

Analysis on Asset Confirmation of Enterprise Data Resources

Kaijun Zhong

13701172987@139.com

Capital University of Economics and Businesses, Beijing, China

Abstract. The confirmation of data resource assets is an important prerequisite for the correct implementation of the Interim Provisions on Accounting Treatment of Enterprise Data Resources. This paper analyzes typical data resources, such as personal information related, virtual goods related, open source data, derived data and data as a service, from the relevant legal norms and the characteristics of economic activities in application scenarios, distinguishes the ownership of their owners' property rights and the types of economic benefits obtained, and puts forward the conclusion of asset recognition.

Keywords: data resources, asset recognition analysis, accounting processing

1. Introduction

On August 21st, the Ministry of Finance issued the Provisional Regulations on Accounting Treatment of Enterprise Data Resources, responding to social concerns about whether data resources can be recognized as assets and what type of assets they should be recognized as, which is conducive to promoting the development of the national digital economy. Due to the complexity of ownership and multiple values of enterprise data resources, which are different from tangible resources and intangible resources such as technology and brand, accurate asset recognition of enterprise data resources has become a challenging issue. Accurately confirming data resource assets is an important prerequisite for enterprises to correctly implement the Provisional Regulations on Accounting Treatment of Enterprise Data Resources. The asset recognition of typical data resources owned by enterprises is of great significance for ensuring the implementation of the <Provisional Regulations on Accounting Treatment of Enterprise Data Resources>.

2. Analysis of Difficulties in Confirming Data Resource Assets

The ability of data resources to become data assets for enterprises is generally considered to meet the following conditions: firstly, they arise from internal or external transaction activities of the enterprise; secondly, they are operated or controlled by the enterprise under legal and compliant conditions; thirdly, they can bring economic benefits to the enterprise; fourthly, their value is measurable. [1] It can be seen that the asset recognition of enterprise data resources is closely related to the ownership of property rights and the characteristics of economic activities in application scenarios. Due to the particularity of the latter two, asset recognition of data

resources has become an urgent issue to be addressed. One is that the ownership of data resources has the characteristics of composite subjects, non exclusivity, and renewability. [2] Most data resources belong to a collection of mixed rights of multiple entities. Data resources can be replicated and provided for simultaneous use by multiple entities without necessarily affecting the interests of other users. Data resources can continue to be generated and reused without being consumed with use. [3] The second is that the business application of data resources has three values: business service value, intelligent decision-making value, and circulation empowerment value. The primary value of data resources is to support the operation of enterprise business systems and achieve business connectivity. The secondary value is to make production and operation decisions more intelligent and efficient through data mining and analysis. The tertiary value is to further release the business value of data resources through data circulation and convergence under market regulation. These tertiary values are both a progressive relationship and a parallel relationship that can be achieved simultaneously.

The asset recognition of data resources is highly complex and requires classification. Traditionally, the classification of data resources is based on industry sectors, data sources, data ownership and privacy protection methods, or data presentation forms. [4] Experts advocate that digital resources can be divided into three categories based on market operation logic: self use and data products. [5] Among them, data products refer to a series of products or services with commercial or social value developed by integrating, analyzing, and mining data, thereby bringing actual value to customers. [6] However, for the asset recognition of data resources, accurate analysis and determination can only be made based on the analysis of the economic activity characteristics of data resources in specific business application scenarios, in accordance with relevant laws and standard specifications. Therefore, based on the induction and analysis of the main business application scenarios of enterprise data resources, this article analyzes the ownership and economic benefits of five typical data resources widely used in the main business application scenarios of enterprises, including personal information related, virtual item related, open source data, derivative data, and data as a service, and proposes their asset recognition types

3. Analysis of Asset Confirmation for Personal Information Data Resources

In many enterprise business application scenarios such as e-commerce and ride hailing services, individual users are both users and producers of data resources. Enterprises invest funds, technology, and labor costs to collect, manage, and apply data resources, but data resources integrate a large amount of personal information belonging to users. In most cases, it is difficult to separate user personal information data from enterprise data resources in terms of business applications and value judgments. Legally, laws and regulations such as the Personal Information Protection Law require companies to obtain the consent of individuals when processing personal information, and individuals have the right to withdraw their consent. [7] In practice, enterprises and users often adopt the method of signing service contracts for agreement. With the authorization of users and the responsibility to protect user privacy, enterprises can use user personal information data for business operations and commercial utilization without the need to pay special fees to users.

