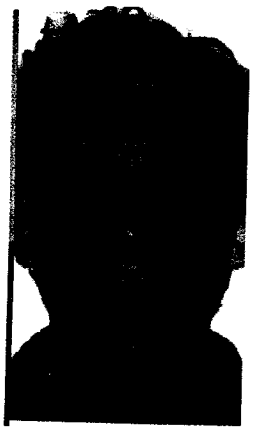

Competition policy for innovative industries

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• • • • • • I recently visited the US Federal Trade Commission for a set of hearings on competition policy for innovative markets. Though I have no financial interests in any present or recent antitrust case, I think the topic is of central importance to innovation in the US. So do others; many firms and their representatives are taking part in these discussions (http://www.ftc.gov/opp/intellect/index.htm).

A central question motivates the discussion: Do large firms with market power deserve special antitrust scrutiny in markets characterized by robust innovative activity? In my remarks at the hearings, I discussed recent thinking that distinguishes between environments where intellectual property protection is effective and where it is not.

Setting

The economic benefits from commercializing technology are essential for modern economic growth. Successful commercial innovation enhances general economic welfare, especially when it leads to lower prices and new services. Even when both threaten the established order of business, society is still better off.

Business, technical, and market uncertainty characterize technology markets. Even experts have differing market forecasts and views about the best commercial options. Hence, it is difficult to evaluate competitive behavior for a potentially ephemeral market structure. Altogether, this is a cautious setting for competition policy. The topic is important, but policy makers must begin from a relatively humble position—they have little prior influence or regulator power over technology markets. Although, they should give the market a free hand as often as possible, their role is not necessarily one of dogmatic restraint. Even with such caution, most economists agree on one minimal principle for innovative markets: Competition policy can seek robust commercial experimentation and encourage multiple commercial visions, even for innovations with modest probabilities of succeeding. This conclusion arises because there are few or no substitutes for the learning that occurs from market experience. In the face of such pervasive uncertainty, even failures are useful. One innovation might fail, but in failing, might teach others who are working on their own innovations. If this original failure eventually leads to commercial success, then the benefits from an informative failure can easily exceed the spent resources by orders of magnitude. Hence, industry should not think of commercial failure as an obvious waste of resources—the recent experience with *dot-bombs* not withstanding.

Still, this also does not get us very far. Incumbents can innovate, so can new entrants; society benefits in either case. This does not tell us whether antitrust law can play any special role.

Approach

There is a traditional textbook approach to the central question of antitrust laws and whether they aid innovation. The end result of asking this question is that monopolies deserve special scrutiny by government policy makers. This conclusion arises from the concern that monopolies have low incentives to innovate.

To understand this intuition, compare two situations: an inventor selling his invention to a monopolist or to an industry with competitive supply (otherwise things are equal). The monopolist will be concerned about the cannibalization of the monopoly rents he enjoys in the product market, whereas competitive firms will not. According to this argument, firms with market power do not spend as much on innovative activity, and, in the same spirit, monopolists also do not commercialize innovations as quickly as more competitive markets.

To be sure, economists and antitrust lawyers have challenged this view. A contrasting traditional approach focuses on a monopoly's use of innovative activity to preserve its position. In this view, a forward-looking monopolist, identifying a threat from an entrant who can credibly buy the invention, will innovate robustly. In general, an incumbent monopolist has more to lose in falling from a position of monopoly than any new entrant has to gain from entering. Therefore, the monopolist's incentives are higher than the entrant's.

Overall, these insights do not lead to satisfying guidance for policy makers. They suggest that government policy should prevent firms with market power

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from protecting themselves from threats. Although this view is consistent with much of the spirit of antitrust law, it is impractical to put into practice. To do so, policymakers must find information about the presence of a monopoly, the potential for another entrant, and the incumbent's calculations about a threat from an innovative entrant. These are awkward and problematic actions.

More to the point, this traditional textbook framing does not map well into the market structures in most innovative markets today.

Recent thinking

Recent thinking reframes the analysis of the central question about large firms and their influence on innovation. It presumes that we live in a world of widely distributed technical knowledge, where many small firms have access to some, if not all, of the technical assets necessary for inventive activity. In addition, commercializing those inventions involves use of real assets from disinterested parties, such as venture capitalists, and deeply interested parties, such as incumbent firms.

Entrants must incur entry costs to compete with incumbents or, alternatively, make deals with them. A crucial point is that each of those choices requires distinctly different sunk investments. These investments are known as sunk because there is no way to recover a return on them unless the entrant's strategy succeeds. Indeed, most small firms treat these choices—compete or cooperate—as mutually exclusive decisions. Another crucial point is that incumbents and entrants negotiate deals knowing that the other poses the threat of competition.

