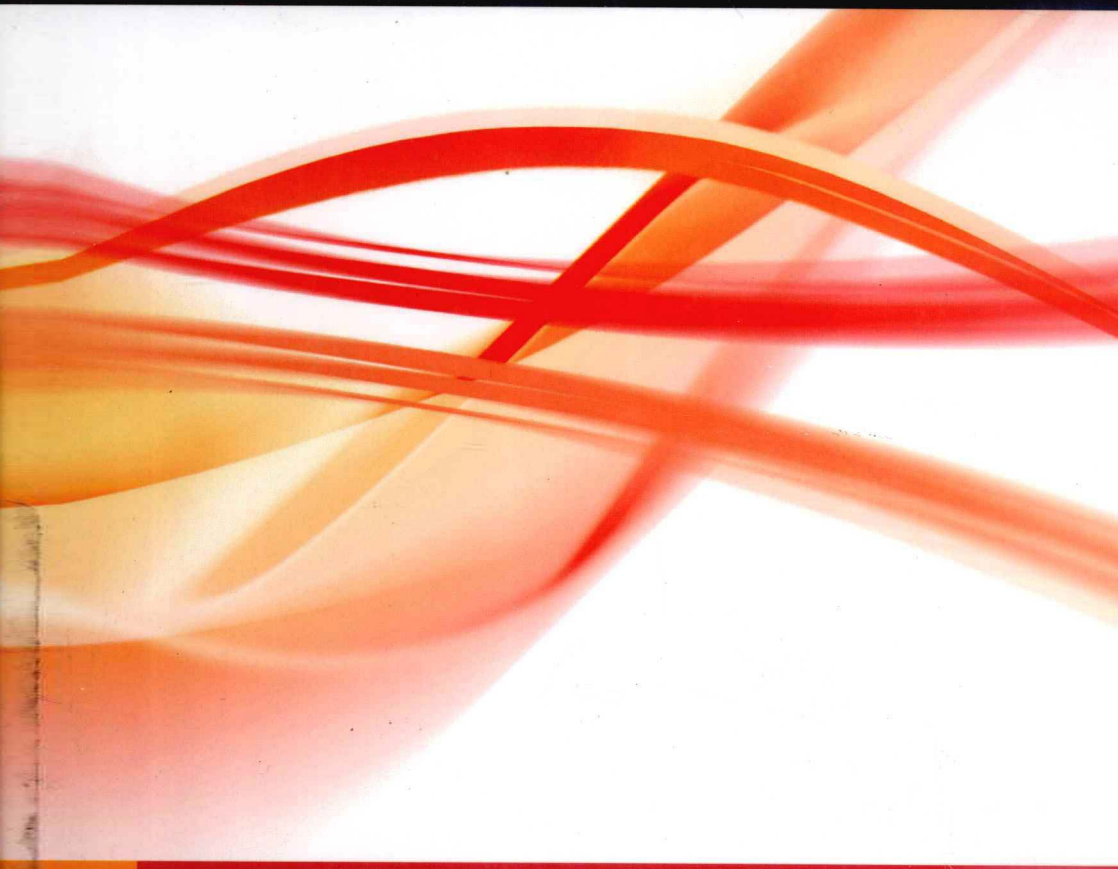
# Patents and Industry Standards



Jae Hun Park

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# Acknowledgement

The views portrayed in this book are those of the author and do not reflect the beliefs of the Korean Government that Jae Hun Park currently works for.

# Foreword

Patent law is subject to a lot of scrutiny, but most of it concentrates on its internal workings and thresholds. Questions focus on the level of inventive step and the scope of patentable subject matter, to name just these. From an external point of view there is the issue of competition law and of course there is the development agenda. But that is often where matters stop.

The issue of standardisation and the international system of industry standards is left completely out of the equation. Standards are often simply considered to be a technical issue for standardisation bodies as part of the administrative regime that is not considered to be part of intellectual property law. In fact there is very little proper legal analysis of the whole system of standardisation.

But one should not forget that the newest and most valuable standards and the items that are taken into account as candidates for standardisation are often protected by one or more patents. Whether one likes it or not, the two areas do touch each other. For the purposes of standardisation a standard pre-supposes access to technology for all the actors of a certain industry. As an exclusive right a patent makes that access conditional on the consent of the right holder, who has the right to refuse certain licences for certain potential licensees and who can set the terms of the licence. Exclusivity and standards simply do not go together very well.

A decision by a standardisation body cannot invalidate or overrule the patent though. There is no mechanism in patent law to require the right holder to renounce the patent and the exclusive right that goes with it. Somehow a modus vivendi will have to be worked out.

Very real issues arise therefore and very little attention has been paid to them in terms of legal scholarship and analysis. Dr Jae Park is to be congratulated for turning our attention to this difficult and underexplored area. His work focuses on standards and patents but goes well beyond an initial analysis. He examines the finer points of both sets of rules in order to find out exactly where the problem lies and he then looks at the existing mechanisms that could provide a solution. Many of these have their roots in the area of competition law, but his thorough analysis shows that competition law in its current form and with its current limitations is not the perfect tool to address the problems that arise when patented technology becomes the object of standardisation. This leads Dr Park to develop his own

solution for the problem at hand: a solution which he finds in the dynamic liability rules regime.

