

## Chapter 4

# Diffusion vs. Knowledge Protection When Participating in ICT Standardization

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### **ABSTRACT**

*Innovative companies need to make decisions related to protection and sharing of their new knowledge. This chapter explores knowledge patterns during formal ICT standardization and/or in standards consortia. While previous studies focused on the role of intellectual property rights in standardization decisions, this investigation considers standards and patents as sources of information for innovation. Results show that when patents are important, firms are more likely to be engaged in consortia but not in formal standardization. Size moderates this relationship. Smaller firms are more motivated by the quest for knowledge during standardization while larger firms are more sensitive to the importance of patents. The authors conclude that small firms might participate in ICT standardization in order to anticipate development of the standard, rather than place a patent in the standards.*

### **INTRODUCTION**

Distinguishing between general knowledge and economically useful knowledge, the creation of economically useful knowledge and its effective conversion into economic activity are essential for economic growth (Carlsson et al. 2009). There are many mechanisms through which economically useful knowledge can lead to economic growth; among them are standardization and patenting. Strategies for managing organizational knowledge in modern companies can have many alternatives which are not mutually exclusive – like safeguarding knowledge through IPR mechanisms and sharing knowledge in standardization processes.

DOI: 10.4018/978-1-5225-5320-5.ch004

Standards are often seen as important and valuable source of knowledge - they preventing “reinventing the wheel” and as base for market access and acceptance of innovations and new technologies (De Vries, 2006). Patents are types of intellectual properties, with main aim to protect invention. A patent is a grant from a government “that permits its owner to prevent others from making using, importing and selling an invention” (Bouchoux, 2009, pp 6.). While both standards and patents aim to promote innovation and market place adoption, there is little else that they have in common (Blind et al., 2011). A company that has invented something can choose between patents and standardization or their combination, depending on which option results in the greatest market success - standards and patents both contain mostly technical solutions - patents are one source of information and standards are another (De Vries, 2006).

*The growth of standard has coincided with the increase of intellectual property protection and it is now common place that patents find their way into standardization. They have become a necessary ingredient to implementation and formulation alike. Some incorporated patents are more influential and core to specific standards than others and those that are “core” or “necessary” to effectively implement a standard are called “standard essential patent. (Pierce and Medzmarishvili, 2015, pp.306)*

IPR are an increasingly important part of the technology evaluation process at many standards setting organizations (SSO) and many companies would like to own IPR that are embedded in an industry standard (Rysman and Simcoe, 2008).

According to Blind and Thumm, in area of technological development, the contradiction of intellectual property rights (IPR) and formal standard is based on two aspects: IPR provide knowledge-producers with the temporary right of exclusive exploitation of the benefits deriving from the new knowledge and standards are decisive for the diffusion of new technologies - they make information about new technologies available to everyone (Blind and Thumm, 2004). How standards organizations respond to those who assert IPR is critically important because retaining of IPR in group standards will determine whether a standard is open or closed; who can sell compliant products; it may well influence whether the standard adopted in the market is one chosen by a group or one offered by a single company, on the other side SSO rules governing IP rights will also affect how standards change as technology improves (Lemley, 2002). Competing companies join SSOs and work together to select particular technologies as industry standards and this process promotes price competition among firms, creates demand-side economies of scale, and encourages product innovation by reducing the risks of future research and development efforts (Curran, 2003).

In this research, we are interested about how IPR issues influence company decision to be engaged in standardization. Adopting the “forum shopping model” approach, this research investigates whether IPR concerns have a different influence on the probability of a firm to engage in ICT formal standardization or in consortia. The model considers as well whether firms, who perceive standards as a source of information for their innovation, are more likely to be engaged in standardization activities. Additionally, we investigate the potential moderating role of size of the company.

This paper proceeds as follows. Section II reviews results of previous studies. In Section III we define our research questions. Section IV briefly present the data available for present study, subsequently, in section V we illustrate our methodology, and in section VI we discuss our findings. Finally, section VII summarizes our work and provides some suggestions for future research.

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