

Analysis of the Development Process of China and the Characteristics of the New Round of International Foreign Standardization Strategy and Countermeasures

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ABSTRACT

This paper reviews the development of China's international standardization, analyzes the characteristics of the new round of international standardization strategy, and proposes corresponding countermeasures and suggestions. Through a historical review and current analysis of China's standardization work, it explores the impact of technological revolution and industrial transformation on international standardization, and proposes specific measures for China to enhance its status and competitiveness in the field of international standardization. The paper argues that strengthening top-level design, increasing investment, enhancing international cooperation, promoting the internationalization of standards, and cultivating standardization talents are the keys for China to gain an advantage in the new round of international standardization competition.

KEYWORDS

International standardization; Development history; Strategic characteristics; Countermeasures and suggestions

1 Introduction

International standardization plays a vital role in the process of global economic integration. As the carrier of technical rules and commercial practices, standards not only influence technical exchanges and trade between countries but also serve as a significant manifestation of national competitiveness. As the world's second-largest economy, China's participation and influence in the field of international standardization continue to grow. This paper aims to review the development history of China's international standardization, analyze the new characteristics of current international standardization, and propose corresponding countermeasures and suggestions, in order to provide references for China's further development in the field of international standardization.

2 The development of China's international standardization

2.1 Initial stage: from the establishment of new China to before the reform and opening up

At the beginning of the establishment of China, due to its weak economic foundation and low level of industrial technology, China mainly learned from and drew on the standardization systems of the Soviet Union and Eastern European countries. In 1950, the establishment of the State Bureau of Technical Supervision marked the official start of China's standardization work. During this period, China's international standardization efforts were primarily focused on introducing and adopting advanced foreign standards, with a relatively low level of standardization and extremely limited participation.

After the reform and opening-up in 1978, China gradually recognized the importance of standardization in economic construction and opening-up. In 1984, China officially joined the International Organization for Standardization (ISO), marking its initial exploration in the field of international standardization. During this period, China's standardization work gradually aligned with international standards, but its voice in the ISO remained limited, mainly participating in the formulation and revision of international standards and actively introducing advanced international standards.

2.2 Accelerated development phase (2000-2010)

In the 21st century, with the rapid development of China's economy and the deepening of its opening-up, China has increased its investment in international standardization work. In 2001, China joined the World Trade Organization (WTO), which posed new requirements for China's standardization work. Against this backdrop, China's standardization strategy gradually aligned with international standards, and standardization work entered a phase of accelerated development. In 2008, the successful hosting of the Beijing Olympics further enhanced China's reputation and influence in the field of international standardization.

2.3 Comprehensive improvement stage (2010-present)

In recent years, China's status and influence in the field of international standardization have significantly increased. At the national level, great importance is attached to standardization work. The "China Manufacturing 2025" strategy released in 2015 explicitly proposed to accelerate standardization efforts and enhance China's voice in international standardization organizations. China actively participates in the work of international standardization organizations such as ISO and the International Electrotechnical Commission (IEC). An increasing number of Chinese experts are taking on leadership roles in international standardization organizations, promoting Chinese solutions to become international standards.

3 Analysis of the characteristics of the new round of international standardization strategy

3.1 Accelerating scientific and technological revolution and industrial transformation

Currently, the global technological revolution and industrial transformation are accelerating, with standardization efforts in fields such as next-generation information technology, artificial intelligence, biotechnology, and new energy becoming a key focus of international standardization. The rapid development of technology has led to the continuous emergence of new technologies and products, placing higher demands on standardization work. China possesses strong scientific research capabilities and industrial foundations in these fields and should seize the opportunity to actively participate in the formulation of international standards in related areas, thereby enhancing China's voice in setting standards for emerging technologies.

3.2 More intense competition for international standards

With the deepening of global economic integration, competition among countries in the field of international standardization has become increasingly fierce. Standardization has become an important manifestation of national competitiveness, especially in high-tech fields, where the right to set international standards often determines market dominance. Developed countries hold a dominant position in international standardization organizations, using standards to set technical barriers and restrict market access for other countries. China needs to enhance its strategic awareness of standardization, strengthen international cooperation and competition, and improve the international influence of its standards.

3.3 Standardization and trade barriers are closely related

International standardization is closely related to trade barriers. Some countries set technical trade barriers through standards to restrict foreign goods and technologies from entering their markets. Technical trade barriers have become an important form of non-tariff barriers in international trade. China needs to actively participate in the formulation of international standards, promote the internationalization of Chinese standards, reduce technical trade barriers in international trade, and ensure the international market access of Chinese enterprises.

3.4 Standardization challenges in the digital economy era

In the era of the digital economy, the standardization of data and information has become increasingly prominent. Global data interconnectivity, information security, and privacy protection pose new challenges to international standardization. As an important production factor, the standardization level of data directly affects the development of the global digital economy. China has certain advantages in the field of the digital economy and should actively participate in the formulation of international data and information standards, promoting the formation of a fair, just, and transparent international standard system.