This book really breaks new ground and provides a first and thorough analysis of this rarely addressed but increasingly important area.

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# 1. Introduction

## 1. BACKGROUND

This book aims to resolve the issues arising from the clash between two conflicting interests. More precisely, this book seeks to reconcile the conflict between compatibility standards and patents and to find the right balance between them.

In network markets,[1] consumers purchase not a single product but a system which is composed of several compatible products.[2] For instance, when buying a computer, a consumer buys not a single product computer but a computer system consisting of hardware, such as a main board, a keyboard, a mouse, a monitor and speakers, and software, such as operating systems and application software. It is easily verified that the various components of a computer system are often produced by different producers. Since all of the elements of a computer system, which are produced by distinct firms, have to be combined to compose a computer system, they have to be compatible. Thus, compatibility between products is essential in these markets, and this need for compatibility inevitably leads the markets to implement technical standards.

Standards[3] often include technologies that are covered by patents because standards are likely to be based on advanced technologies rather than obvious ones and because patents are granted to novel and inventive technologies.[4]

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[1] 'Network markets' has a broad meaning, including information technology markets, communication markets, railway system markets and credit card markets. However, network markets in this book are the markets of information and communication technology (ICT), where ICT is a 'term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning', as is defined in *SearchSMB.com* TechTarget (cited 5 April 2007); available from http://searchsmb.techtarget.com/sDefinition/0,290660,sid44_gci928405,00.html.

[2] Oz Shy, *The Economics of Network Industries* (Cambridge University Press, 2001) 1–5.

[3] As is described in Chapter 2, there are several kinds of standards. It has to be noted that the main concern here is the compatibility standards.

[4] Janice M. Mueller, 'Patenting Industry Standards', *John Marshall Law Review* 34 (2001).

Indeed, where a standard does not incorporate advanced technologies, the standard is not easily accepted in the market. Where some parts of standards are protected by patents, conflict between patents and standards arises because the standards have a public characteristic whereas patents are in the private sector. That is, standards need to be widely used just like public goods, whereas patented technologies are private property, normally created by private parties' inventive efforts. Thus, the need for widespread use of standards clashes with the exclusivity of private property.

A patent is a state-created right whose owner is entitled to exclude others from using the inventions covered by the patent.[5] Thus, patent owners may lawfully exercise their exclusive rights to prevent others from using the patented technologies. On the other hand, standards need to be open to those who want to provide products compatible with other products in the market. Without access to the technical standards, a company cannot enter the market because it cannot make its products compatible with other products and because consumers in the market are reluctant to buy products that are incompatible with other products. Where the holders of the patents, the subject matters of which are the technologies incorporated into compatibility standards, utilise the patent rights to exclude competitors, the competition and the innovation in the market are likely to be seriously distorted.

While patents, which give exclusive rights to inventors, are essential to promote technological innovations, standards, the precondition of which is open access, are also important for technical development because they provide interoperability and network benefits. Likewise, the issues on patent rights arise from the need for compatibility in standard-based industries[6] and it is these issues that this book seeks to resolve.

## 2. RESEARCH QUESTIONS

It is clear from the previous discussion that the main research problem is how to strike the right balance between the rights of patent owners and the need for industry standards. In order to find the solution to this question, however, some more questions have to be answered before and/or after the first question is answered. First of all, a standard has to be defined and its characteristics need to be studied. Standards are classified in various ways and thus the standards at issue have to be distinguished. In addition, why and how patent rights

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[5] Lionel Bently and Brad Sherman, *Intellectual Property Law*, 2nd edn (Oxford: Oxford University Press, 2004).

[6] Eric James Iversen, Esten Oversjoen and Haakon Thue Lie, 'Standardization, Innovation and IPR', *Telektronikk* 2 (2004).

conflict with standards in some industries have to be examined. As becomes clear later in this book, the conflict arises in some industries but not in other industries and thus the mechanism and causes of the conflict have to be studied. Moreover, how the current legal systems resolve the conflict has also to be investigated. It is clear that current legal systems have their own solutions to the problems and thus, in order to find better solutions, the current solutions have to be evaluated. To sum up, the research questions are as follows:

- What are the definition and the characteristics of industry standards?
- Why and how do patent rights conflict with industry standards?
- What solutions are provided by current legal systems and what can be improved?
- How are the rights of patent owners and the need for industry standards to be balanced?
- What legal measures are necessary to strike the right balance between patent rights and industry standards?

