

The Handbook of

EUROPEAN INTELLECTUAL PROPERTY MANAGEMENT

2nd Edition



Europäisches
Patentamt
European
Patent Office
Office européen
des brevets

Patent pools

The classic assumption of 'one invention, one product' rarely applies, says Dr Stefan Rolf Huebner. In many new fields of technology, inventions can be exploited best in combination with someone else's.

Independent vs complementary inventions

The basic principles of the system of technical protective rights that is the laws in force in all important industrialized nations date from the time of the Industrial Revolution. They are based on the pattern of innovation that was normally the case at that time and can be summed up by 'one invention, one product'. An inventor invents a useful new product and is rewarded for this by a patent that creates for him a temporary monopoly on marketing the product.¹ The better the invention, the more valuable this monopoly is. The result is a mechanism stimulating innovation that is elegant because it is self-regulating. This concept still works even when a product realizes a number of inventions simultaneously, so long as the relevant patents are under the control of the same company, eg because all of the inventions were made in this company. The inventions are independent in the sense that they may be converted into products independently of inventions patented by other parties.

Many new fields of technology are, however, dominated by inventions which can be meaningfully exploited only in combination with inventions of other patent holders or the value of which at least considerably increases as a result of being combined with the inventions of other parties. One reason for this is that usually the emergence of a new field of technology brings with it a large number of basic inventions, on which successive inventions then build and upon which these later

inventions are therefore dependent. Another reason is the continuing trend of cross-linking products, which requires interoperability and standardization. In other words, a product can exist in the market only if it has specific, generally patented, essential features. A DVD recorder, for example, is the product of a combination of more than 100 inventions of over 20 different companies and research establishments. These inventions are complementary in the sense that they add up to a product, ie an innovation, only when combined with the inventions of other patent holders.

The need for cooperation

Complementary inventions require an innovation culture that is geared to cooperation and allows companies to open up their technology portfolios to one another in order to achieve appropriate exploitation. In an international survey, about 90 per cent of businesses indicated that they rely considerably on external or cooperative sources of technology.² Is the existing patent law suitable for promoting such activities? Or is it perhaps even a hindrance?

Because a patent assigns each invention to a patent holder, technology is split into numerous proprietary fragments. The patent holders of complementary inventions have to join these together in order to arrive at a marketable innovation. This can prove difficult in practice because each individual patent holder has to consent to the exploitation of his patent rights. These numerous individual negotiations are expensive and delay the introduction of the new product, not least because they tempt the negotiating parties to demand unreasonably high remuneration for their respective contribution, with the result that the sum of the charges is greater than the profit to be expected from the innovation – an effect for which the graphic term ‘royalty stacking’ has been coined. The higher the number of patent holders involved,

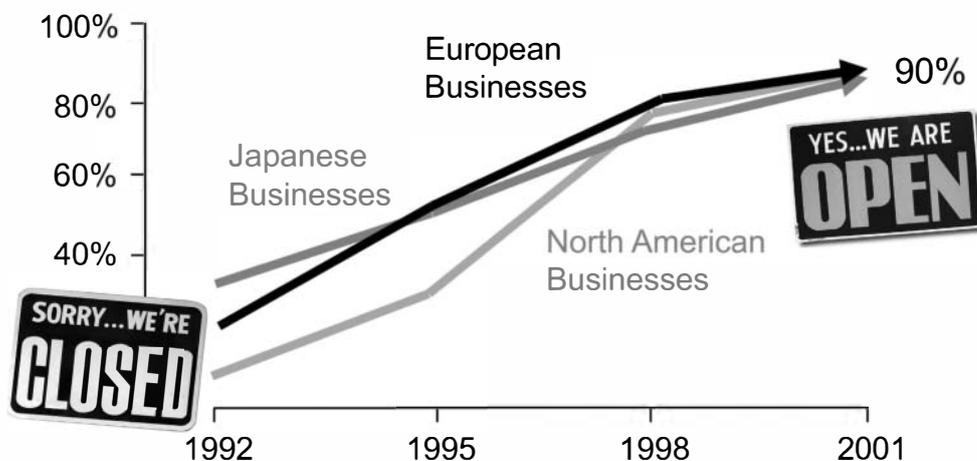


Figure 4.4.1 Share of companies with high reliance on external or cooperative sources for technology (in %)

the greater the risk of failure of the entire project. This is sometimes referred to as an ‘anti-commons problem’ – in an allusion to the directly opposite phenomenon of the ‘commons problem’.³

