

Chapter XV

Intellectual Property Protection and Standardization

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ABSTRACT

This chapter presents the first attempt at analyzing the relationship between strategies to protect intellectual property rights and their impact on the likelihood of joining formal standardization processes, based on a small sample of European companies. On the one hand, theory suggests that the stronger the protection of one's own technological know-how, the higher the likelihood to join formal standardization processes in order to leverage the value of the technological portfolio. On the other hand, companies at the leading edge are often in such a strong position that they do not need the support of standards to market their products successfully. The results of the statistical analysis show that the higher the patent intensities of companies, the lower their tendency to join standardization processes, supporting the latter theoretical hypothesis.

INTRODUCTION

Over the last decade both the number of patent applications submitted to national and international patent offices and the number of standards claimed at standardization bodies have risen tremendously. In patenting, a 'pro-patent era' began in the mid-1980s. At the European level, it accompanied

the establishment of a coherent legal European framework, introducing new national and European legislation for different technological fields. Standardization processes, measured by their output (i.e., the number of formal standards) also increased, especially in Europe (Blind, 2002a). One indication of this trend was the creation of new standardization bodies such as the ETSI, the

European Telecommunication Standards Institute. Both phenomena have already been the subject of scientific analysis.¹

The ambivalence of intellectual property rights and *de facto* industry standards, or *de jure* standards for technological development, is triggered by two different economic mechanisms. Intellectual property rights (IPRs) provide knowledge producers with the temporary right of exclusive exploitation of the benefits deriving from the new knowledge. In this way, IPR provides knowledge producers with the publicly desirable incentive to invest in R&D. They provide holders with a temporary monopoly position, but IPR limits the free diffusion of technological knowledge. Potential users can either not get access to required knowledge or have to pay for it (licensing). Some IPRs, like patents, include at least a positive element of diffusion by the publication of the protected specifications.

In contrast to intellectual property rights, standards released by standards development organizations are decisive for the diffusion of new technologies. They make information about new technologies available to everyone for a small fee and come near to being a classical public good. Innovation researchers until now have concentrated primarily on the analysis of mechanisms that foster the generation of new technological knowledge. However, only the broad diffusion of technology triggered by standards and technical rules can foster economic growth.

Intellectual property rights and standardisation are important social institutions that play active roles in technical innovation. They share certain similarities as institutions: for example, both patenting and standardisation essentially serve to codify technical information into non-dubious, replicable language. At the same time, their roles are essentially different. A patent describes the parameters of a technology (product or process) over which the patentee owns limited rights, while standard specifications are elaborated by

diverse interest groups in order to provide common ground for the future development of new technologies. This common ground consists of not only standards to reduce the variety of possible technological trajectories to a minimum, but also of compatibility standards that allow the exploitation of network externalities and of quality standards for increasing consumer acceptance.²

The traditional point of conflict between IPR and standardisation occurs when the implementation of a standard, by its essence, necessitates the application of proprietary technology. Both processes bring together two (p. 11) seemingly contradictory processes: the creation of variety and its successive reduction through selection. Effective long-term adaptation requires that these two processes be kept in balance (p. 11) (Carlsson & Stankiewicz, 1994).

Since involvement in standardisation processes is accompanied by the danger that the other participants could use the disclosed and unprotected technological knowledge for their own purposes, R&D-intensive companies whose knowledge is either insufficiently protected by IPR or extremely valuable may be reluctant to join standardisation processes. Although a variety of protection instruments exists, it is difficult to measure their effectiveness. One formal means of legal protection is patenting. Since applying for a patent entails significant costs (such as fees and costs for legal advice), the expected economic value must be higher than the actual expenses. Thus, a patent application will be made only if the value of the technological know-how reaches a certain level. In addition, the know-how to be protected must also be of value to competitors and not only the company itself. In other words, the number of patent applications indicates not only the intensity with which knowledge protection instruments are used, but also the dimensions of the expected economic value of the company's technological knowledge base. Since IPR tends to concentrate in the areas of greater technical

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