

# The Impact Mechanism of Certification Body on ISO14001 Certification Effectiveness of Enterprise

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**Abstract.** Based on knowledge management, the paper discusses the factors that the certification body influences the effectiveness of enterprise environmental management certification. The factors are including certification bodies, audited enterprise, media, influence channel and influence context. Then the paper establishes network model.

**Keywords:** Certification Body, Knowledge Management, Environmental Management System.

## 1. Introduction

Environmental management system is a system and database which integrates procedures and processes for training of personnel, monitoring, summarizing, and reporting of specialized environmental performance information to internal and external stakeholders of a firm (Sroufe, Robert.2003). The most widely used standard on which an environmental management system is based is ISO 14001( Melnyk S A et al.,2003). The ISO 14000 family of standards are developed by ISO/TC 207 and its subcommittees. The standards provide practical tools for companies and organizations of all kinds looking to manage their environmental responsibilities. ISO 14001:2015 and its supporting standards focus on environmental systems to achieve this. The other standards in the family focus on specific approaches such as audits, communications, labeling and life cycle analysis, as well as environmental challenges such as climate change. There are 346189 certifications to ISO 14001 in 171 countries around the world at the end of 2016. Top 10 countries for ISO 14001 certificates of 2016 can be seen in Tab.1.



**Table.1.** Top 10 countries for ISO 14001 certificates of 2016

No.	Country	Quality
1	China	137230
2	Japan	27372
3	Italy	26655
4	United Kingdom	16761
5	Spain	13717
6	Germany	9444
7	India	7725
8	France	6695
9	Romania	6075
10	United States of America	5582

## 2. Literature Review

ISO14001 certification bodies are specialized third party agencies. False certification happens over and over again in China, undermining the social credit mechanism. The certification industry is an important tool and technical support for the national governance system, and also a modern service industry and high-tech service industry encouraged by China. According to the “13th Five-Year” Development Planning for National Strategic Emergency Industries issued in 2016, the certification industry was included as a national strategic emergency industry. Zuo and Tang (2017) research on influence of the effectiveness of such certifications as service quality of certification body on the enterprise performance. Zuo et al. (2017) discussed the impact of certification body on certification effectiveness of enterprise.

In 1958, Polanyi, a British scholar, first explicitly put forward the concept of "tacit knowledge" and systematically discussed the difference between tacit knowledge and explicit knowledge. It is of great value to scientific research and social practice. In the early 1960s, Peter Drucker first put forward the concept of knowledge workers and knowledge management. He emphasized that we are moving into the knowledge society and knowledge society is the most basic economic resources. Also, knowledge and knowledge workers in the society would play a major role in daily life. After 1980, Peter Drucker continued his pioneering work on knowledge management and put forward that the typical enterprise of the future is based on knowledge which is made up of a variety of experts who make their own decisions and self-management based on information. In middle and late 1990s, Thomas h. davenport put forward two stages of knowledge management and knowledge management model and has done pioneering work in knowledge management engineering practice and knowledge management system. At the same time, the differences between tacit knowledge and explicit knowledge are expounded by the Japanese Ikujiro Nonaka, and the SECI model is put forward, and the model of mutual transformation between explicit knowledge and tacit knowledge is expounded. At the beginning of the 21st century, Swedish entrepreneur and enterprise analyst, Dr. Karl-Erik Sveiby's theoretical research on knowledge management has turned to the direction of combining with practice and comparing with each other. From the concrete practice of enterprise management, he obtained the important role of further mining implicit knowledge and pointed out that personal knowledge is irreplaceable.

## 3. The impact mechanism of certification body on enterprise environmental certification effectiveness

The certification authority has influence on the effectiveness of enterprise environmental certification. The network model elements of these influences include influence subjects (certification bodies), influence objects (audited enterprises), media, influence channels and impact scenarios.

The subject of the certification body influences on the audited enterprise mainly lies in the willingness and ability of the certification body and the auditors. The higher the potential difference of knowledge, the higher the requirement for the transfer intention of certification bodies and auditors. Tacit knowledge mostly reflects the individuality of the individual but cannot be said. When a party with knowledge lacks motivation, it is likely to gain the upper hand in the transfer of knowledge to the

protection of knowledge. The following factors affect the efficiency and cost of knowledge transfer: How does the certification body change the environment; Choose the appropriate transfer mode; Effective coding of transferred knowledge; The tacit knowledge can be transformed into a demonstrable and mobile explicit knowledge to the greatest extent.