Cooperation in patent pools

However, many successful joint innovations, such as dynamic memory chips, control systems for motor vehicles and data compression methods for DVDs, demonstrate that there is a way of getting round the problem. Each of these innovations is based on a patent pool. The partners of the patent pool waive the monopoly right, to which each is legally entitled, for the benefit of the partnership. These rights are replaced by new, contractually agreed rules governing the joint exploitation of the inventions and the remuneration of the individual contributors. By fixing in advance a remuneration formula (or a cost-free cross-licence) for future inventions, the need for individual negotiations can be eliminated. Simple rules and a clear allocation of roles focus the expertise of the partners and prevent conflict. It should be noted that the fact that the members of the patent pool have waived their legal rights does not mean that patents could be dispensed with altogether;⁴ for it is only through patents that inventions become marketable and can then be introduced into a patent pool. The patents therefore retain their reward function because they offer the person introducing them the advantages of membership of the pool.

Patent pool requirements under antitrust law

Because of the obvious influence of a patent pool on competition, not only competition between the members of the pool but also competition between members and non-members of the pool, patent pools fall within the regulatory scope of antitrust law. Added to this is the fact that agreements regarding the creation and organization of patent pools – unlike conventional bilateral licensing agreements between licensor and manufacturer – are not covered by the European Technology Transfer Block Exemption Regulation.⁵ At this point, it should be made clear that the joint exploitation of patents still does not create a cartel. The classic ‘one invention, one product’ patents are after all already monopoly rights that temporarily restrict the freedom to imitate and hence competition for the benefit of the inventor – this restriction, however, being particularly desirable because of its effect of promoting innovation.

A patent pool merely replaces a single beneficiary with a collective. There is therefore no reason why a joint monopoly of several parties should in principle have a more detrimental effect on competition than the monopoly of a single party. Quite the contrary, the pool usually creates competition between the members of the patent pool because they are bringing onto the market competing products that all realize the joint technology. Moreover, it has been shown empirically that an innova-

tion can be disseminated faster by a number of companies than by a single company, for which reason alone a patent pool encourages progress.⁶

On the other hand, patent pools must not be used as a pretext for price fixing or an unnecessary concentration of licences. As a classification, European antitrust law, following the practice in the United States, resorts *inter alia* to the criterion of ‘essential’ technologies. A technology is essential if it is a necessary part of the product, there is no substitute for it, either inside or outside the patent pool, and it is covered by at least one protective right. A patent pool that embraces only essential technologies is generally regarded as unobjectionable under antitrust law.⁷ The ‘essential’ doctrine imposes special requirements on the organization of the patents of the patent pool: each patent has to be drafted in such a way that its scope covers precisely one aspect of the respective invention that, in the sense of antitrust law, is a necessary part of the product, for which there is no substitute. If the patent pool underpins a market-dominating standard, the patents moreover also have to be available to non-members of the pool under reasonable and non-discriminatory licensing conditions.⁸ This is intended to prevent a cornering of the market by the patent pool that is detrimental to competition.

