economists incorporated
Economists Ink
a brief analysis of policy and litigation
fall 2003

In This Issue

Patent Damages: Towards Full Compensation for Lost Profits

Tessie Su considers how courts determine lost profits in patent infringement cases. Courts increasingly have awarded damages due to lost sales of products that were not covered by the patents in suit. She analyses three categories of cases. The mechanism in which the patent generates profit for the owner is different in each category, and thus the but-for world is distinct for each. This article illustrates how understanding the underlying economics can improve damages analysis.

Coordinated Effects and Merger Policy Enforcement

Stuart D. Gurrea and Bruce M. Owen consider the antitrust agencies' increased interest in coordinated interaction. They discuss the possibility that a merger will lead to anticompetitive coordinated effects and the implications of that possibility for antitrust policy.

Ninth Circuit Expounds on Antitrust Injury

Jonathan L. Walker discusses a ruling by the Ninth Circuit Court of Appeals that clarified the type of injury that a plaintiff must allege to have standing to file an antitrust claim. The Appeals Court specifically rejected the suggestion that a customer need allege that it actually purchased or intended to purchase in the relevant market after the violation in order to survive a motion to dismiss. It is apparently sufficient that the plaintiff allege that it was a customer at the time of the violation and is worse off as a result of the violation.

Patent Damages: Towards Full Compensation for Lost Profits

By Tessie Su

Over the past decade, courts have been increasingly awarding lost profits on lost sales of products that were not covered by the patents in suit. For example, lost profits have been awarded on "derivative sales." Such sales include replacement parts and products that are combined with the patented products to function as a system. Courts have also awarded lost profits on products that do not use the patented technology but that compete with the infringing product. Finally, infringement sometimes involves patented processes, rather than patented products. In these cases, courts have awarded lost profits from sales of products produced by the patented process. In all three categories of cases, a damages estimate requires estimates of sales of the unpatented products that would have occurred "but-for" the infringement. This recent trend towards full compensation makes a sound economic analysis that appropriately reconstructs the "but-for" world more important than ever.

Lost sales of spare parts and consumables can be significant and may even represent the bulk of the damages, particularly when the patent enables a firm to adopt two-part pricing. Two-part pricing consists of a fixed charge for one product (typically a machine) and an incremental charge for another (typically consumables, spare parts, or service). Examples include razors and razor blades, printers and toner/ink cartridges, automobiles and replacement parts, Polaroid instant-picture cameras and film, and water purification systems and filters.

Two-part pricing may be a more profitable strategy for a patent holder because it allows a firm to charge different total prices (system prices) to consumers with different usage intensities and corresponding willingness to pay. For example, a consumer who wants to use the Polaroid instant-picture technology initially pays a fixed price for the camera. He then pays an incremental price each time he takes a picture. A consumer who takes a lot of pictures ends up paying a lot more than a consumer who takes only a few pictures. Often firms make most of their profit from the consumables, rather than from the machines. For example, Nintendo made most of its profit from selling games rather than from game consoles. Printer manufacturers still make most of their profits from toner/ink cartridges rather than printers.

This pricing scheme can easily fall apart when infringement occurs. *Micro Chem., Inc. v. Lextron, Inc.* is such a case. The patent covers a machine that dispenses microingredients into livestock feed by weight. Both plaintiff and defendant placed their machines with customers (mainly cattle feedlots) for free but charged them premium prices (8-10%) for microingredients. These customers usually bought microingredients from the company that placed its machines on the feedlot. Here the patent enabled Micro to practice two-part pric-

Continued on page 4

Coordinated Effects and Merger Policy Enforcement

By Stuart D. Gurrea and Bruce M. Owen

Before the FTC and DOJ issued revised Merger Guidelines in 1992, the principal goal of enforcement was to prevent mergers that would increase the likelihood of collusion. Afterwards, the emphasis seemed to change to avoiding mergers that would lead to unilateral anticompetitive behavior. In describing the possible competitive harms of a merger, the Guidelines continued to include the possibility that the merger could make it easier for firms to engage in "coordinated interaction," the Guidelines' term for both explicit and tacit collusion. Nonetheless, enforcement seemed to emphasize the other category of possible competitive harms described in the Guidelines, "unilateral effects." Unilateral effects refer to the possibility that the merger will cause the merged firm to raise price or otherwise change its behavior in a way that harms consumers but does not require the cooperation of other firms in the market, although the government generally assumes that competitors of the merging firms will acquiesce by not changing their strategies. The FTC and DOJ, however, have begun an effort to bring coordinated interaction concerns back to the forefront of enforcement.

The reasons why in the 1990s the antitrust agencies largely abandoned the idea that merger law enforcement was about avoiding "collusion," and began to focus instead on "unilateral effects" are unclear. The agencies may have been responding to a desire for more aggressive enforcement or to the governments' lack of success in court actions against mergers. Advances in economic theory and empirical techniques likely contributed to the focus on unilateral effects. While progress has been made in the theory of unilateral effects, the analysis of coordinated interaction lacked a general set of theoretical predictions identifying what factors lead to coordination. In particular, theory had not established a clear relationship between concentration and coordination. There are even some theoretical models in which an increase in concentration makes coordinated interaction less likely. On the empirical front, economists developed new tools for predicting unilateral effects but not for predicting coordinated effects.

