Research on the Factors Influencing XBRL Financial Reporting Innovation

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Abstract. XBRL is an important technical innovation in the field of financial reporting, and its adoption and diffusion is affected by many factors. In this paper, the concept and characteristics of XBRL are discussed to analyze the influence of factors including technology factor, organization factor and environment factor on the adoption and diffusion of XBRL. At present, in China, the complexity, compatibility, technical advantages of XBRL technology and imitative pressure on the market environment have significant effect on the adoption and diffusion of it. In addition, the cognitive degree of XBRL technology has a significant effect on its adoption and diffusion. However, the learning resources and training of XBRL technology as well as the normative pressure of the market environment have no obvious effect on its adoption and diffusion.

Introduction

The idea of XBRL was first proposed in April 1998 by Charles Hoffman, an accountant in Washington State. [1] In December 31, 1998, he presented a prototype which used XML as a tool for preparing financial statements. XBRL was originally called "XFRML"(XML based Financial Reporting Markup Language), it was a plan sponsored by the American Institute of Certified Public Accountants (AICPA) in 1X90s. [2] The purpose is to provide a global enterprise information supply chain based on XML, which is convenient for users to obtain exchange and analyze. At present, the research of XBRL financial reporting has become an important emerging field of accounting research. [3] The development of the network financial report provides a new way to disclose information. However, the general financial report is essentially a kind of mass production of standardized financial report. The general financial reporting model has been always criticized for it can not meet the needs of users. [4] The current study shows that XBRL technology can bring advantages for various stakeholders of financial report supply chain. It has also been showed that this technology plays an important role in improving the efficiency of supervision, strengthening the protection of the interests of investors, improving the transparency of information and promoting international convergence of accounting standards. But the natural advantage of XBRL technology does not necessarily convince stakeholders to voluntarily adopt it, the adoption and diffusion of this technology is affected by a variety of factors.

The concept of XBRL

XBRL(Extensible Business Reporting Language)is the international standard which is open and not confined to a specific operating platform, it can store, process, reuse and exchange financial and business reporting data in an open, timely, accurate, efficient and economical way. [5] It applies XML(Extensible Markup Language) into the exchange of financial reporting information. At present, it is the latest standard and technique for processing unstructured information, especially for processing financial information. t identifies and classifies the financial data, and provides a more powerful explanation and analysis platform for financial information.

Technical features of XBRL

XBRL does not open up a new accounting information system or change the accounting system data. [6] Through XBRL, the financial information disclosed by the enterprise entirely depends on the main reporter. XBRL is just a standardized approach. Technically, XBRL has the following features:

①True hyperlink. XBRL specifically defines the type, format, title and content of the same file with the strict grammar. It has brought great convenience for users to query information or super efficient link when browsing the files. XBRL can achieve very fast and accurate search, its efficiency is much higher than that of PDF, WORD and HTML file formats. XBRL can also establish links between different information, investigate the data source and track data from top to bottom. For example, when you read the balance sheet and need to understand the details of the "stock", you can trace the links until you find the composition of the inventory and certificates, etc.

②Custom. XBRL can output different results for different objects and requirements. Through the integration of different accounting systems and sharing of different information sources, according to the requirements of managers, shareholders, creditors and other stakeholders, it can provide typewritten data, financial data that meet different requirements, detailed information of bank and tax information of corporate, etc. However, XBRL does not optionally disclose information to the outside world, but deeply excavate information released by the existing authorization. This kind of excavation is restricted by corporate disclosure policies.

③Cross platform use and data sharing. XBRL has the characteristics of cross platform use. In different operating systems, such as Windows, UNIX and Linux, XBRL can be used directly without modification. In different applications, even if the database is different, as long as XBRL format is used, the data exchange can also be achieved. In this way, XBRL is literally the true Internet financial reporting language. At the same time, XBRL has fully differentiated the file type and its logical information so that accurate match in the process of searching files, cross platform data and database resource sharing can be achieved. It is an open technical route.

④Timeliness of information. The WebPages applying HTML cannot be updated automatically; each data in XBRL requires an accurate metadata. Metadata means that corresponding label needs to be added to data of the XBRL file, so that systematic and structured information flow can be established among data. When entering the new data, the important function of the label "time" makes it possible that information of different periods can be timely and efficiently categorized. Therefore, the data updating becomes more timely and convenient.

⑤Efficiency. The financial information of XBRL format is recognizable and continuous data flow, so it is more reliable, accurate and fast for the private transmission. The financial information of XBRL format only need to be input once, then the output data and the required information can be generated according to different requirements, finally the data sharing and data consistency can be achieved. It not only reduces the risk of inputting errors, and ensures the consistency of the data, but also avoids duplication of data entry, saves a lot of manpower and material resources as well as improves the daily data entry and closing speed. In this way, the efficiency and benefit are improved. For the same financial report, XBRL can also be output in a variety of formats. At the same time, XBRL technology as a global standard, each software company and information system which applies this technology must comply with the relevant norms of XBRL. This makes it possible that the software and information system can deal with the XBRL data in a unified way. In this way, the incompatibility problem of individual software can be eliminated which is helpful to the automatic exchange and processing of information.

