

# Difficulties and Suggestions of Data Asset Entry

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After eight months of soliciting opinions, the Ministry of Finance of China officially issued the "Interim Provisions on Accounting Treatment of Enterprise Data Resources" on August 21, and it will come into effect from January 1, 2024.

Enterprises shall, in accordance with the relevant provisions of accounting standards for business enterprises, recognize, measure and report transactions and events related to data resources according to the purpose of holding data resources, formation mode and business model, as well as the expected consumption mode of economic benefits related to data resources.

This means that data assets are formally included in the scope of financial accounting, and the attributes and values of assets are accounted for and reflected by the way of enterprise financial accounting, which is of decisive significance for establishing data elements as an important component of enterprise assets, especially intangible assets.

However, due to the special properties of data assets, there are still some difficulties in the process of financial entry.

First of all, we interpret from the perspective of financial accounting: the three major characteristics of assets are: 1. Assets should be owned or controlled by enterprises; 2. The assets are expected to bring economic benefits to the enterprise; 3. An asset is a resource formed by a past transaction or event.

Similarly, data assets must also conform to the above three characteristics, so data ownership is to prove that the asset belongs to the resources owned or controlled by the enterprise. Secondly, the economic benefits that data assets can bring to the enterprise must be measured and accurately calculated.

## ***Problems in accounting recognition of data assets***

### ***The rights and responsibilities of data assets are uncertain***

How to prove that the data asset belongs to the resources owned or controlled by the enterprise, it is necessary to carry out data ownership. Perhaps the data we use internally can identify the so-called data owner. However, many data are related to data ethics and are not well defined as resources controlled by enterprises, such as owner membership information, business operation information, and so on. Does the data belonging to this part really belong to the enterprise? Is it personal privacy, or is it public data agreed by the government, which needs to be provided free of charge and so on.

### ***The revalidation of data assets is unclear***

If we regard data assets as a special category of intangible assets, the capitalization and cost problems existing in the subsequent recognition of intangible assets will also be faced with data assets. There is a difference between capitalized expenditure and expensed expenditure. In the production and operation activities of an enterprise, the consumption of assets is tracked and further refined into capitalized and expensed expenditure. The standard of division is to consider the place of consumption, if at the cost of this part of consumption in exchange for new assets, is capitalized expenditure, if this part of consumption is used for business operation, then this economic benefit outflow, called expensed expenditure. However, the data in a data asset has special properties, and it is difficult to define which data generates value and how much value. So it's harder to define capitalized or expensed expenditures.

### ***The conditions for the confirmation of data assets are not uniform***

As we all know, in the existing balance sheet, the conditions for the recognition of fixed assets and intangible assets are clearly defined (for example, when fixed assets are not put into use, they are generally regarded as projects in progress). With these recognition principles, it is possible to better distinguish which intangible assets are, so as to carry out the next work. However, the current research has not made clear the relevant recognition principles of data assets, and the relevant theories have not been perfected. Data quality determines whether to include assets, and similarly, changes, derivatives, destruction, and other actions during the use of data also affect the confirmation of data assets. Then, data collection, storage, processing, cleaning and other stages need to calculate the corresponding accounting value, and clarify the recognition principle of each stage.

### ***Problems in accounting measurement of data assets***

#### ***Initial measurement of data assets***

1. The complete selection of traditional units of measurement has been unable to meet the demand from the statistical data, in the various standards that can be used for accounting measurement, there are often multiple units of measurement, and most of the standards have their own units of measurement. Therefore, different measurement objects have different requirements, and the specific measurement objects may have different measurement units because of the different purposes of measurement. In fact, the selection of accounting units of measurement is also based on the actual operation and management of enterprises. When the social and economic environment changes significantly, more valuable accounting units of measurement should be selected in time for specific economic businesses, so as to provide relevant accounting information that is more conducive to making management decisions. Therefore, for data assets, taking into account its particularity, it is not conducive to accurate accounting treatment by using conventional currency measurement.
2. The selection of measurement attributes of data assets is not clear. The measurement attributes of data assets are generally registered in the accounting accounts and reported in the financial statements of the enterprise to determine its actual amount. The measurement of data assets is not suitable to rely on replacement cost and present value attributes. In addition, historical cost refers to the actual cost and cash to be paid when completing a certain production activity or creating a certain wealth, which is the actual cost at the time of acquisition. Net realizable value is the net value of the expected selling price after deducting processing costs, etc. In the face of these measurement attributes, it is necessary to choose which data assets are suitable for.
3. The criteria for determining the initial confirmation amount of data assets are not clear. Since the initial recognition amount of an asset is the basis for its entry into the account, the recognition is an important basis for subsequent accounting treatment. Taking into account the particularity of data assets and referring to the initial recognition method of intangible assets, it is necessary to determine the initial recognition amount of data assets more accurately from the two aspects of outsourcing and self-made, so as to lay a good foundation for re-recognition and measurement. However, given the special nature of data assets, its particularity should also be considered in determining the initial confirmation amount. How to more accurately measure the initial confirmation amount of data assets from different sources is worth further research.