3.5 The rise of emerging markets

The rise of emerging market countries has had a profound impact on the international standardization landscape. With rapid economic development, these countries have been increasingly involved and influential in the field of international standardization. They possess strong competitiveness in certain emerging technological fields, driving the diversified development of international standardization. As a representative of emerging market countries, China should strengthen cooperation with other emerging market countries to jointly enhance its voice and influence in the International Organization for Standardization.

4 Policy recommendations

4.1 Strengthen top-level design and enhance the strategic level of standardization

At the national level, top-level design should be strengthened, and a clear international standardization strategy should be formulated to coordinate the standardization work of various departments and industries. A national standardization coordination mechanism should be established to coordinate the efforts of all parties and jointly advance international standardization work. Active participation in the governance structure of international standardization organizations should be encouraged to enhance China's voice and influence in these organizations. Standardization work should be integrated with national strategies for scientific and technological innovation and industrial development, fostering a virtuous interaction between standardization and scientific and technological innovation as well as industrial development.

4.2 Increase investment to enhance standardization research and innovation capacity

Increase investment in standardization research and innovation, supporting universities, research institutions, and enterprises in conducting standardization studies. Encourage enterprises to participate in the formulation and revision of international standards, and support their appointment to key positions in international standardization organizations. Establish incentive mechanisms for standardization research and innovation, promoting the conversion of innovative achievements into international standards. Strengthen foundational standardization research to enhance scientific rigor, driving the transformation of standardization work from "following" to "leading" in global standards.

4.3 Strengthening international cooperation and promoting mutual recognition of standards

Strengthen cooperation with major trading partners and the International Organization for Standardization to promote mutual recognition and coordination of standards. Actively participate in regional standardization cooperation, promote mutual recognition of standards among countries along the Belt and Road, and facilitate regional economic cooperation and trade. Establish multi-level and multi-field standardization cooperation mechanisms with developed countries, emerging economies, and developing countries to jointly advance international standardization work. Enhance standardization cooperation with developing countries, support developing countries in improving their standardization capabilities, and jointly promote the formulation of international standards.

4.4 Promote the internationalization of standards and enhance the influence of China standards

Actively promote the internationalization of China standards and enhance the global influence of China standards. Support enterprises in promoting China standards in overseas markets, and strive to make China standards the prevailing standards in international markets. Encourage enterprises to propose China solutions in international standardization organizations, and promote China solutions to become international standards. Strengthen the publicity and promotion of China standards, and enhance the international community's awareness and acceptance of China standards.

4.5 Strengthen the training of standardization talents and enhance the international standardization capacity

Strengthen the cultivation of standardization professionals and establish a comprehensive talent development system. Support universities in offering standardization-related courses to nurture specialized, globally competent professionals. Develop a national expert database to cultivate more international standardization specialists, thereby enhancing China's representation and influence in international standardization organizations. Encourage standardization professionals to participate in international standardization initiatives, thereby broadening their global perspectives and professional capabilities.

4.6 Give play to the main role of enterprises in standardization

As the primary drivers of standardization efforts, enterprises must be empowered to play a pivotal role in this process. We should encourage businesses to actively participate in developing and revising international standards, while supporting their leadership in ISO (International Organization for Standardization) and other global standardization bodies. Companies should be motivated to prioritize standardization during R&D processes, transforming innovative achievements into internationally recognized standards. Furthermore, establishing incentive mechanisms for corporate standardization initiatives will reward and recognize organizations that demonstrate exceptional performance in global

standardization activities.

4.7 Strengthening standardized infrastructure

Standardization infrastructure serves as the cornerstone of standardization efforts, with well-developed infrastructure playing a vital role in elevating the quality of standardization work. Strengthening the construction of national standardization laboratories and research institutes will enhance research and experimental capabilities. Building robust standardization information platforms will improve service delivery. Furthermore, advancing the certification and testing systems will boost their operational effectiveness.

4.8 Strengthening standardization of laws and regulations

Standardization laws and regulations serve as the cornerstone of standardization efforts. A robust legal framework plays a vital regulatory role in standardization work. To strengthen the development of standardization legislation, we must improve the legal system to ensure compliance with established legal provisions. Enhancing law enforcement will guarantee effective implementation of standardization regulations. Furthermore, promoting awareness and public education about standardization laws will elevate societal recognition and commitment to this critical field.

5 Conclusion

China has achieved remarkable progress in the field of international standardization. However, in the face of the challenges posed by the new round of technological revolution and industrial transformation, it is still necessary to further strengthen the top-level design of international standardization strategy, increase investment, enhance standardization research and innovation capabilities, strengthen international cooperation, promote the internationalization of standards, and enhance the international influence of China's standards. Through systematic policy measures and strategic planning, China is expected to achieve greater breakthroughs in the field of international standardization and make greater contributions to global economic integration and technological progress.

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