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Ties that bind: foreseeing foreclosure

First, a disclosure: I have no financial stake in the present Microsoft antitrust suit with the Department of Justice. Actually, I have never had a financial interest in any of Microsoft's legal battles, except that I use some of its products.

A second disclosure: I have a peculiar perspective on the present case. I teach commercialization of technology to MBAs. All my students want to know how they can get a monopoly just like Microsoft's. I sometimes wonder if I do more damage to the US economy by teaching students how to obtain monopolies or by teaching them how to compete against them.

OK, enough on disclosures.

Though I am not a lawyer, I am a market analyst of information technology industries. Recently I have found myself taking part in conversations about antitrust law. Though I am familiar with some of the nuances of the field, I must confess that it feels a lot like walking in on an ongoing conversation between friends, where the conversation is primarily about its own history.

Lawyers focus on whether behavior in the software industry fits into the present legal definitions for foreclosure and tying (see box). This slant tends to cast antitrust issues as a question of judicial edicts over forbidden business tactics. While that focus is fine for some purposes, it is a narrow base from which to begin a broad discussion about competition policy in innovative markets.

The one structural feature lying at the heart of vertical relationships in the IT industry is this: when firms innovate and commercialize technology, they act as both partners and competitors at the same time. Large and small firms alike do this. Although the current discussion focuses on the behavior of large firms, I can anticipate the layman's response—that the same rules

ought to apply to any size firm. In industries characterized by lots of experimentation, I personally don't think the same rules ought to apply to both large and small firms. However, this principle is easier said than done.

Putting the discussion in context

Understanding what foreclosure policy is, and how it counts in the long run, means appreciating what typically emerges during the commercialization of new information technology.

Product cycles under conditions of weak intellectual property protection determine most commercial behavior in IT. Firms prototype new functions, beta test them on big users, and market and sell their products—with little hope of avoiding rapid imitation. Firms improve their own products frequently, imitate others when they can, and develop their own ideas if they must. No technical lead is lasting, and the only path to success involves frequent experimentation and repeatedly beating everyone else to market.

Remarkably, despite fierce competition and experimentation, the same types of technological arrangements tend to show up as key components of most user systems. These arrangements are often called platforms.

Platforms arise because both users and software vendors make platform-specific investments in such things as training, customized software, programming skills, programming tools, and software libraries. Operating systems change slowly for this reason. The same story applies to communication protocols in networks or formats for digital storage of different types of media.

I am not saying that a single firm must own all parts of a platform. A single firm can act as the primary supplier for most parts of a dominant platform, as IBM did in mainframes for many years.

In addition, many suppliers, such as Intel and Microsoft, can supply parts for popular platforms. In some specialty markets, there will also be other firms who offer key components, as occurs today in most client/server networking arrangements. IBM, Intel, Sun, Cisco, and Oracle all dominate particular component markets of common arrangements. In every era of the computing market there have been technical leaders who control the development and sale of unique assets at the heart of popular platforms. This pattern alone could raise antitrust issues, but its combination with other factors usually leads to vertical issues, which is what this discussion focuses on.

The key thing to note is that, except in rare circumstances, it is much easier and cheaper for all software developers and users to develop new products on an existing platform than to build an entirely new one. Thus, suppliers of established software can often add new functionality at a lower cost than competitors. If competitors bring new functionality to market in the form of new software, they do it by providing compatible software.

Let me illustrate with an example. A few years ago, Baxter and TSI revised their EDI application for hospitals—programs called Value-Link and OnCall. It was a large undertaking, and a risky product launch, which took a good two years to get off the ground. After a few years of experimentation and marketing, it diffused to thousands of hospitals nationwide, helping these organizations reduce costs of supplies.

It is not surprising that TSI used Windows and Access as part of its system. What would have been the point of writing a whole new operating system when these developers had enough to do on other parts of the application?

Many such examples exist. The situation is endemic to networked PCs or new developments in Internet-based applications.

Vertical issues arise as a result of these complex combinations of software. Manufacturers fight to control the pivotal parts of a platform because it influences their rights to modify old arrangements with new functionality.

Foreclosure
Foreclosure policy
Tying
Vertical relationship

Illegal vertical relationship

Definitions

Actions that exclude rivals
Antitrust laws that prevent monopolies from excluding rivals
Actions of firm with a monopoly that forces other firms to buy related products
Firm-to-firm transaction as opposed to a horizontal relationship (collusion between directly competing firms)
Firm-to-firm transaction that coerces buyers, excludes rivals, abuses monopoly power, and reneges on deals

Tomorrow's revenue depends on retaining these rights.

