction, and building their brand image.

### **4. The Influence Mechanism of New Quality Productivity on Innovation**

Innovation refers to the creation of new products, services, technologies and management methods to meet the needs of society and the market. There is a close relationship between new quality productivity and innovation. The new quality productivity is the advanced form of productivity development, which is the leap of productivity achieved on the basis of existing productivity through technological innovation, management innovation and system innovation. Innovation is the driving force for the development of new quality productivity and provides a steady stream of power for promoting the development of productivity. The core of new quality productivity is innovation, which can promote the development of technology innovation, product innovation, service

innovation and management innovation. The technological progress brought by the new quality productivity can stimulate the innovation vitality of enterprises, promote the development of new products, new services and new technologies, and improve the competitiveness of enterprises. At the same time, new quality productivity can reduce production costs, improve production efficiency, and provide more resources and space for innovation. With innovation as the core driving force, new quality productivity improves production efficiency and reduces production costs through continuous research and development of new technologies, new products and new services, so as to promote industrial upgrading and enhance competitiveness. New quality productivity provides the basis for innovation. The development of new quality productivity provides material and technical support for innovation, making the innovation process more convenient and efficient. At the same time, new quality productivity improves people's production efficiency and living standards, thus providing more market demand and motivation for innovation.

New technology refers to a series of innovative technologies appearing in today's society. In the process of the development of new quality productivity, the promotion of new technology has played a key role. The application of new technology and the research and development of new technology are closely linked, promote each other, and jointly promote the development of new quality productivity. The development of new quality productivity has brought the demand for new technologies, and promoted enterprises to increase investment in research and development of new technologies. Market demand is the key driving force for new technology research and development, and enterprises continue to develop new technologies and products to meet market needs and improve production efficiency. The development of new quality productivity requires continuous technological innovation and accumulation. Technology accumulation provides a solid foundation for the research and development of new technologies, and the research and development and application of new technologies further promote technological progress and innovation. The government's policy support and guidance for

new technologies provide a strong guarantee for the development of new technologies. By formulating science and technology policies, supporting research projects, and providing financial support, the government encourages enterprises to increase investment in research and development of new technologies and promote the development of new quality productivity. The development of new quality productivity cannot be separated from the coordinated development of upstream and downstream enterprises in the industrial chain. Driven by new technologies, enterprises in all links of the industrial chain can strengthen cooperation, jointly promote the research and development and application of new technologies, and form a good situation of coordinated development of the industrial chain. The development of new quality productivity needs to build a good innovation ecosystem. The innovation ecosystem includes enterprises, governments, scientific research institutions, financial institutions and other entities, which play their respective roles in the development and application of new technologies and jointly promote the development of new quality productivity.

The new model refers to the innovation, improvement and optimization of production methods, organizational methods, business models and other ways to achieve a higher level of resource allocation efficiency, lower production costs and higher economic benefits. The mechanism of the new quality productivity to the new model is multifaceted, including technological innovation, structural optimization, institutional reform, resource allocation efficiency, market competitiveness and social influence. These mechanisms jointly promote the development of new models and provide impetus and support for the growth of the new economy. The core of new quality productivity is technological innovation, including product design, process innovation, equipment renewal, material revolution and so on. These technological innovations can improve production efficiency, reduce production costs, and provide the basis for business model innovation. The development of new quality productivity is often accompanied by the optimization and upgrading of industrial structure, which can enhance the overall competitiveness of the industry and provide space for the

development of new models. The development of new quality productivity needs corresponding institutional changes to support it, including property rights system, market system, financial system and supervision system. These institutional changes can provide policy support and legal guarantee for the development of new models and reduce operational risks and uncertainties. The development of new quality productivity can improve the efficiency of resource allocation, including capital, labor, technology, information and other production factors. The improvement of the efficiency of these resources allocation can provide more capital, talent, technology and information support for the development of the new model, and reduce the development threshold and cost. New quality productivity can enhance the market competitiveness of enterprises, including product competitiveness, cost competitiveness, brand competitiveness and so on. These competitiveness improvements can provide market space and profit margins for the development of new models, and promote their sustainable development. The development of new quality productivity can enhance the social impact of enterprises, including environmental friendliness, social responsibility, and public welfare undertakings. These influence enhancement can provide a better brand image and social recognition for the development of the new model, and promote its sustainable development.