Consequences

This approach directs attention toward two questions. First, if the two parties cooperate, do the incumbent's assets significantly raise the value of the invention in its commercial form? As it turns out, an incumbent's assets do add value and hence policy issues arise in these markets—which is to say, in most innovative markets.

Second, and this is especially important, if the two parties compete, can entrants effectively exclude the incumbent from imitating their invention? Most markets lie between two extreme situations: those where entrants can exclude imitation by the incumbent and those where they cannot. To be sure, the effectiveness of intellectual property protection—such as patent law—is key in determining which situation arises.

When inventors can exclude imitation, then markets for tradable technologies arise. This sounds nonintuitive because exclusive rights are not usually associated with facilitating trade. But the key observation is that the protection afforded by intellectual property—especially to small firms—can help overcome hazards to exchanging information-intensive goods or any good where disclosure problems interfere with trade.

In tradable technology markets, licensing or joint ventures are common. Inventors tend to cooperate with incumbents who hold valuable assets. Sometimes these deals raise value for everyone. Sometimes these deals are collusive. The larger point is that inventors tend to act as the source of ideas, but they do not often overturn commercial leadership. For example, the relationship between biotechnology and pharmaceutical companies today resembles this predicted pattern. So, too, do relationships in the international chemical markets.

In contrast, when entrants cannot easily exclude imitation, incumbent bargaining strategies with inventors strongly shape incentives to innovate for both parties. Knowing this, large incumbents can and do use the bargaining process to alter incentives to the smaller participants. Incumbents take actions to increase or diminish an entrant's incentives to compete, build their own business, or choose among these options. This is the situation found most often in IT markets.

Examples

It is important to understand the wide range of economic behavior that arises during bargaining, so let me offer two contrasting illustrations.

On the one hand, some large incumbent firms have developed reputations for not walking away from potential deals where they could acquire proprietary information. For some years now, Cisco maintained strict policies about when it would buy a firm and for how much. Such predictability had a large influence on venture capitalists, and on small inventive firms that viewed Cisco as a potential target buyer or commercial partner. Cisco's policies certainly altered inventor/entrant incentives to develop products, even when Cisco was the target buyer. The late 1990s would have witnessed much innovation in communications equipment markets under any scenario, but Cisco's policy certainly induced small firm entry on the margin, much of it favorable to Cisco.

On the other hand, negotiations can also be confrontations. It is well known that in the spring of 1995, Microsoft threatened to withdraw application programming interface (API) support from Netscape if Netscape refused a cooperative deal. Even though Microsoft readily gave such API information to others, it was understood by all parties that this was one of several carrots on a stick for eliciting cooperation that Microsoft typically offered to small firms. It was also understood that withdrawing API support would slow down the pace of innovative activity at Netscape and delay introduction of new features to its products.

I am not praising or criticizing either firm in these instances, nor assessing the efficiency or anticompetitiveness of these actions. I simply want to illustrate the range of behavior that commonly arises. Policy should not be naive about its range nor its commonality.

Where this is going

Back to the main question: Does recent thinking suggest that incumbent firms deserve special scrutiny? I think yes, but to be fair this thinking has not fully worked out a taxonomy of tradeoffs.

Recent thinking widens the scope of the analysis. At the same time, it provides more nuance in its view of innovative

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behavior. Incentives for innovation exist for both incumbent and entrant. Those incentives depend on deals with complex features and with prices that are endogenously determined. Entry also depends on conditions that incumbents can shape.

More to the point, recent thinking focuses policy questions in a particular direction. For policy purposes, this view requires information about both structure and conduct. It first asks whether conditions exist so that smoothly operating markets for technology can easily arise. If so, it then asks whether the deal arose out of the desire to efficiently share assets or collude. If technology markets do not arise, it then asks whether incumbents have access to a wide arsenal of strategic tactics during bargaining and whether these tactics have consequences for innovation by entrants.

This view suggests that policy should encourage the use of intellectual property in making technology markets work smoothly, particularly when incumbent assets are valuable and small entrants need protection against disclosure problems. At the same time, it also raises questions about the competitive tactics of powerful firms in particular environments where intellectual property is weak.

These issues arise in many settings and will continue to arise. Information technology markets endemically produce firms with bottleneck positions over key assets, such as distribution facilities or patents. These are also worlds with widely distributed technological capabilities. Hence, it is inevitable that new inventors compete and cooperate with incumbent firms who control existing assets.

In summary, traditional analysis too narrowly frames policy issues for this setting. It is more fruitful to think about how competition policy works through two mechanisms, that is, by altering entry conditions and the bargaining terms between powerful incumbents and innovative entrants.