According to the definition of accounting standards, assets need to be owned or controlled by the enterprise to distinguish between self owned assets and other assets, which is a necessary condition for determining whether data resources are enterprise assets. The user personal information data resources owned by enterprises are obviously not entirely owned assets of the enterprise. [8] Asset control usually refers to the right or ability to obtain future economic benefits related to assets. In practical application scenarios, due to the fact that individual user personal information data cannot generate actual economic value, only the aggregated personal information data resources can generate economic value. It is common for users to give control of personal information data to enterprises. One is that enterprises obtain user authorization through signing service contracts and exercise actual control over personal information data resources, that is, they have actual management and operation rights, and can independently use personal information data resources for management and operation activities and seek economic benefits; The second is that the exercise of users' rights to restrict, copy, transfer, correct, and delete personal information data is achieved through the actual control of personal information data resources by enterprises. Therefore, it can be determined that personal information type data resources are controlled by enterprises. It should be noted that although enterprises have obtained authorization to use personal information data and transfer rights to third parties through signing contracts with users. However, personal information data is not a commodity, but rather privacy. Its use and transfer are subject to legal restrictions such as the Personal Information Protection Law. Only on the premise of ensuring that the enterprise's use and transfer are legal and compliant, and that the enterprise enjoys and bears the economic benefits and related risks related to the ownership of personal information data resources, can personal information data resources be recognized as intangible assets of the enterprise.

4. Analysis of Asset Confirmation for Virtual Item Data Resources

In 2022, the number of online game users in China exceeded 500 million, there were over 50000 online game companies, and the scale of virtual item transactions exceeded 60 billion yuan. Online games have become a component of the real economy. Due to the prevalence of online games, various virtual items such as equipment and props owned by online game users can be sold and traded under certain conditions, thereby converting them into real property. These virtual items exist in a digital and non physical form, created, developed, and managed by enterprises. In online games, there are various ways and means to obtain virtual items, such as completing game tasks, participating in specific activities, defeating bosses, recharging and purchasing, etc. The virtual item data resources possessed by enterprises include virtual item user data (user ID, game time, game type, game level, character name, equipment items, etc.), game data (game gameplay, storyline, combat power, scores, task completion status, virtual equipment usage, etc.), and operational data (marketing, advertising, recharge discounts, user feedback, game maintenance, etc.). By conducting big data mining and analysis on virtual item data resources, enterprises can adjust game difficulty, virtual item sales prices, or acquisition methods reasonably to make game scenes more fair, thereby improving user gaming experience and enhancing game fun. Therefore, virtual item data resources are the core resources for enterprises to enhance their competitiveness and profitability

Virtual items have certain property properties and can enter the market for sales and exchange. They belong to a type of network virtual property and are protected by law. Virtual items belong

to specific numerical symbols with specific appearances and meanings, and their existence is based on the normal operation of the game and the normal operation of the server. They are difficult to detach and transfer from the game environment and can only be generated with the game scene or user purchase. There is no inventory status stored in advance in the enterprise. The provision of virtual items by enterprises to users is essentially a service that can achieve specific functions in the game environment, and this service is constrained by the service contract between enterprises and users. After obtaining virtual items from the enterprise through participating in game activities or purchasing, users gain control and disposal rights of the virtual items and can profit through transfer transactions. For users, it is an independent intangible asset. For enterprises, the revenue obtained from the sale and licensing of virtual goods belongs to software service revenue. The income obtained by users from the transfer of virtual item usage rights belongs to other equity intangible asset income as stipulated in the Notice of the Ministry of Finance and the State Administration of Taxation on the Comprehensive Promotion of the Pilot Program of Replacing Business Tax with Value added Tax . The user's right to use virtual items comes from the contract authorization signed with the enterprise, which belongs to a special type of right, that is, the ownership of virtual items still belongs to the enterprise. The enterprise can recover or take prohibited measures against the user's violation of legal provisions and contract agreements in using and transferring virtual items. Users gain control and disposal rights over virtual items, and the economic benefits obtained from this will not flow into the enterprise. According to the relevant provisions of the Intangible Asset Standards, the data resources formed by virtual objects as digital symbols with specific appearances and meanings do not belong to the intangible assets of enterprises. However, due to the fact that enterprises obtain control rights over user registration, activities, and transfers related to virtual goods through the signing of service contracts, the economic benefits obtained from using relevant data resources to serve intelligent decision-making belong to the enterprise. From this perspective, virtual items do not belong to enterprise assets, but their associated data resources should be recognized as intangible assets of the enterprise.