New advantage refers to a kind of comparative advantage formed on the basis of new quality productivity, which helps to enhance the competitive strength of a country. The promotion mechanism of new quality productivity to new advantages is multi-faceted, and the country needs to make continuous efforts in technological innovation, industrial structure optimization, industrial chain modernization, green sustainable development, human resources improvement and institutional innovation, so as to realize the improvement of national competitive advantage. The core of new quality productivity is technological innovation. Through research and development, application and promotion of new technologies, enterprises can improve production efficiency, reduce costs, optimize resource allocation, and thus form competitive advantages.

Technological innovation can also promote industrial upgrading, upgrade the modernization level of the industrial chain, and further consolidate the competitive advantage of the country. The development of new quality productivity helps to promote the optimization of industrial structure and realize the transformation from resource-intensive and labor-intensive industries to knowledge-intensive and technology-intensive industries. This transformation helps to improve the added value of the industry and enhance the position of the industrial chain, thus forming a national competitive advantage. The new quality productivity can promote the modernization of the industrial chain, realize the integration of upstream and downstream, production, supply and marketing of the industrial chain, reduce the risks of the industrial chain, and improve the efficiency of the industrial chain. The modernization of the industrial chain helps to improve the country's competitive advantage and achieve sustainable development. New quality productivity advocates green, low-carbon and circular development, which helps achieve sustainable development. By developing clean energy, promoting energy-saving technologies, strengthening environmental protection and other measures, the country can reduce its dependence on resources and energy, reduce environmental pollution, thereby improving its international image and forming a green competitive advantage. The development of new quality productivity requires high-quality talents, which helps to promote the improvement of human resources. By strengthening personnel training, introduction and incentive, the country can improve the quality of workers, enhance the innovation ability of enterprises, and form the competitive advantage of talents. The development of new quality productive forces also requires institutional innovation. By deepening reform, improving the rule of law, strengthening market supervision and other measures, the country can create an institutional environment conducive to the development of new quality productive forces and form an institutional competitive advantage.

## **5. The Influence Mechanism of Data Commodity Pricing and New Quality Productivity on Innovation**

Data commodity pricing and new quality productivity have an important impact on innovation. Reasonable pricing of data commodities helps to stimulate the innovation vitality of new quality productivity, thus promoting technological innovation and industrial upgrading. Reasonable pricing of data commodities can reduce innovation costs and improve innovation efficiency. Through reasonable pricing of data goods, enterprises can reduce the problem of information asymmetry in the innovation process, so as to improve the success rate of innovation. Reasonable pricing of data commodities can incentivize data owners to share data, thus facilitating the circulation of data in the market. Data flows can spur innovation by making it easier for businesses, researchers, and individuals to access and use data. Data commodity pricing can reduce the cost of acquiring and using data, allowing companies to focus more on innovation.

Data commodity pricing can encourage data providers to continuously improve data quality, thus providing higher quality data support for enterprise innovation. High-quality data can reduce the uncertainty and risk that enterprises encounter in the process of research and development and innovation, thereby improving the likelihood of innovation success. Reasonable pricing of data commodities is helpful to stimulate the innovation vitality of new quality productivity and promote technological innovation and industrial upgrading. The improvement of new quality productivity can promote the production and circulation of data commodities, thus improving the supply and quality of data commodities. This will help to form a more transparent and efficient data commodity market and provide support for reasonable data commodity pricing. Reasonable data commodity pricing can stimulate the improvement of new quality productivity, and the improvement of new quality productivity can promote the development of data commodity market, thus forming a virtuous cycle. New quality productivity through the introduction of new technologies, new equipment, new materials, etc., improve production efficiency, so as to provide more time and resource support for enterprise innovation. The development of new quality productivity provides technical support, market

players, talent support and policy environment for innovation, and jointly promotes the development of innovation. The development of new quality productivity provides technological support, market players, talent support and policy environment for innovation, thus promoting the innovation process. New quality productivity can reduce production costs, thus providing more financial support for enterprise innovation. In addition, new quality productivity can also reduce the cost of research and development, thus providing more financial support for enterprise innovation. The new quality productivity can stimulate the innovation vitality of the enterprise and encourage the employees to participate in the innovation activities more actively. New quality productivity can also provide more opportunities and support for innovation, thus improving the success rate of enterprise innovation. New quality productivity can provide advanced technological means to help innovators complete research and development work more efficiently. New quality productivity can provide financial support to innovators through investment, loans and other ways to reduce the cost of innovation. New quality productivity can attract and train innovative talents and provide a steady stream of talent support for innovation. The new quality productivity can provide a good development environment for innovators by means of policy inclination. New quality productivity can help innovators open up markets and accelerate the promotion and application of innovative results.