### ***Subsequent measurement of data assets***

1. It is difficult to determine the service life. As a special intangible asset, the service life of data assets is like intangible assets, and the specific amount cannot be determined. The service life of the intangible assets legally acquired by both parties shall not exceed the actual period prescribed by the enterprise; If the law does not specify the service life of intangible assets in detail, the enterprise needs to consider the basis of judgment based on appropriate factors, and cannot adopt the above methods, it can be considered that the service life is uncertain. Therefore, to determine the service life of data assets, it is necessary to refer to the relevant treatment methods of intangible assets in accordance with the characteristics of data assets.
2. The amortization method is not clear. When choosing the amortization method, the enterprise should combine its own economic needs, determine the specific consumption mode from the maximum expected benefit, and apply it uniformly in different accounting periods. The amortization methods of intangible assets mainly include straight-line method and accelerated depreciation method. The straight-line method is to evenly distribute the amortization of intangible assets in each accounting period, while the accelerated depreciation method is a method of amortization in the initial use of intangible assets and less in the later use of intangible assets. Data assets need to select the most appropriate of these amortization methods to refine subsequent measurements.
3. The economic value of data assets is subject to fluctuations. The economic value of data assets is easily affected by many factors. Compared with other intangible assets, data assets are easy to fluctuate under the influence of application scenarios and environment. In order to better measure the changes in the value of intangible assets, China's accounting standards and related systems require enterprises to formulate corresponding supervision and management regulations to periodically review the book value of their financial statements. When the book value is higher than the recoverable amount, intangible assets impairment provisions should be made according to the difference; In fact, data assets should also refer to its principles, such as the purchase of land data from data suppliers, then after one or two years, this part of the data should actually be impaired, but the specific amount of impairment needs to be formulated.

### ***Proposals for the development of accounting recognition of data assets***

Clearly reconfirm data assets 1. Data assets obtained from external sources. In particular, it should be emphasized that for data assets obtained from the outside, if there is a transfer of ownership or partial ownership during the transaction process, the asset can be confirmed and included in the "data assets" column under the "intangible assets" account. If it does not involve the transfer of ownership, but at the same time as obtaining the right to use the data, it has certain rights such as agency, distribution, resale, etc., which can obtain income through the transaction of the data asset, the enterprise can include it in the asset column. If only the right to use data is obtained, such as having a use license, and the enterprise cannot obtain future income through external transactions, it does not involve the transfer of "data assets" and cannot cause relevant changes in the subject, and the enterprise can only include it in the cost or expense column. 2. Internally generated data assets According to the formation mode of internally generated data assets, the enterprise's own data assets can be divided into active research and development data assets and associated data assets generated with production and operation. In general, according to the relevant provisions on intangible assets, expenditures in the production and research stage should be included in the current profit or loss; Expenditures related to the development stage, which meet the capitalization conditions, shall be capitalized, and research and development expenditures that cannot be distinguished by object shall be fully included in the profit and loss of the current period. However, in the actual operation process, due to the influence of many unforeseen factors in R&D activities, it is not easy to specifically and clearly divide the two stages, which requires special consideration.

Clarify the conditions for the recognition of data assets. The definition of data assets should meet the clear principles. This paper holds that only when the four conditions of realizability, controllability, quantification and identification are met can they enter the statistical work of accounting financial statements and data resources can be regarded as data assets. The relevant validation conditions for data assets are:

The first is the realizability, data assets must be able to bring economic benefits to the enterprise;

The second is controllability. Data assets must be data resources that enterprises can own or control under the premise of compliance with laws and accounting standards.

