PATENTS, PROSPECTS, AND ECONOMIC SURPLUS: A REPLY

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McFetridge and Smith\(^1\) have posed a question about "The Nature and Function of the Patent System"\(^2\) that is important. I think their point is incorrect, but because my response depends upon empirical questions, it does not settle the matter in a logical, conclusive way.

The crucial cost parameter that McFetridge and Smith have left out of their model is transaction costs. As Barzel, the author of the model on whom they depend, has recognized, the rent dissipation problem disappears if transaction costs are zero.\(^3\) That is because all potential inventors have an incentive to enter into an arrangement that maximizes the social return from the invention because increasing the size of the social return increases the size of the gain that they can split among themselves. The zero-transaction-cost assumption means that the potential inventors can acquire the necessary information and make the necessary agreements without any cost. Therefore, by assumption, they will do so.

McFetridge, Smith, and I are assuming that transaction costs are positive. However, if the gains from such arrangements exceed the costs of making them, they will still be made. Thus the level of transaction costs operates as a limit on the competitive-dissipation process incorporated in the model. The point of "The Nature and Function of the Patent System" was that patent property rights operate to lower those transaction costs and hence to lower that limit.


\(^3\) "The fact that many information situations have the potential for waste does not necessarily mean that waste actually occurs. If, in the aggregate, these actions produce a negative product, arrangements that successfully restrain them or reduce their impact will generate a positive return. An implicit, but crucial, assumption of the model is zero costs of transacting." Yoram Barzel, Some Fallacies in the Interpretation of Information Costs, 20 J. Law & Econ. 291, 292 (1977). And of the article on which McFetridge and Smith base their model, he wrote: "When viewed more widely, the entire literature on the overexploitation of resources in the public domain (including my own contributions) is subject to the same criticism that we are making of the information models: it fails to recognize the possibility of the directing of market forces toward minimizing the dissipation." Id. at 297, n. 14.
The outcome of these processes depends critically on the nature of the cost functions. At the early stages of innovation critical to the McFetridge and Smith argument, there are factors operating to make transaction costs low and cost dissipation functions rise steeply. Transaction costs will be low because the number of firms with the necessary comparative advantage to exploit the inventive possibility will be small and the uncertainties attached to each possibility make it easier to agree upon a division of activities, since the value of what any one firm is either giving up or gaining is unclear. Even here the patent system works to lower transaction costs because the firms with comparative advantage are likely to be the firms that hold the immediately preceding generation of patents. Indeed, the claims of some of those patents may encompass the invention possibility itself.

In the third section the comment explicitly addresses the effects of the patent system on transaction costs. The comment dismisses potential gains generated by the patent prospect right by discussing two cases, neither of which approximate reality: the case where each inventor is unique in all respects and the case where all inventors are homogeneous. The important reality case where potential inventors are different in some respects that may or may not be important, where those differences are changing over time, and where transaction costs make it costly for each potential inventor to know the current position of his rivals is ignored. This is precisely the case where the introduction of property rights, because of their effect on transaction costs, can contribute to social welfare.

"The Nature and Function of the Patent System" reported the existence of a set of features of a functioning patent system, described for purposes of expositional brevity as prospect rights, and speculated as to how those features relate to a theory of the patent system. As the comment demonstrates, they fit uncomfortably with the received body of theory. But their failure to fit any particular analytic framework has nothing to do with the fact that any full theory of the patent system should deal with this aspect of their structure.

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4 The point here is analytically similar to the reason why monopoly rents might be dissipated less through service competition than price competition. See George J. Stigler, Price and Non-price Competition, 72 J. Pol. Econ. 149 (1968), reprinted in The Organization of Industry 23 (1968).

5 Two minor points: McFetridge & Smith, supra note 1, at n. 18, misinterpret the discussion of basic research there quoted. As is common in the literature, it treats basic research as a first-stage in the development of technology. In the quotation, however, basic research is defined as research directed toward explanation rather than the creation of useful things. There are interactions between basic research, thus defined, and technological innovation, but it is not an activity directed towards innovation.

McFetridge and Smith (id. at n. 19) seem to prefer an auction system, following Yoram Barzel, Optimal Timing of Innovations, 50 Rev. Econ. & Stat. 348, 352 n. 11 (1968). At a
conceptual level a grant or auction procedure is as capable of resource dissipation as is any other institution subject to the pressure of competitive rivalry. Competitors can spend resources to influence the scope of the grant, the rules and procedures for its allocation, and to calculate the optimum level of their bid. A patent system is a grant system with the clever feature that it generates private incentives for those with comparative advantage in the innovating activity to reveal the information necessary to define the prospect right. Without this incentive, the granting agency would have to determine the appropriate scope and technological area of the prospect rights with access only to its own information.