Chapter 24
Accounting Lending Attributes Sinking Based on the Metadata and Cloud Data

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Abstract Lending attributes the existence of several hundreds of years, of China also has the nearly 200 years history, its existence has certain historical reason and the theoretical basis, the rapid development of information technology, the modern information society by borrowing attributes of accounting information recorded cannot reflect the overall economic information, cannot satisfy people comprehensive information needs. This article from the "metadata" and "cloud data" technical theory, in combination with the new trend of development of accounting information, the "borrowing attributes" limitations were discussed and deduced "leasehold attributes" will "sunken" this for a fact.

Keywords Metadata · Cloud database · Lending attributes

24.1 Research Background

In August 1999, 12 organizations including American Institute of Certified Accountants, five accounting firms (Price Waterhouse Cooper, Deloitte, KPMG, Ernst and Young, and Anderson), Edgar On-line, Microsoft construct the basic XBRL executive commission. In order to better promote the application of XBRL, XBRL executive commission decided to set up XBRL international organization [1]. Since the birth of XBRL in 1998, XBRL gained rapid development. Especially, as the newest standard and technology of financial information process, XBRL has extensive functions [2]. All corporate information, especially financial information,

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can be processed effectively through Internet on the computer [3]. Once information distributor input the information, he can easily transform the information into written document, PDF file, HTML homepage, or other corresponding file format without reentering. Meanwhile, information which is gained through XBRL can be easily applied in all fields like financial analysis without print or reentering. XBRL increases the transparency of revealing corporate financial report and also increase the efficiency and ability of handling financial report information.

XBRL has been applied in China. The Shanghai Stock Exchange and The Shenzhen Stock Exchange have begun to research and experiment on XBRL technology. In order to carry out national information development strategy, comprehensively increase accounting information management level, further deepen accounting reform and fully exert accounting functions, the Ministry of Finance announce exposure draft of China XBRL Classification Standard Structure Norm, China XBRL Classification Standard Basic Specification and Finance and Accounting Information Resource Core Metadata Standard in November in 2009 and formerly announce Interim Provisions to Progressively Promote Application of XBRL.

24.2 Financial and Accounting Information Resource Metadata

24.2.1 Concept of Metadata

The most essential and abstract definition of metadata is data about data. It is a widely existing phenomenon. It has its specific definition and application in many fields.

In the field of data warehouse, metadata is defined as descriptive data and environmental data. Generally speaking, metadata has two functions. First, metadata can provide user-based information. For example, business description metadata that record data can help users using data. Second, metadata can support system to manage and maintain data. For example, metadata that is about data storage can support system to access data in a most effective way.

In the world of information, metadata is defined as a kind of structural data that provide information resource or data. It is a structural description about information resource. Its function is to describe the characteristic and attribute of information resource or data itself and regulate organizations of digital information. In addition, metadata has positioning, exploring, testing, evaluation, and chosen function.

In exposure draft of Financial and Accounting Information Resource Core Metadata Standard by our Ministry of Finance in November in 2009, financial and accounting metadata is defined to describe data from data set in all forms of financial and accounting information resources. And core metadata data is to subdivided to describe metadata entities and factors which are the most basic attributes of financial and accounting information resource data set.

24.2.2 The Structure of Metadata

In exposure draft of Financial and Accounting Information Resources Core Metadata Standard announced by our Ministry of Finance, structures of financial and accounting information resources metadata, mainly including seven aspects which are English name, XML remark, definition, form of data, value, annotation, and value examples are described. The file format of value example can be JPG format. It is a collection of scanned document of original evidence including 6,500 independent files when certain actual resource business happens. It means that every metadata has a detailed description.

24.2.3 Meanings of Quoting Metadata by Financial and Accounting Information Resources

In exposure draft of Financial and Accounting Information Resource Core Metadata Standard, five required metadata or metadata entities and seven optional metadata factors or metadata entities are defined. To sum up simply, name, keywords, resource description, duty officer, URL, date, format, language, right management, currency, attachment, resource number are included. Also, it is stated that user can extend the metadata contents defined according to the characteristics of financial and accounting information resource and requirements of resource utilization. Seen from it, any business operation generated by corporations can be defined and described by metadata. Meanwhile, metadata can provide all necessary information with compiled code. This can facilitate search and utilization of financial and accounting information resources, and help to build communicative bridge between corporate business system and decision supporting system. Also, it is helpful for the storage of these resources.

24.3 Cloud Data and Cloud Computing

From above discourse, we can conclude that business operation generated by corporations can be described in detail by using metadata. And this is sure to result in diversified data forms, and explosive increase of data volume makes corporate data environment close to the extreme of volume. Meanwhile, data maintenance and management is increasingly heavy. Database administrator (DBA) is backing up, optimizing, expanding the volume, and increasing availability in a circular manner. The problem we are faced with is how to solve storage and computing problem of immense data.