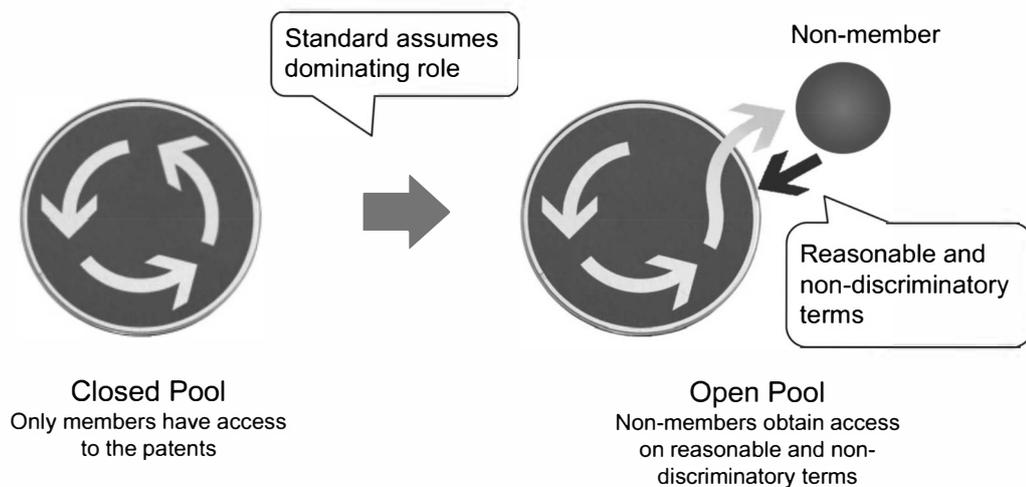


Figure 4.4.2 If a standard assumes a dominating role in a market, the patents underpinning the standard have to be made available to non-members of the pool on reasonable and non-discriminatory conditions

Conclusion

Complementary inventions require an open innovation culture. The members of a patent pool create this by voluntarily waiving their individual exclusive rights in favour of a collective exploitation. Thereby, they can circumvent the anti-commons problem and reap the fruits of their inventions.

Notes

- 1 Rudolf Krasser (2004) *Patent Law*, 5th edn, p 50.
- 2 Edward B Roberts, *Global Benchmark Survey on the Strategic Management of Technology, Research Technology Management*, 2001; Alexander Gerybadze, *Jahrestagung Innovationsrecht*, 2004.
- 3 Michael A Heller and Rebecca S Eisenberg, Can patents deter innovation? The anticommons in biomedical research, *Science*, **280** (1998), 698 ff; John P Walsh, Ashish Arora and Wesley Cohen, *Effects of Research Tool Patents and Licensing on Biomedical Innovation*, OECD Conference on Industrial Property Rights, Innovation and Economic Performance, Paris 2003. Cf. also Nikolaus Thumm (2004), Strategic patenting, *Biotechnology, Technology Analysis & Strategic Management*, **16** (4), 529 ff. and Bernd Lutterbeck *et al* (2000) *Contradiction in Terms?* A short report prepared for the Federal Ministry for Economics and Technology, Internet Governance Research Group, Berlin, p 23.
- 4 Robert P Merges (1999) *Institutions and Intellectual Property Transactions: The case of patent pools*, University of California at Berkeley School of Law, working paper.
- 5 Regulation (EC) No. 772/2004 of the European Commission of 27 April 2004 regarding the application of Art. 81 subsection 3 of the EC Treaty to groups of technology transfer agreements.
- 6 Guidelines for the application of Art. 81 EC Treaty to technology transfer agreements, ABl. EU, No. C 101 of 27.4.2004, para. 9.
- 7 Guidelines (Fn. 6), para. 220.
- 8 Guidelines (Fn. 6), para. 226.

Dr Stefan Rolf Huebner is a German and European patent attorney in Munich.

He studied Physics, Biophysics and Intellectual Property Law at Harvard University, at the University of Oxford, at the Technical University of Munich, and at the Max Planck Institute for Intellectual Property. Dr Huebner obtained his doctorate for work in the field of nanobiotechnology. Before specializing in intellectual property, he was a management consultant with McKinsey & Co, a research assistant at the Klinikum rechts der Isar in Munich, and from 1995 to 1996 he was a research fellow at Harvard University.

Dr Huebner's clients include several renowned research institutions and internationally well-known technology companies. He has published numerous articles in leading law journals concerning current problems in patent law and has served as an adviser to the European Patent Office, the United Nations and other national and international organizations.