### **5.1 The Impact of Data Commodity Pricing and New Quality Productivity on New Technologies**

Data commodity pricing and new quality productivity reshape the value chain of enterprises by reducing information asymmetry and improving resource utilization efficiency, so as to improve the profit level of enterprises. At the same time, this reshaping of the value chain is also conducive to enterprises to invest more resources in the research and development and application of new technologies, thus stimulating the innovation vitality of enterprises. Data commodity pricing and new quality productivity can help enterprises better allocate resources, reduce production costs and improve production

efficiency, thus providing enterprises with more resources and funds to invest in the innovation and application of new technologies. Data commodity pricing and new quality productivity can promote the continuous innovation of enterprises, improve the technical level and innovation ability of enterprises, so as to provide a strong impetus and support for the development of new technologies. At the same time, this innovation drive also enables enterprises to continuously develop new technologies and products to meet the changing needs of the market. Data commodity pricing and new quality productivity can help enterprises establish competitive advantages in market competition and improve their competitiveness, thus providing enterprises with more resources and funds to invest in the innovation and application of new technologies. At the same time, this competitive advantage is also conducive to the continuous development of new technologies and products to meet the changing needs of the market. Synergies between data commodity pricing and new quality productivity can facilitate policy support. Governments can promote the development of new technologies by developing policies that encourage reasonable pricing of data goods and the development of new quality productivity. The synergy of data commodity pricing and new quality productivity is the key to the new technology support mechanism. The synergy of data commodity pricing and new quality productivity can drive technological innovation. Data commodity pricing and new quality productivity have a synergistic effect on the promotion of new technologies. Reasonable data commodity pricing can stimulate technological innovation, improve economic efficiency, promote technology popularization and promotion, and the improvement of new quality productivity can also promote the rationalization of data commodity pricing. Therefore, the development and application of new technologies can be realized through reasonable pricing of data commodities and enhancement of new quality productivity. The influence paths of data commodity pricing and new quality productivity on new technologies mainly include: data value discovery, data quality evaluation, data scarcity, data demand

prediction, pricing strategy, technology research and development, technology application, technology innovation and technology diffusion. By reasonably pricing data commodities and improving new quality productivity, the research, development and application of new technologies can be promoted, thus promoting the development and progress of society. The ways in which data commodity pricing and new quality productivity promote new technologies are interrelated and complementary. A reasonable pricing mechanism for data commodities helps to encourage data trading and provide rich data resources for the research and development and application of new technologies. High-quality data and efficient new quality productivity help to improve the research and development efficiency of new technologies, shorten the research and development cycle and reduce research and development costs. The improvement of new quality productivity helps to accelerate the application and popularization of new technologies and improve the value of technological innovation. The synergy of data commodity pricing and new quality productivity can help create new business opportunities and drive the development of new industries.

Data commodity pricing provides market orientation for new technologies and helps guide the research and development and application of new technologies. System innovation, resource integration and personnel training provide a favorable environment and support for the development of new technologies, and contribute to the rapid development of new technologies. Reasonable pricing of data commodities can attract more investors and funds to support the research and development and application of new technologies. The new quality productivity can improve the allocation efficiency of data resources and make data resources be effectively used in the market. Data commodity pricing can encourage enterprises to develop new data processing technologies and algorithms to improve the efficiency and quality of data processing. The collaboration between data commodity pricing and new quality productivity can help enterprises optimize resource allocation and improve the efficiency of R&D investment. The collaboration between data commodity pricing

and new quality productivity can help enterprises enhance their innovation capabilities and accelerate the research and development process of new technologies. Data commodity pricing and new quality productivity synergies can help enterprises meet market demand and promote the commercial application of new technologies. The synergy of data commodity pricing and new quality productivity can expand market demand. Reasonable pricing of data commodities can improve the competitiveness of enterprises, while the improvement of new quality productivity can drive the demand for advanced technology in the entire industry, thus promoting industrial upgrading. The synergy of data commodity pricing and new quality productivity can enhance market competitiveness. Reasonable pricing of data commodities can improve the competitiveness of enterprises, while the improvement of new quality productivity can drive the demand for advanced technology in the entire industry, thus promoting industrial upgrading. The synergy of data commodity pricing and new quality productivity can promote talent cultivation. Reasonable pricing of data goods can attract more professionals to invest in technological innovation, and the improvement of new quality productivity can drive the demand for talents in the entire industry, thus promoting talent training.