## 3. METHODOLOGICAL APPROACH AND SOURCE MATERIALS

The main methodological approach of this book is the law and economics approach.[7] The reason why this book takes this approach is clear. It is generally accepted that patent systems are justified for economic reasons,[8] and thus whether patent systems work properly and whether they can be improved needs to be evaluated from an economic perspective. Since patent systems seek to promote innovation, where current patent systems can be changed to promote dynamic efficiency they have to be reformed. This is what this book is about. To evaluate current patent systems, a cost and benefit analysis is used here. As is described in Chapters 6 and 7, this book seeks to find a patent reform which reduces the costs of patent systems in relation to standards but does not decrease the benefits of patent systems. The detailed approach and structure are as follows.

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[7] For the law and economics approach, see Richard A. Posner, *Economic Analysis of Law*, 7th edn (Wolters Kluwer, 2007).

[8] Alan S. Gutterman, *Innovation and Competition Policy: A Comparative Study of the Regulation of Patent Licensing and Collaborative Research and Development in the United States and the European Community* (Kluwer Law International, 1997) 129–30, Paul L.C. Torremans, *Holyoak and Torremans: Intellectual Property Law*, 4th edn (Oxford: Oxford University Press, 2005) 11–25.

Above all, standards have to be studied. Standards have to be defined and the features and classification of standards need to be examined. Standards may be implemented by market mechanisms or by standard setting organisations (SSOs). The standard created by market process is called an informal standard and that promulgated by an SSO is called a formal standard. The process and legal features of formal standards are different from those of informal standards and thus formal standards and informal standards are studied separately. Standards are closely related to market competition and innovation and thus the economic effects of standards and how standards affect technical innovation need to be studied. All of this is done in Chapter 2.

Chapters 3 and 4 examine how the current legal systems of the United States and Europe can be applied to resolve the conflict between standards and patents. As is clear from those chapters, antitrust law in the US and competition law in Europe may be used to resolve the patent issues in standards. Thus, the relevant legal doctrines of competition law and antitrust law are examined with respect to the patent issues in standards to ascertain to what extent they resolve the conflict. In applying the legal principles of competition law and antitrust law, formal standards are studied separately from informal standards since legal issues of formal standards are different from those of informal standards.

In Chapter 5, two patent law principles are examined to see whether they can resolve the issues. The reverse doctrine of equivalents and compulsory licences are used to restrict the exclusive right of patent holders and these principles may be applied to the issues of this research. The reverse doctrine of equivalents is used to limit the enforcement of patent rights in those cases where an alleged product is far different from the patented product, even though the product literally infringes the patent at issue.[9] A compulsory licence is 'an involuntary contract between a willing buyer and an unwilling seller imposed and enforced by the state',[10] which clearly restricts the exercise of exclusive rights granted by patent law. In Chapter 5, the two patent law doctrines, the way in which they are used in relation to standards and the limitations of them are examined.

In Chapters 6 and 7, a cost and benefit analysis of patent systems in relation to standards is conducted. The approach of these two chapters is to find a

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[9] William S. Galliani, 'Patent Infringement Amidst Rapidly Evolving Technologies: New Equivalents, the Doctrine of Equivalents and the Reverse Doctrine of Equivalents', *Santa Clara Computer and High Technology Law Journal* 6 (1990): 86.

[10] Gianna Julian-Arnold, 'International Compulsory Licensing: The Rationales and the Reality', *IDEA: The Journal of Law and Technology* 33 (1993): 349.

solution which reduces the costs of patent systems in relation to standards but does not decrease the benefits of patent systems. To do so, the cost structure of patent systems with respect to standards is analysed and a way in which the costs can be reduced is suggested in Chapter 6. In Chapter 7, patent reforms proposed by others are studied and evaluated with respect to the costs and benefits of patent systems in relation to standards. Then, based on the strengths and weaknesses of other patent reforms, the suggestions of this research are described. The solution proposed in this book is examined with respect to the costs and benefits of patent systems and then it is argued that the suggested solution decreases the costs of patent systems but does not reduce the benefits of patent systems.

As is clear from the aforementioned description, the research of this book is conducted on the basis of material from Europe and the US. There are several reasons why Europe and the US are the main focus of this book.

Firstly, as far as intellectual property law is concerned, Europe and the US are two of the most influential areas in the world. Indeed, Europe and the US along with Japan are the three main players in the world intellectual property system. They are leading the development of the international framework of intellectual property law and thus, in order to suggest patent reform, it is essential to study these two giants.

Secondly, both Europe and the US have developed competition law, which is closely related to this study. In many respects, the patent issues of standards are relevant to both patent law and competition law and thus the well established legal tradition of patent law and competition law is essential. Europe and the US are the jurisdictions where patent law and competition law have been developed and where there are cases which show the conflict between patent law and competition law.

The third reason is a practical one. It is impossible to study all the material from all over the world. It is inevitable to select some jurisdictions and focus the research on them. Nevertheless, the approach and the outcome of this research may be used to evaluate other jurisdictions and to suggest patent reforms.

## 4. LIMITATIONS

This book focuses on the patent issues in standards, which implies several limitations.

Firstly, mainly patents are examined and other types of intellectual property like copyright, trademarks and trade secrets are not considered. Intellectual property in general may be related to the compatibility issues and in particular copyright may be relevant to software compatibility since software has