The fight is subtle and tactics change frequently. Firms emulate each other's experiments, steal another firm's vision if they must, and induce users to switch to their products. They do this by integrating many functions into one product or by offering new products to loyal customers of their product. If unsuccessful with a crucial part of a complex bundle of applications, they must find another partner, relying on either a joint venture or licensing deal for the missing pieces.

A more concrete example centers on Microsoft's popular platform, Windows. The company is in an excellent position to bring out new functionality in applications closely related to that platform. If it doesn't, then someone else who makes software compatible with Microsoft's programs will do so soon enough. We can expect occasional fights between Microsoft and other firms trying to diffuse a compatible application. It is not at all surprising that a firm such as Microsoft agrees to distribute its products through many channels and, if it can, limits the distribution of its rivals. And it is not an odd feature of this market that one product's sale, such as a Web browser, influences sales and customer experience in other areas such as networking and Internet applications.

As an aside, some commentators complain that Microsoft makes money by copying Netscape's ideas. This is neither the first instance in which Microsoft has done something similar, nor is Microsoft the only firm to practice this art—it is a fact of life in software. For that matter, Netscape did not hand-

somely reward the University of Illinois, where Mosaic, the first popular browser, emerged. More to the point, these issues are the domain of intellectual property policy, not antitrust policy, which puts them outside of the jurisdiction of the Department of Justice.

Cooperation and partners

Nobody should have a problem with an established firm that continually experiments and tries to enhance its own products if everyone benefits, right?

But confusion arises when entrants develop new products or variations on popular products. Entrants usually need to partner either explicitly or implicitly with established platform providers to sell their products. If partners always cooperated (either explicitly or implicitly), there would be no issue. More to the point, sometimes the lack of cooperation seems justified and within reasonable bounds for business behavior. Sometimes it is not, and defining those boundaries is difficult, especially when products are redesigned yearly.

Cooperation is usually forthcoming when established firms are interested in enhancing their own platforms with a new entrant's capabilities. In that case, cooperation may take many forms—sharing technical specifications, encouraging use of beta versions of software, offering licensing deals, and arranging joint marketing agreements. Many large firms regularly do these things. For example, Microsoft had no particular problem with Baxter and TSI's development of EDI applications for health care, since their

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work led to greater use of Microsoft products in hospitals, and Microsoft has no short-term strategic interest in this type of application.

However, most firms will not make a deal if it potentially threatens the value, or future control, of the firm's assets. If an entrant's capabilities threaten the established firm's future plans, the latter will naturally use licensing deals and joint marketing arrangements as tools to limit the former's business opportunities.

An example of these machinations has appeared recently in the news: Microsoft's dealings with Sun's Java language. Java is a product with lots of promise but whose basic efficacy has yet to be proven. Microsoft was not too keen on making Windows compatible with it, because Java could provide functionality Microsoft wants to provide sometime in the future. It was widely publicized that Microsoft balked at signing a licensing deal with Sun.

Eventually Microsoft did sign, and as I recall, many people speculated about why. Some industry analysts said Microsoft signed because the company wanted the additional system functionality since Netscape would also have it. Other analysts conjectured Microsoft feared being isolated from a product that every other developer in the industry supported. By being compatible, it could more easily imitate.

My point is that, almost by definition, this cooperative arrangement has tension built into it. Microsoft is now trying to modify Java just enough to benefit users and also hinder Sun's platform development strategy. Microsoft is trying to raise doubts about the compatibility of Java applications across platforms. (It is in Sun's best interest to have Java work the same on Windows and Unix-based systems.) As a result, Sun is upset with Microsoft, claiming breach of contract. Even if these firms patch things up, this soap opera will continue until Java's commercial success is either assured or impossible.

So a policy's ambiguity is this: an

entry into the market is good, but in practice it requires cooperation from competitors. In this case, to enter something with new features, some of which threaten Microsoft's assets, Sun has to get Microsoft's ongoing cooperation in the development effort. I have no idea whether Java will ultimately be a good idea for users, but it is certainly in society's interest to let Sun try. Unfortunately, however, Sun will probably never have an opportunity to experiment like it wants to.

Furthering the idea, most software developers prefer to have the cooperation of Microsoft, the very same firm with whom some of them might soon be competing. When Microsoft decides not to cooperate at some point, is that lack of cooperation outside acceptable bounds of business behavior?