## **5.2 The Influence Mechanism of Data Commodity Pricing and New Quality Productivity on New Models**

Data commodity pricing and new quality productivity play an important role in the exploration and innovation of new models. Through reasonable pricing of data commodities, improving new quality productivity, and strengthening market demand, policy support and industrial chain coordination, the generation and development of new models can be promoted, and more innovation and competitiveness can be brought to enterprises. Technological innovation can improve the collection, storage, processing, and analysis of data, thereby improving the quality and value of data commodities. Organizational innovation can change the organizational structure and management mode of enterprises, improve the operation efficiency and value creation ability of

enterprises. The new model of data commodity pricing needs to pay more attention to data value mining and maximize data value through market mechanism. Through technological innovation, improve the quality and scarcity of data, reduce the cost of data production, and provide data basis for new models. In the new model, the synergistic effect of data commodity pricing and new quality productivity can improve the overall competitiveness of the enterprise and achieve sustainable development. The innovation of market mechanism can provide a better environment for the coordination of data commodity pricing and new quality productivity, reduce transaction costs and improve market efficiency. The synergy of data commodity pricing and new quality productivity can drive enterprises to constantly explore new business models and improve their profitability. The synergistic effect of reasonable data commodity pricing and new quality productivity can improve the competitiveness of enterprises in the market and promote enterprises to become bigger and stronger. The synergy of data commodity pricing and new quality productivity can promote the rapid development of the industrial chain and provide more opportunities for the entire industry. The synergy of data commodity pricing and new quality productivity can promote technological innovation of enterprises and improve production efficiency and innovation ability. The synergy of data commodity pricing and new quality productivity can promote enterprises to achieve sustainable development and improve their market competitiveness and social influence. The synergy of data commodity pricing and new quality productivity can promote enterprise management reform, improve enterprise management efficiency and market adaptability. The synergy of data commodity pricing and new quality productivity can promote the development of new models, such as the development of emerging technology industries such as big data, artificial intelligence, and the Internet of Things, thereby driving economic development and social progress. The synergy of data commodity pricing and new quality productivity can help enterprises allocate resources more effectively, reduce costs, and

improve production efficiency. The synergy of data commodity pricing and new quality productivity can help enterprises innovate business models and expand new market space. The synergy of data commodity pricing and new quality productivity can help enterprises increase customer value and enhance customer stickiness. The synergy of data commodity pricing and new quality productivity can produce significant synergies, thereby enhancing the competitiveness of the new model. The synergy of data commodity pricing and new quality productivity can realize the effective integration of resources, thus providing strong support for the development of new models. The synergy of data commodity pricing and new quality productivity can promote technological innovation and provide continuous innovation impetus for the development of new models. Enterprises can use the value of data commodities to develop new products and services, improve production efficiency, reduce production costs, and provide continuous power for the development of new models. The synergy of data commodity pricing and new quality productivity can help companies gain insight into market needs and provide direction for the development of new models. The synergy of data commodity pricing and new quality productivity can help enterprises enhance their competitiveness and provide a strong guarantee for the development of new models. The synergy of data commodity pricing and new quality productivity can help companies improve compliance and risk management capabilities, enabling the development of new models. Assessing the value of data can help develop appropriate pricing strategies for new models, thus attracting more participants and improving the liquidity of data commodities. In the new model, the synergy of data commodity pricing and new quality productivity can further stimulate market vitality and improve production efficiency. The ways of data commodity pricing and new quality productivity to support the new model mainly include. Data commodity pricing can incentivize enterprises to carry out technological innovation, improve production efficiency and quality, and thus promote the development of new models.