5. Analysis of Asset Confirmation for Open Source Data Resources

Open source data refers to data legally obtained from open or publicly available Internet resources, that is, data that anyone can share without paying, such as enterprise business data, bidding data, etc. on the national credit website. With the rapid development of informatization and networking, open source data has become an important source of enterprise data resources. On the Internet, open source data accounts for more than 95% of the total data volume. In addition to traditional websites and public databases, online communities and search engines have also become the main channels. In the era of ChatGPT's booming artificial intelligence big model, open source data resources have become an important driving force for the rapid development of artificial intelligence. Open source data resources related to artificial intelligence are mainly concentrated in fields such as biometrics, natural images, and word processing, such as the Global Geospatial Vector Data Resource Set, Wikipedia Large Language Modeling Corpus, and facial and speech data resource sets. Open source data has typical non exclusive property rights characteristics of data resources.

At present, open source data resources have become an essential production factor for enterprises, especially artificial intelligence enterprises, to carry out production activities and

create huge economic value. Enterprises do not have separate ownership or control over the obtained open-source data resources, but have the right to use, copy, delete, and other rights that belong to the data owner, that is, they have actual ownership and control rights, and open-source data resources should be recognized as intangible assets of the enterprise. Enterprises have almost zero cost access to open-source data resources, but utilizing open-source data resources has created huge economic benefits. In the accounting processing of enterprises, open-source data resources should be reflected to ensure that the accounting records of enterprises accurately reflect the goals of using data resources to carry out business activities. Enterprises can adopt the method of nominal bookkeeping for accounting treatment, which recognizes open-source data resources as intangible assets of the enterprise at a nominal value of "1 yuan", and there is no accounting impairment treatment for this nominal measurement.

6. Analysis of Asset Confirmation for Derived Data Resources

Derived data resources refer to new data resources formed by enterprises using algorithms and other data processing techniques to process the original data for specific purposes after the original data resources are collected, recorded, and stored. Derived data has the ability to reflect specific things, objective laws and characteristics of facts, and is often used for market forecasting, improving the efficiency of enterprise production and operation, and other aspects. Compared to personal information based data resources, derivative data resources usually undergo thorough data desensitization processing and no longer carry identifiable sensitive information such as personal privacy. They can enter the market for normal circulation and trading through authorized licensing, transfer and sale, making them not only of strong use value, but also of higher transaction value. Derived data resources are mostly transitional data resources, and enterprises can use them to produce different data products according to the needs of different terminal data products. Derivative data products are mainly divided into two categories. One type is external service-oriented data products, such as Taobao.com's "Business Advisor" and Baidu.com Index; One type is internally applied data products, such as enterprise customer management systems, marketing systems, risk control decision-making systems, etc.

Compared to original data resources that only have recording properties and lack creativity, derivative data resources use algorithms to intelligently create and process data resources, making them more effective, innovative, and applicable, thus having higher economic value. Compared to original data resources, the production of derivative data resources requires significant investment in core technologies such as algorithms, as well as financial, material, and human resources, bringing value-added benefits to enterprises and forming new commercial value, thus becoming exclusive economic interests protected by law. [9] According to the provisions of the Personal Information Protection Law, individuals, as owners of information, have the right to withdraw their consent to the use of personal information data by enterprises. However, the effectiveness of personal information data processing activities based on their consent prior to withdrawal is not affected, that is, derived data resources that have already been formed are not affected by withdrawal. Therefore, it ensures that the derived data resources are actually owned by the enterprise, should be recognized as intangible assets of the enterprise, and can be applied for sale, transfer, licensing, leasing or exchange, with complete business services, intelligent decision-making, and circulation empowerment value of the data resources.

7. Analysis of Asset Confirmation for Data as a Service Data Resource

In the era of big data, data service providers are becoming increasingly active and their importance is widely recognized. Data service providers provide customers with reliable data resource services, including market research data, consumer behavior data, enterprise data, financial data, etc. The common way of providing these resources is to establish a data product library for users to choose from. The data product library established by this provision method belongs to enterprise assets and meets the definition and recognition conditions of inventory in Enterprise Accounting Standard No. 1- Inventory. It should be treated as inventory for accounting purposes. With the development of cloud computing, data and services (DaaS) as a new type of data service has rapidly developed due to its low cost and high efficiency characteristics. The biggest feature of DaaS is to transform the packaging and sale of data product libraries into on-demand data resource services provided to users. The usual business model is for users to selectively order certain data resources. The pricing method for DaaS service providers to charge users is based on the quantity of data provided, that is, based on the amount of data used by users and the relevant data analysis and processing services provided. [10] As part of the development trend of "Everything Serves" (XaaS), DaaS enables users to access and use various data resources without having their own data infrastructure, demonstrating strong development vitality and broad development prospects.

