

## Intellectual Property Rights in Bio-Technology and Computer-Technology

Comment

by

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Professor SCHMID's [1985] paper is stimulating in many respects. It deserves intensive discussion:

First of all he provides us with detailed information about the special economic characteristics of two rather new and rapidly-growing industries. This paper can contribute much more to the economic understanding of the functioning and specific features of these new industries than the many reports and articles on the new industries that are currently flooding our media.

Secondly, the paper shows convincingly how maladjusted are many of our property rights institutions when faced with these new product developments. Thus, special and sometimes even "perverse" ways of property protection are chosen by firms in these industries in order to protect their intellectual property rights. However, if I understand the paper correctly, Professor Schmid claims that these misfits between legal institutions and new product characteristics are not subject to present or future rearrangement and refinement of legal institutions, but that they represent clashes in principle between the two spheres (institutions and products) and that this causes severe consequences for the direction of research and development activities in these industries.

Thirdly, Professor Schmid proposes more public ownership in non-basic research and demands public intervention in the development of standards as a possible solution to some of the problems he has outlined.

As I am neither a patent lawyer nor a patent economist nor a computer scientist nor a biologist, I will not discuss the first aspect of the paper but assume as given the characteristics of the new industries described in the paper. However, I wish to add a few remarks on the second and the third aspects.

Professor Schmid states his theoretical concern as follows: "Bio-technology and certain aspects of computer operating systems have good characteristics which differ from other goods and thus, when private property is implemented

by the patent laws, the results are different than with other goods.” And: “If theory doesn’t focus on the character of the good involved, it can’t formulate testable hypotheses to predict the substantive performance of alternative property rights.”

There is no doubt: unless products are assumed to be homogeneous, differences in them will make a difference, especially if the effects of legal institutions are at stake. Thus, we know for instance that the lack of liberty of contract that is to be found in socialist states will not be harmful to the economic performance of some goods with certain characteristics (such as military security systems) but will inhibit the economic performance of others (such as consumer goods). The reason for this is that the mandatory hierarchical modes of coordination are adequate for goods with highly specific properties but are too costly for goods with standardized features. The quality of the latter type of goods will decline, or procurement of these goods will bypass the official institutional hierarchy.

Similar considerations can be advanced for systems of patent protection. If there is only one mandatory way (or perhaps two) of acquiring an exclusive right to a new product idea, then such a system can operate properly only for the kind of good which was originally in mind when the system was created. Therefore bypassing or misuse of the official system is invented by those whose new products’ characteristics do not fit the actual institutional arrangement. Enforcing of exclusive rights by private contracts would be too costly, if feasible at all. Professor Schmid offers striking examples of such developments.

The question is, however, whether this is a one-way-street, whether it is only the causal relations between given institutional arrangements and research agendas in new industries that should be studied. Additionally it could be asked: Do these novelties have an impact on institutional change in the field of patent law? My knowledge of patent law is not great, but I would imagine that the old patent law was an answer to a certain and expanding kind of economic situation. Why should not new product characteristics reshape the patent law, especially if information and transaction cost of protecting intellectual property rights are rising in these fields? In the long run, legal institutions serve as economizers of transaction costs, or at least they should do so. It would be nice to learn more about possible solutions to the new problems by reorganization of private property rights of invention. E. g.: would auctioning of (bidding for) rights to invent new solutions for a certain kind of problem be a way of coping with the new issues raised?

Instead, Professor Schmid demands public intervention. He argues for publicly-organized product research in plant breeding in order to avoid private cosmetic breeding and he calls for more public standardization in the computer business. At first sight this desire might seem convincing; but second thoughts lead me to add some notes of caution. Let me outline them in three points:

1. How can one be sure that publicly-organized application or product research (not basic research) would work as efficiently as its private counterpart? Where are the economic incentives for public agencies to concentrate on important application problems and to do it in an efficient manner? The property rights structure of a proposed public application research agency in the plant business should be further discussed. According to what and whose criteria would the research agenda of these agencies be designed, and how could one ensure a creative and efficient accomplishment of that agenda? It could turn out that cosmetic breeding in the private sector is, in the long run, less costly than the public alternative, and it must be noted that cosmetic breeding activities also may lead in some cases to real and surprising inventions and innovations.

2. Public standardization as demanded for the computer business has its price. A standard, once enforced, could prevent or impede innovation and experimental activities of the new industry and thereby inhibit its development (see for example the German telecommunications industry, whose development suffered until very recently from the highly-regulated telecommunications environment). Optimal standardization is still an unsolved problem in two senses: On the one hand it is very difficult to determine the optimal point in time when standardization should be implemented, and on the other hand it is a transaction cost-intensive task to determine the substantive degree of standardization, i.e. the scope and the details of a standard. If these problems are resolved in a suboptimal way, consequences can be harmful, especially for the development of new industries.

3. I ask myself whether the situation in the new industries described by Professor Schmid is so unique and – therefore – demands special public attention. In the service industry and in trade we find similar problems. Take a firm that has created a special brand or a special service (e.g. consulting work, fast food outlets) that cannot easily be protected by patent law. In such cases, problems of “cosmetic breeding” and sometimes also of customer competition may arise as well. One solution to this is forward integration by some special sort of contracting, e.g. by franchising. Another solution is rapid expansion e.g. by the formation of retail chains. In these and similar cases, the service systems control access to complementary inputs as do seeds and operating systems in the cases described by Professor Schmid (joint impact goods). To introduce an industrial product in a successful retail chain may demand as intensive adaptation to and dependence upon a temporary monopolist as providing application programs for IBM’s operating system. But who would call for a publicly-standardized retail system in order to meet the dynamics and uncertainties involved when new and temporarily dominant retail systems have emerged that can in principle be attacked by creation of a cosmetic variety and by concentration on special market segments that cannot be successfully served by the dominant firm?

*Reference*

SCHMID, A. ALLAN [1985], "Intellectual Property Rights in Bio-Technology and Computer Technology", *Zeitschrift für die gesamte Staatswissenschaft/Journal of Institutional and Theoretical Economics*, 141, 127–141.

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