So it is that platform providers exhibit seemingly schizophrenic behavior. Sometimes they encourage an entry, offering new bundles of services, even giving away something because it helps their sales elsewhere. Sometimes they want to borrow ideas from their partners, making alliances with ulterior motives so they can get into the business themselves. And sometimes they do not want partners at all, or they want to discourage former partners from becoming rivals. All of these are allowable competitive tactics when they lead to new products, more innovation, and lower prices. Policy issues only arise when large firms discourage entry.

Goliath or bum rap?

It does not matter whether new commercial experiments come from established or new firms. Society always benefits from exposure to new combinations of products. Foreclosure policy can make a difference by making it less difficult for a wide variety of experiments to end up in users' hands.

A sound competition policy should allow low-cost commercialization. If established firms can do this, fine. After all, established firms act in the interest of society when they market new enhancements to their old products. In this respect, Microsoft gets a bum rap from the popular press these days. As a large developer of new technology in servers, networking

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markets, and in the PC industry, it has brought great advances to many users over the years. While it is difficult to pity a company with Microsoft's reputation for ungracious business tactics, I react sympathetically to the company's claim that the present legal climate and the prospects of frequent judicial review runs the risk of hindering its ability to successfully innovate in the future as well as it has in the past. Any competitive benefits associated with an excessive witch hunt on Microsoft would be swamped by the misallocation of resources within Microsoft away from innovative activity.

Yet, there are two sides to every story. Technology markets are inherently uncertain, and users benefit from experimentation, even when much of it fails. This is because the economic benefits from one major commercial innovation are so large, one failure teaches others, who then try something new, and so on, eventually leading to commercial success. Experimentation only thrives with multiple points of entry. Occasionally an experiment from an unexpected corner rockets to prominence and threatens the established order of business. A sound competition policy should, therefore, prevent a large established firm with unique assets

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from shielding itself from the sharp spur of competitive threats, even those with a low probability of succeeding. It is not in society's best interest to have a single firm delay or hinder diffusion of a new product or any other commercial experiment. In this respect, Microsoft or any other large firm in any industry, deserves scrutiny in addition to that applied on small firms. Large firms using joint ventures, exclusive marketing arrangements,

bundled pricing, and bundled marketing can suppress interesting commercial experiments in ways small firms cannot.

The most troubling and also most difficult questions are not about whether, according to some legal norm, a particular action by itself, say, integrating new functionality into an operating system, is or is not tying. This strikes me as a narrow legal reading of the Microsoft/Netscape press battle and not a fruitful starting point towards a durable policy on vertical foreclosure in IT markets. The interesting issues are whether the platform provider used bundling, along with exclusive deals and other vertical contracts, to make it unnecessarily difficult for other competitors to develop, commercialize, and distribute a product that threatens the assets of established firms. It might be possible to develop such an argument, but it is not easy.

The difficulty comes from backward-looking evaluations of strategies formulated under conditions of technical and market uncertainty, in other words, before they succeeded or failed. This type of policy exercise has all the dangers of 20/20 hindsight.

What if the Department of Justice finds anticompetitive behavior? The next step would involve remedies that compel cooperation in the form of a contract or license that was not otherwise forthcoming. For example, imagine forcing Microsoft to license out its APIs at "reasonable" rates, as some commentators have suggested. If Microsoft is uncooperative, as one would expect, this would be a virtually impossible edict to implement in practice.

Buddy, can you spare a browser?

As a final disclosure, I should add that I am not yet convinced one way or another about the merits of a general antitrust case against Microsoft, nor about the appropriate action to take in today's world. Like any user, I get really upset when an online application only works with Microsoft Explorer and not with Netscape Navigator. But I also recognize that this is not necessarily an example of an exclusionary action (and, of course, I have seen it the other way around). Also, I know that the proper policy here requires a complex and careful evaluation of many actions—selective access and denials of APIs to developers, strong-arming OEMs, and other details—which may or may not have made experimentation and commercial entry unnecessarily difficult for others.

I have focused on Microsoft and Netscape to illustrate my argument that tying is too narrow a topic for antitrust issues. Maybe the Department of Justice is pursuing the wrong legal battle with Microsoft—vertical issues are more general than just the particular circumstances associated with today's legal battle. I take it as axiomatic that past progress is only a prologue. There will be future entrants marketing the browser of their day—it might be voice-recognition technology, reliable Internet telephony, or something else I cannot imagine. The Department of Justice should resist Microsoft-specific policies and pursue general policies aimed at increasing experimentation in this market. These same issues will arise again, possibly with these or other firms.

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