

The Business Effects of Standardization for SMEs

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ABSTRACT

Standardization activity is a type of open innovation, specifically an outbound-revealing open innovation. Through standardization activities, a given technology spreads, its effects extend to the market, and the market expands. However, in many cases, competition intensifies, and price competition occurs. To succeed as global businesses, SMEs should take a strategy known as “Niche Top” in Japan. Standardization activities are more likely to constitute a risk for SMEs. However, the Japanese government has established a system that actively encourages SMEs to standardize. The authors of this manuscript conducted interviews with companies that are targets of this standardization system and investigated how these companies expand their businesses through standardization activities while still securing profits. The results show that standardization by SMEs does not cause the dissemination of technology and the expansion of markets; rather, it helps such SMEs erect barriers to market entry through the creation of standards and plays a large role in securing shares in niche markets.

KEYWORDS

Global Niche Top Strategy, Innovation, JIS, JISC, METI, Monopolization, National Standard, Open Innovation, Outbound, Small and Medium Sized Enterprise

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INTRODUCTION

The government of Japan actively supports standardization activities as part of its activities to encourage open innovation and expand the market for new products. Although the term open innovation was coined in the United States, it is widely used among Japanese companies and treated like a magical concept that will reform their innovation systems. The term open and closed strategy is also commonly employed in Japan. Both terms encompass common and long-running activities for many Japanese companies; thus, they are not a new type of strategy. Japanese companies have thus far not clarified the meaning of these terms; however, these concepts are actively used in corporate activities as they involve simplified technology management methods previously based on expertise.

The Japanese government assumes that standardization helps expand markets for new products; therefore, it has established a system to encourage small and medium-sized enterprises (SMEs) to proactively standardize. For SMEs, does open innovation always lead to profit? Are there any technical areas in SMEs that can be standardized and used by other companies? Is open innovation, in fact, a trap for SMEs? To answer these questions, the author and the collaborator (the authors) interviewed the system's users and compiled the results.

LITERATURE REVIEW

It is easy to organize standardization activities as part of an innovation program that involves standardization to promote the dissemination of a technology. There is no doubt that standardization promotes the dissemination of technology. However, it is equally clear that there is network externality in standardized technologies, and as market monopolization progresses, it hinders the rise of technologies that are incompatible with the standard. Moreover, since a market monopoly will increase the switching costs from the old to the new technology, a long-term market oligopoly is likely to emerge, which may hinder the development and diffusion of new technologies.

Thus, standardization activities can both promote and inhibit innovation, and their effects significantly differ depending on the standardization method, field of application, technique, and so on.

"The Economics of Standardization" by G. M. Peter Swann (2000), a research report prepared at the request of the UK Department of Trade and Industry (DTI), stated that in order for standardization to narrow down the number of research and development (R&D) items, R&D has to effectively progress. Furthermore, a report jointly issued by DTI and the British Standards Institution (BSI) in 2005 stated that "standardization narrows the R&D area, and promotes innovation in order to have the effect of concentrating R&D funds on necessary areas" (DTI, 2005).

Following these publications, many studies were conducted on the relationship between standardization and innovation, including Andersen (2014) and De Vries (2019), who also classified that relationship. Blind et al. (2017) analyzed the

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