### **5.3 The Influence Mechanism of Data Commodity Pricing and New Quality Productivity on New Advantages**

Data commodity pricing and new quality productivity play an important role in forming new competitive advantages. Data commodity pricing is the basis of new quality productivity. The rational use of data commodity pricing and new quality productivity can effectively promote the competitive advantage of enterprises. Through reasonable pricing and the improvement of new quality productivity, enterprises can reduce production costs and improve product quality, thus occupying an advantage in price and quality. Through differentiated pricing and the improvement of new quality productivity, enterprises can meet the needs of different customer groups, increase market share, and thus occupy an advantage in the market. Through reasonable pricing and the improvement of new quality productivity, enterprises can improve product quality and brand image, so as to occupy an advantage in brand influence. Through technological innovation and management innovation, enterprises can improve innovation ability and develop new products and services, so as to occupy an advantage in the market competition. The synergy of data commodity pricing and new quality productivity can promote enterprises to continuously carry out technological innovation and management innovation, improve production efficiency and create new competitive advantages. The synergy of data commodity pricing and new quality productivity can promote enterprises to better integrate internal and external resources and improve resource utilization efficiency. Enterprises can attract more partners through reasonable pricing of data goods, and realize resource sharing and optimal allocation. Through the collaboration of data commodity pricing and new quality productivity, enterprises can improve production efficiency, reduce production costs, improve product quality and market competitiveness. At the same time, enterprises can also create new market demand and expand new market space through innovative means. The synergy of data commodity pricing and new quality productivity can promote industrial upgrading and structural optimization, and improve the production efficiency and competitiveness of the entire industry. Through reasonable pricing

of data commodities, enterprises can attract more investment and innovation resources, and promote the upgrading and development of the industry. The synergy of data commodity pricing and new quality productivity can help drive technological progress and innovation. Through market feedback and data analysis, enterprises can continuously adjust and optimize the production process and improve production efficiency. At the same time, the improvement of new quality productivity also helps to promote technological progress and innovation, and form a sustainable competitive advantage. The synergy of data commodity pricing and new quality productivity can help reduce production costs and improve corporate profits. Enterprises can adjust production scale and cost structure according to market demand and competition to achieve cost control.

## 6. Research Conclusion

The research background of data commodity pricing and new quality productivity mainly involves the pricing of data commodities in the era of big data and how to use new quality productivity to improve the value of data commodities. By studying the value law of data commodities, the application of new quality productivity in data commodity pricing and the combination of the two, we can provide strong support for promoting data-driven innovation and economic development. The research of data commodity pricing and new quality productivity is of great significance. This paper analyzes the mechanism by which data commodity pricing affects new quality productivity, the mechanism by which data commodity pricing promotes innovation, the mechanism by which new quality productivity affects innovation, and the mechanism by which the synergy between data commodity pricing and new quality productivity affects innovation. The research conclusions of this paper are shown as follows. The pricing of data commodities needs to consider the quality, scarcity, availability and timeliness of data to realize the reasonable allocation of data resources. The value evaluation of data commodities is the basis of pricing. The key to the pricing of data commodities lies in how to determine a reasonable price. Reasonable data commodity pricing can stimulate innovation, promote fair competition, optimize resource allocation and

promote the coordinated development of the industrial chain, thus improving new quality productivity. The mechanism of data commodity pricing on innovation is complex, which needs to consider the market structure, pricing strategy, competition degree and other factors. The right pricing strategy for data commodities can encourage innovation that drives economic growth and social progress. The influence mechanism of new quality productivity on innovation is comprehensive, involving technological innovation, organizational innovation, institutional innovation, market innovation and cultural innovation. Enterprises need to fully grasp the opportunities brought by new quality productivity, actively promote innovation, improve core competitiveness, in order to adapt to the changing market environment. There is a mutually reinforcing relationship between data commodity pricing and new quality productivity. Reasonable pricing of data commodities can promote the development of new quality productivity, and the development of new quality productivity can improve the quality and value of data commodities. Data commodity pricing involves quantification, evaluation and pricing of data value. Applying new quality productivity to data commodity pricing innovation can help enterprises evaluate data value more accurately and improve the scientific and rational pricing. Data commodity pricing helps encourage innovation and provides incentives for those who can provide quality data products and services, driving progress across the industry. The synergy between data commodity pricing and new quality productivity can provide a good environment for the development of new technologies. The synergistic mechanism of data commodity pricing and new quality productivity on the new model is mainly manifested in synergistic innovation, synergistic development, synergistic optimization, etc. Such synergistic effect can help enterprises optimize and upgrade their business model, improve their overall competitiveness, and lay a solid foundation for the success of the new model. The influence mechanism of data commodity pricing and new quality productivity on new advantages is a dynamic and complex process, which involves many aspects. The synergy of data



commodity pricing and new quality productivity can promote enterprises to continuously carry out technological innovation and management innovation, improve production efficiency and create new competitive advantages.

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