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# Motivation and strategy: MNCs' embeddedness in China's standardization based innovation



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## ABSTRACT

This paper aims to understand why MNCs choose different embedding strategies in standardization based innovation, and how MNCs' competitive landscapes evolve alongside the transition of indigenous innovation in China. Using the multiple case study approach based on the interviews and archival data about China's mobile standards, we find that MNCs may choose to proactively or reactively embed in China's business and institutional systems by aligning their interests with the standard-based indigenous innovation strategy. Although there are high risks in China's standardization, MNCs cannot ignore the huge benefits of China's mobile market, and may join in this standardization process when they are ensured the government support would sustain.

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## 1. Introduction

Traditionally, the Western standards are considered to be equal to “international” standards as most international standards are enacted by Western MNCs and international standardization agencies. In recent years, the global standardization landscape begins to change and some Asian countries like China and Korea have been able to develop their own standards (Lee & Oh, 2008). These emerging Asian countries seek to move from being just a standard-adopter to a co-shaper, and in some areas a lead shaper of international standards (Ernst, 2011). On the one hand, the rising position of Asian countries in the global standardization landscape attracts MNCs to engage and safeguard their competitive advantages in those markets. On the other hand, Asian countries' standardization needs strong support from leading MNCs so as to expand the international adoption of their technologies. In the case of China's homegrown standards, the domestic huge markets and dedicated government supports in ICT industries may drive some MNCs to participate in the standardization efforts. These MNCs have to choose an embedding strategy in China's business and institutional system and align their interests with the market and institutional environment there.

There are some researches on China's standardization from the perspective of hosting country (e.g. Gao & Liu, 2012; Stewart, Shen, Wang, & Graham, 2011; Soh & Yu, 2010). However, studies on the relationship between the hosting country's standardization based innovation and MNCs' strategic responses are still missing. This paper bridges this gap by examining MNCs' embeddedness strategies in hosting country's standardization. The methodology of in-depth case studies is adopted at the industrial level, which is different from Hou (2011) that conceptually examines the role of MNCs in national

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standardization level. Hou (2011) also does not conduct a systematic empirical analysis based on a theoretical framework. We seek to fill in this gap and answer the following two questions: why do MNCs choose different embedding strategies in standardization based innovation of China's ICT sector? How do MNCs' competitive landscapes evolve alongside the transition of indigenous innovation process in China? We aim to examine the motivations and strategies of MNCs' embedding activity and explore the evolution of MNCs' competitive positions alongside the innovation transition process in the emerging contexts like China.

According to Kloosterman (1998), "embeddedness" is the linkage to the economy through interplaying with its social, economic and institutional contexts. From the resource-based view, MNCs' different embeddedness falls into the domain of environmental responsiveness strategies in which two different types of embeddedness are identified as proactive and reactive embedding (Sharma & Vredenburg, 1998). Here, the embedding strategies can be considered as the strategic actions MNCs take to response to the host country's standardization based innovation. Through these strategic actions, MNCs may acquire the desired strategic resources from the related local business and institution network.

The paper is organized as follows. In Section 2, the literature reviews on the relationship between standard and innovation, China's ICT standardization and MNCs' embeddedness in developing countries are presented. Section 3 describes the research methodology and conceptual framework. In Section 4, the backgrounds of institutional and market environment in China's telecommunications standardization are presented. In Section 5, two firm case studies of Siemens and Ericsson are conducted to refine the analytical framework. Section 6 analyzes the embedding strategies of MNCs and their interactions with domestic companies. Section 7 draws conclusions.

## 2. Literature review

### 2.1. Standardization and innovation

Standardization plays a critical role in innovation (Allen & Sriram, 2000). The reasons for standardization's importance in innovation could be analyzed from its characteristics of enabling innovation both within one technology generation and across different technology generations. Within one technology generation, standards become important in terms of specifying the overall system framework and the interface specifications to interconnect sub-systems (Kano, 2000). The open standardization process and standards enable competition between and within technologies and contribute therefore to innovation-led growth (Blind, 2013). In different technology generations, standardization mitigate the difficulty of innovation by enabling interoperability between new and existing technologies, products, services, and processes (Choi, Lee, & Sung, 2011). The importance of standardization in innovation is also related to the innovation process. For example, Blind (2009) finds standardization process reduces the time to market of inventions, research results and technologies. In the market side, standardization promotes the diffusion of innovative products. In different innovation stages, standardization helps mobilize the resources that are necessary for successful innovation by aligning the interests of different actors and coordinating actions among them (Yoo, Lyytinen, & Yang, 2005).

Industrial standards could be considered as the driving forces of corporate innovation and internationalization (Maurer & Drescher, 1996), a critical enabler of knowledge sharing (Ernst, 2005), and a key element of globalization (Grewal, 2008). The standard increasingly enables the interactions of diverse stakeholders through geographically dispersed innovation networks that extend the boundaries of industries and nations (Antonelli, 2011; Lester & Piore, 2004). For example, Katsikeas, Samiee, and Theodosiou (2006) find that standards enable the fitness between marketing strategy and environmental context.

### 2.2. China's ICT standardization

The studies on China's ICT standardization initiative started from the mid-2000s when China's ICT standardization efforts attracted broader attention. This new research direction can be generally divided into three strands. First, some literature focuses on the effectiveness and benefits of standardization. It is found that, despite the high risks inherent in indigenous architectural innovation of TD-SCDMA (Time Division-Synchronous Code Division Multiple Access), China can get future benefits from such efforts (Vialle, Song, & Zhang, 2012; Whalley, Zhou, & An, 2009). Second, the role of institutional intervention in China's ICT standardization raises attention. Gao (2009) and Kshetri, Palvia, and Dai (2011) identify the importance of formal and informal decision making systems in shaping Chinese 3G landscape. These decision making systems become critical considering the dominance of state-owned enterprises and strong government force in China's ICT standardization process (Xia, 2012). Third, some scholars explore the key factors affecting China's catching-up in indigenous standardization. For example, Gao and Liu (2012) address the co-evolution process between firm strategy and government policy. Xia (2011) identifies the importance of technology-push and demand-pull. Steen (2011) highlights both domestic technology development and foreign technology import within China's ICT standardization. Kwak, Lee, and Chung (2012) find China is increasingly open to foreign firms to gain their support and cooperation, which is required for international standardization and commercialization of locally-developed standards.

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