Influencing factors of XBRL financial reporting innovation

Based on innovation diffusion theory, organization learning theory and institutional theory, this paper specifically analyzes individual factors of technology, organization and environment to examine the determinants of the impact of XBRL financial reporting diffusion, so as to make up the

gaps in the domestic research.

A. Technical factors

As the primary factor, technical factor determines whether the company can apply and develop this technology well or not. [7] Doolin and Troshani take advantage of innovation diffusion theory to determine which related characteristics of technology innovation will have a greater impact on the adoption of XBRL technology. The results show that the relative characteristics include relative advantage, compatibility, complexity, testability and observability. Tornatzky and Klein's research on the influencing factors of technological innovation diffusion and other organizations' researcher on electronic data interchange (EDI) mainly focus on the research of relative advantage, compatibility and complexity. Some technical advantages of XBRL technology, such as standardized tag format, cross platform technology and other technology combined with computer technology, are potentially helpful to improve the comparability, reliability, availability, accuracy and transparency of financial information so as to make the data easier to analyze and improve the effectiveness of decision making. In addition, XBRL technology helps to improve the efficiency of financial information generation and transmission, thus saving costs and forming a more effective financial reporting process.

B. Organizational factors

In this part, the organizational attributes that may affect the adoption of technology are described. [8] The existing literature studies organizational factors from the perspective of organizational learning. The study shows that some organizations may have some difficulties in the use of complex technology, thus forming barriers to organizational learning, and then they may refuse to adopt these technologies. [9] Therefore, from the perspective of reducing knowledge barriers, he proposed complex diffusion theory. He holds the view that the organization may delay internal independent adoption, until they get enough expertise to successfully implement and operate the technology. XBRL technology is a complex technology which needs enough technical and accounting knowledge.

From the perspective of organizational learning and with the help of existing research literature, the first organizational factor is professional knowledge about organization that is the organization's perception of XBRL technology including knowledge of this technology and its usefulness and usability. One's perception of usefulness is the degree to which a person believes that the use of a technology can improve the performance of the organization, while one's perception of usability is the degree to which a person believes that the use of a technology can let someone free from effort. Specifically, the organization can be judged from the following aspects: first, the attitude of the company executives. Executives are the company's decision makers; their attitude will directly affect the development of the technology in this company. Secondly, the staff's aware of technology. If the company's staff has high cognitive level of XBRL technology, then the development and dissemination of XBRL technology will be all right. Finally, it is the company's financial preparation. If the company has the financial reserves for XBRL technology, the company is more likely to introduce and apply it under the premise of not affecting the current economic activities.

With the help of external knowledge resources of XBRL technology, organizations can accumulate more technical knowledge about XBRL; thereby their knowledge barriers would be reduced. Therefore, in addition to professional knowledge, the factors that influence organizational learning about XBRL technical knowledge include external resources of organizations. Previous studies have shown that external sources of information channels are very important for organizational learning.

C. Environmental factors

Institutional theory emphasizes the role of environment in the adoption of innovative technology. If the organization does not comply with the relevant norms, it may lead to the lack of legitimacy and the bad influence on acquiring resources. The explanation of the institutional theory to the environmental factors focuses on the external organizational pressure and social expectations. The environmental factors mainly include two categories: imitation pressure and normative pressure. Imitative pressure refers to the pressure come from the process of driving organization to achieve

success through imitation. Imitative pressure is usually presented in two ways: the frequency of adoption of innovative technologies in other organizations. This reflects the conformity effect; the organization followed the best practices adopted by other organizations. The second one is the pressure by simulating competitors. If competitors are successful in using an innovative technology, other organizations may also adopt the innovative technology. Normative pressure is defined as the pressure to drive the organization to comply with the professional standards to achieve the legitimacy of the organization. Normative pressure comes from professional norms. After associations and government departments prescribe companies to implement or accept XBRL technology, the company will understand the technology accordingly. Even if it is not implemented within the company, the companies will display and report their plan in accordance with the relevant regulations and technical specifications. Furthermore, the requirements of business partners will affect the company's own choice; the main idea of the industry will also have a certain degree of impact on companies.

Conclusion

China has joined the XBRL international organization. with a lot of chances to learn from advanced international experience, China seeks the commonality and advancement among technologies of different countries, promotes the indigenous development of XBRL financial reporting technology and creates an atmosphere of applying XBRL technology in market and the listed companies. With more complete information exchange platform, the importance and application level of financial reporting presented by users of the financial information will inevitably attract awareness and attention of listed companies. In this way, the degree of actual adoption and diffusion will also increase. Therefore, organizations should perfect the current domestic XBRL information exchange platform so that users of financial information can conveniently collect financial information and the reporting cycle of XBRL financial reporting is moving from regular to real-time. In this way, timeliness and relevance of domestic XBRL report would be improved and ultimately promotes the adoption and diffusion of XBRL financial reporting. Meanwhile, in the trend of large-scale application of XBRL technology, users of financial information will be more inclined to choose the company which internally adopts XBRL financial reporting. Thus companies which adopt XBRL financial reporting will get better benefits.

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