The impact object is the audited enterprise. It depends on the learning ability and organizational motivation of the audited enterprise. The learning ability is related to the accumulation of past experience and related knowledge. The more experience and knowledge accumulated, the more the enterprise can absorb and utilize the new knowledge. And it is helpful for the learning process of new knowledge. In order to effectively utilize new knowledge, enterprises must first develop their ability to absorb new knowledge. Traditional factors of production are easily imitated. But knowledge is the most difficult source of core competitive advantage. Traditional factors of production are easily imitated. But knowledge is the most difficult source of core competitive advantage. According to the theory of resource dependence, the knowledge between the accrediting agency and the audited enterprise is heterogeneous and complementarity. There is demand for the knowledge resources scarcity of the auditor. It lays the foundation for the implementation of ISO14001 certification. Certification body auditors can also improve their own auditing skills through the study of the conversations, process analysis and management patterns of relevant principals of the enterprise. When there is a lack of incentive for knowledge transfer within the audited enterprise, the negative factors such as power struggle and negative attitude in the enterprise are reviewed. It affects the willingness of audited enterprises to accept knowledge and limits the efficiency of knowledge transfer.

Influence channel refers to the way in which the certification body shows the invisible and explicit knowledge to the audited enterprise. For example, use interviews, questionnaires, final meetings and other methods to communicate with enterprises and give feedback to enterprises. If the ISO14001 system is implemented better, the enterprise will attach importance to the suggestions made by the certification body and integrate into the daily operation and management to improve the performance of the enterprise.

The media mainly refers to the explicit knowledge and tacit knowledge that the accrediting agency embodies the value-added service. In particular, the internal recessive and complexity of the latter affects the audit of the audited enterprises to a certain extent. The complexity of knowledge increases the difficulty of absorbing knowledge and reduces the efficiency of knowledge transfer. When the knowledge is too complex, it is difficult for the audited enterprise to grasp the knowledge as a whole, so it cannot fully absorb the required knowledge.

Organizational scenario refers to the factors that affect the communication between the certification body and the audited enterprise. (1) The knowledge potential difference. Knowledge transfer is the process of transferring knowledge to the subject with low knowledge potential. The factors that determine the potential of knowledge are the quantity of knowledge, the quality of knowledge and the structure of knowledge. The auditor has many years of experience and extensive experience in auditing, their knowledge structure and knowledge system are different from those of the audited enterprises. The difference is called knowledge potential difference. The smaller the knowledge gap between the certification body and the audited enterprise, the easier it is for the audited enterprise to accept the rationalization proposal put forward by the certification authority and put into practice. However, when the knowledge potential difference is too small and the knowledge accumulation is relatively high, the audited enterprises will lose the enthusiasm of the recommendation of the certification body because of the high knowledge overlap. When the knowledge potential difference is too large and the knowledge accumulation is relatively low, it will take a lot of time, energy and cost for the audited enterprises to use the knowledge coordination activities. At this point, knowledge absorption power will also be greatly reduced. Too big or too small knowledge potential difference will hinder the knowledge absorption of the audited enterprise. Only the right thing to ensure that the audited enterprise is sufficiently motivated to obtain the heterogeneous knowledge resources from the certification body. Internal demand creates a transfer motivation that leads to behavioral outcomes, this is the mechanism for the knowledge transfer of certification bodies and auditors. The ability of certification body mainly includes knowledge coding

ability, knowledge estimation ability and knowledge transfer ability, etc. They are all limiting factors for knowledge transfer. (2) Trust relationship. The certification body and the audited enterprise may be regarded as the owner and receiver of knowledge respectively in this model. The more influence of the former on the knowledge transfer, integration and innovation than the latter, the more likely the certification authority is to be favored by the audited enterprises. The relationship between them is more stable. (3) psychological states. When the certification authority is unable to obtain the trust of the audited enterprise, the audited enterprise will doubt the knowledge reliability of the certification body. The receiver lacks the will to receive knowledge. It impedes the absorption of knowledge. When the auditor's mental state is not good, it can affect the coding ability. When the psychological state of the enterprise is reviewed, the decoding ability will be affected. (4) Organizational distance. The cultural differences between the accrediting body and the audited enterprise, the differences between the employees in the code of conduct or the pursuit of value, which constitute the organizational distance between the certification body and the audited enterprise. The knowledge transfer effect between the two will be affected.

#### 4. Conclusion

Based on knowledge management, this paper discusses the factors that the certification body has to influence the effectiveness of enterprise environmental certification. The elements include certification bodies, audited enterprises, media, influence channels and impact scenarios, and established network models. The downside is that numerical simulations are not supported by historical data. And then we can collect historical data, in addition, the influence of parameter changes on the whole system or some data can be analyzed.

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