The essence of DaaS is to transform standardized data resource products into personalized data resource services for users. The DaaS platform needs to organize data resources into business data resource libraries, thematic data resource libraries, and knowledge data resource libraries, and then aggregate them into a data resource pool. Then, using offline computing, real-time computing, and streaming computing engines, it can provide on-demand real-time data resource services to users through data application programming interfaces (APIs), or provide customized datasets and other data resource services. There are two main billing methods for DaaS: one is to use APIs for synchronous or asynchronous billing services when providing data, and the other is to use offline non real-time statistical log data for billing. DaaS is a personalized service aimed at different user needs, with fixed quality and quantifiable price, and belongs to the category of data products. Before providing services, DaaS needs to go through various stages such as data collection, preprocessing, storage and management, value mining, and value transmission. Data resources on the DaaS platform are already in a state of collection, preprocessing, storage, and management, which means that the data resources on the DaaS platform are in a product in progress state during the production process. They belong to the assets of the enterprise and meet the economic benefits included in the inventory standards, which are likely to flow into the enterprise, And the recognition conditions for reliable cost measurement should be recognized as enterprise inventory.

8. Conclusion

The resource confirmation of five typical data resources, including personal information related, virtual item related, open source data type, derivative data type, and data as a service type, will promote the implementation of the Provisional Regulations on Accounting Treatment of Enterprise Data Resources. In the era of big data, the digital economy with data as the core production factor has penetrated into various fields and levels of enterprises, and more and more

products and services are presenting a data-driven form. The promulgation of the Provisional Regulations on Accounting Treatment of Enterprise Data Resources provides clear guidance for enterprises to play the economic role of data resources and lays a solid foundation for the sustainable and healthy development of the digital economy. To further improve the asset recognition of data resources, it is necessary to accurately understand and grasp the essence of relevant business, accurately distinguish ownership and types of economic benefits obtained, and continuously promote the standardization of asset recognition of data resources based on their specific business applications.

References

- [1] Xiao Wenjing, Research on Accounting Treatment and Presentation Disclosure of Data Assets in Internet Enterprises, *Journal of Business Accounting* . 2023 Issue 4, PP 73-76
- [2] Shi Jianzhong, The Deconstruction of Data Concepts and the Construction of Data Legal System - Also on the Discipline Connotation and System of Data Law, *Journal of Social Science Digest*. Issue 5, 2023,PP 118-120
- [3] Qin Rongsheng, Confirmation and Measurement of Data Assets in the Digital Economy Era, newspaper of *The Economic Observer*, December 20, 2020
- [4] China Academy of Information and Communication Technology, *Data Assetization: Research Report on Data Asset Recognition and Accounting Measurement (2020)* PP 11-12
- [5] Cui Jia Long, How to Open the Data Element Market: Reflection on Enterprise Data Ownership under the Background of Data Element Market Construction, *Journal of Shanghai Legal Research Collection* Volume 6, 2023, PP 6-9
- [6] Data Products:How Managing Data as a Product Accelerates Business Outcomes, November 12,2020,
<https://www.harbrdata.com/insight/data-products-how-managing-data-as-a-product-accelerates-business-outcomes>
- [7] Xu Xun,Research on Legal Issues of Personal Information Commercial Utilization in the Era of Big Data, Master's thesis from Hubei University in 2019
<https://cdmd.cnki.com.cn/Article/CDMD-10512-1020315517.htm>
- [8] Priscilla Regan, Privacy and Commercial Use of Personal Data: Policy Developments in the United States,
Journal of Contingencies and Crisis Management. Volume 11 , Issue 1 . 2003. PP 12-18
- [9] Shankaranarayanan G, Even A, Berger P.D. , Optimizing Data Management with Disparities in Data Value, *Journal of International Technology and Information Management*, 2015, 24(3):1-24
- [10] Wangshan, Discussion on the Business Model of Big Data as a Service on Baidu Academic Website
https://xueshu.baidu.com/usercenter/paper/show?paperid=1h7e02q01y240r30mu2s0j30df077371&site=xueshu_se