The third is quantification, that is, data assets need to be able to be separated or divided from the actual production and operation of the enterprise, and can be reliably measured in currency;

Fourth, it is identifiable, that is, data assets can be separated or derived from contractual rights.

### ***Proposals for the development of accounting measurement of data assets***

#### ***Initial measurement of data assets***

1. The unit of measurement is a combination of monetary and non-monetary. Data assets can not be fully measured in money, for example, by using their own data assets to make valuable analysis for the development direction of the enterprise, project decisions, etc., can not be fully reflected by monetary measurement. Therefore, I personally believe that the measurement of data assets can take the form of a combination of monetary and non-monetary, and adopt a suitable form, so as to realize the comprehensive value of data assets statistics.
2. The measurement attribute is mainly fair value. The value of data assets is constantly fluctuating, and the actual value of data assets is constantly changing under the influence of the market, so the historical cost method can not measure its actual value in time. Similarly, considering that the processing and acquisition of data assets is a continuous long-term process, the net realisable value method is not applicable. This paper argues that data assets are more suitable for fair value measurement, because compared with other measurement attributes, fair value can better reflect the change of market value.
3. Determine the initial confirmation amount according to different data acquisition methods. Data assets acquired from external sources usually have a certain degree of activity in the open market, at which time their fair value can be used as the initial recognition amount; If there is no active market, the consideration paid by the data asset will be received as the initial recognition amount. Internally generated data assets will inevitably cause certain loss of human, financial, material and other important resources. Therefore, in the initial stage of cost recognition of data assets, various costs should be taken into account and weighted average calculation of each cost.

#### ***Subsequent measurement of data assets***

1. According to the service life of intangible assets, the approximate age is determined. Considering the particularity of data assets, the determination of their service life is related to whether they can be fully utilized. Since the timeliness of the data has a great impact on the value of the data itself, the definition of its service life should not be too long. Considering the characteristics of data assets, we should make a comprehensive analysis of their specific service life, so as to make a more scientific forecast for the future and realize the maximum economic value of data assets. According to the accounting standards of intangible assets, this paper puts forward the following principles: First, the service life of the data asset should be until the data asset loses its use value; Second, the data assets under contract shall not exceed the period specified in the contract; Third, for data assets without a contract, the period of time that the data assets can bring economic benefits should be determined comprehensively with reference to various influencing factors; Fourth, data assets that do not meet the above principles can be identified as data assets with uncertain service life.
2. Amortization by accelerated depreciation method. For the subsequent amortization of data assets, it is suggested that accelerated depreciation method is more appropriate. On the one hand, the value of data assets is greatly affected by timeliness, and with the passing of time, the timeliness of data assets will also decrease year by year. Data assets have great utilization value, and the initial data resources are advanced and timely, and the data assets often excavated have high value. In the later stage, with the passage of time and the generation of new data resources, coupled with the constant changes of the market economy, the po-

tential economic value of the original data resources will also be decreasing. On the other hand, in the process of the continuous development of the information society, the replacement of data assets will be more rapid, and its life cycle will be shorter. When the accelerated amortization method is adopted, the amortization of data assets is larger in the early stage and smaller in the later stage, which meets the realistic demand of data assets' own characteristics.

3. Provision for impairment of data assets. Although data assets have the characteristics of reusable, its value will decrease with the change of information timeliness, the progress of technical means and the change of internal and external market environment, that is to say, there is a phenomenon of impairment of data assets. Although the value of data assets is impaired with external changes, it does not mean that the data assets have no economic value, but the relative value declines, so it is necessary to do a good job in the measurement of data assets in a timely manner. For internal data assets that cannot be quoted publicly, when the recoverable amount is compared with the carrying value, a provision for data asset impairment is made according to the difference between the two accounting treatment methods for intangible assets.

## Summary

Although the digital economy has been in full swing and the economic value of data has become increasingly apparent, the accounting treatment of data assets is still a relatively new research topic. We need to truly master the systematic theory of data asset accounting in order to successfully enter data assets into the table.