24.3.1 Cloud Data

Cloud Data that is CloudDB or shortened as CloudDB is a kind of data storing network resources. It regards different relational database as a series of simple bivariate table and operate based on a simplified version of SQL or access objects. CloudDB solves the problem of data collection and sharing. Through it, database users do not need to control machine with running original data, neither do they need to know their place. In this ideal state, CloudDB can support infinite concurrent users and provide with inexhaustible data application resources. That corporation applies metadata form to describe business operations may lead to increasing data volume and arouse storage problems. This can be solved by metadata.

24.3.2 Cloud Computing

Cloud computing is regarded as super computing mode based on internet. Corporate and personal users can acquire the computing ability through internet. The fundamental principle is that computation is spread on a large number of distributed computers instead of non-local computers or distance servers, thus users can be provided with sufficient computing abilities and super computing ability can become possible through internet free flow. Thus, it is possible to solve the problem of immense data computation because of corporate business operation describing metadata.

24.4 Debit–Credit Bookkeeping

24.4.1 Emerge of Debit–Credit Bookkeeping

Debit–credit bookkeeping originated in Italy from 13 to 14th century. Characters of debit and credit in debit–credit bookkeeping keep accounts using their original meanings and reflect creditor's rights and liabilities. With the development of commodity economy, debit–credit bookkeeping is continuous developing and improving. Characters of debit and credit are losing their original meaning, and have become bookkeeping symbols endowed with profound economic intension. Debit represents stationary point of capital movement (that is temporary lingering point as capital movement has no end point theoretically), which means that accounting bodies can know where the capital is going (usage, direction, and existing form of capital); credit represents the starting point of capital movement, which refers to where capital that accounting entities own comes from (currency representation of certain specific assets). In 1,494 an Italian mathematician named Luca Pacioli published his work Summa de Arithmetic, Geometria, Proportioni et Proportionalita.

It symbolizes that debit–credit bookkeeping had become recognized double entry bookkeeping. It also symbolizes the beginning of accounting in modern history. Therefore, Luca Pacioli is regarded as Father of Accounting in Modern History.

24.4.2 Theoretical Basis and Restrictions

Debit–credit Bookkeeping takes "capital=liabilities+ owners' right" as theoretical basis and "accounting objects" as theoretical foundation, and debit and credit as bookkeeping symbols. It reflects the capital movement. It is a double entry bookkeeping with bookkeeping principle that debit goes along with and equals to credit.

24.4.3 Restrictions of Debit–Credit Bookkeeping

From the theoretical basis of debit–credit bookkeeping, we can see that it has certain restrictions. It only reflects valuable information but does not reflect invaluable information. It only reflects economic activities related to balance sheet but can not fully reflect other important information, for example, stock price information. It only reflects accounting objects i.e., corporate internal information, but can not reflect other important information in supply chain of electronic information times, for example, suppliers' material information and information about client's demanding abilities. The information that debit–credit can not reflect is the important information that corporate operators and investors demand in electronic information times. When applying debit–credit bookkeeping, we should know that every business operation should be recorded to two or more than two accounts to debtor or creditor. This is a very complicated process involving many links such as preparing accounting vouchers, setting up accounts, registering books, and so on. Meanwhile, in the rapid development of information technology in modern information times, society demands comprehensive information. It is unknown whether people can change accounting information from capital movement theory to economic information theory.

24.5 Conclusion: Sinking of Debit–Credit Bookkeeping

From above discourse, it can be seen that debit–credit bookkeeping reflects capital movement. At first, it can not satisfy economic information theory of comprehensive information demand in electronic information times. Second, it is complicated and hard to understand to apply the debit–credit bookkeeping theory to actual operations. Third, it is an embarrassing phenomenon that the two characters of debit and credit have similar meanings but symbolize completely opposite-sided

capital movement. Based on the above reasons, can debit–credit bookkeeping drop out? Now it is the time. The maturity of metadata handling technology and the application of metadata in financial and accounting information facilitate corporations to fastly promote application of financial and accounting information resource metadata handling (corporations use metadata standard to describe and store in the long-term process of informatization as information resources in financial and accounting fields generated by business operations are concentrated). Another serious problem will occur: redundancies and repetition of data recording. It can be concluded from the above discussion that recording problems of recording business information resources can be solved by applying metadata method. And metadata method can have a more detailed record of business than debit–credit bookkeeping. Meanwhile, paradox of increasing data volume brought by the above process, and storage and computing problems of immense data volume can be resolved by applying CloudDB and Cloud computing. It can be seen that keep debit–credit bookkeeping does not need to coexist with and metadata. Which one should go down from this stage? Considering global economic integration and corporate information demands, we can have the answer that debit–credit bookkeeping should sink.

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