Coordinated interaction as defined in the Merger Guidelines includes but is not limited to the types of collusion outlawed by §1 of the Sherman Act. One of the central legal issues in §1 enforcement has long been where to draw the line between lawful and unlawful coordinated interaction. While the exact boundary is uncertain, it is generally agreed that Sherman § 1 does not reach some types of coordinated interaction that are harmful to consumers. From an economic policy perspective, merger enforcement policy with respect to Clayton §7 should be indifferent to whether Sherman §1 might be implicated by the type of coordinated interaction in question. Indeed, one could argue that merger enforcement ought to be *particularly* concerned with coordinated interaction that, if it occurred, clearly would be *lawful*. Such behavior is undeterred by fear of §1 liability.

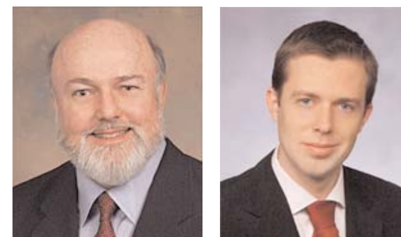
In markets with an oligopoly structure, where the number of competing firms is so low that managers will surely recognize the interdependence of their decisions, competitive profit-maximizing behavior is characterized by firms taking into account the actions and reactions of their rivals. A further reduction in the number of competitors may cause such interdependent behavior to become coordinated interaction and thereby reduce consumer welfare. Merger enforcement under § 7 of the Clayton Act can prevent mergers that would facilitate harmful coordinated interaction. The risk, however, is that such enforcement might mistakenly stop procompetitive mergers, those that would not have anticompetitive effects and would produce significant efficiencies.

Thus, the task for antitrust enforcement is to distinguish the mergers that would facilitate coordinated interaction from the efficient procompetitive mergers. The task is complex, particularly because it requires evaluating probabilities and not identifying actual illicit conduct, unlike the *per se* approach of Sherman §1. To accomplish this task in the absence of a robust and general theory supported by empirical results explaining the effect of market characteristics on the likelihood of coordination, antitrust practitioners are often left with the basic structural presumption that with fewer firms it is more likely that firms will coordinate.

Recently the FTC has suggested directing efforts at developing *implementable* empirical approaches to the analysis of coordinated effects. These approaches are aimed at determining whether pre-merger competition is consistent with coordinated interaction. For example, if customers were allocated, we would expect to find stable output shares across competitors. If market outcomes were consistent with coordination then, given the basic structural presumption, a merger-related reduction in the number of competitors would make coordination more likely. If they were not, then the merger probably would not be challenged unless it appeared that the structural changes brought about with a merger would change the nature of the market outcomes.

While the presumption that the likelihood of coordination increases when the number of firms falls might be the best rule available, it requires cautious application. It remains uncertain just when a merger that reduces the number of competitors threatens consumer welfare. A merger to monopoly will harm customers of the new monopolist. A merger between two of thousands of wheat farmers will not harm any grain buyer. Our tools for understanding cases between these extremes are evolving. Because these tools have not yet been perfected, merger enforcement remains an inexact science.

Bruce M. Owen is an EI Special Consultant and Gordon Cain Senior Fellow in Stanford's Institute for Economic Policy Analysis and Professor (by courtesy) in the Department of Economics. Stuart D. Gurrea is an EI Senior Economist specializing in antitrust and competition policy. This article is based on an a recent working paper "Coordinated Interaction and Clayton §7 Enforcement," (Stanford Institute for Economic Policy Research paper No. 02-026).



Ninth Circuit Expounds on Antitrust Injury

By Jonathan L. Walker

An economic analysis of antitrust damages requires an awareness of the standards for determining antitrust injury. Last month, a ruling by the U.S. Court of Appeals for the Ninth Circuit clarified the type of injury that a plaintiff must allege to have standing to file an antitrust claim. Glen Holly Entertainment, also known as Digital Images, appealed a District Court decision dismissing its antitrust claims against Tektronix Inc. ("Tektronix") and Avid Technology Inc. ("Avid") for failure to state a claim upon which relief could be granted. The District Court had determined that Digital Images lacked standing because its alleged injuries were not the type that the antitrust laws were intended to prevent. The Appeals Court reversed the District Court order.

As the decision concerned a motion to dismiss, the relevant material facts Digital Images alleged in the complaint were accepted as true. Prior to September of 1998, Tektronix and Avid were the only two competing manufacturers of non-linear editing systems in the United States. Non-linear editing systems are used to edit film and audio tracks for the entertainment industry. Digital Images purchased Tektronix non-linear editing equipment for its own use and to lease to film companies. In September 1998, Avid and Tektronix entered into an alliance. Tektronix stopped manufacturing and selling its brand of non-linear editing systems and became a distributor for Avid. Further, Tektronix agreed not to sell to rental equipment and service providers like Digital Images. As a result of the Avid/Tektronix alliance, Digital Images alleged that its "business was abruptly destroyed."

The District Court found that Digital Images' injury, particularly the diminished value of its Tektronix inventory, was not the type that the antitrust laws were designed to prevent. The District Court reasoned that efficiency-enhancing mergers might diminish the value of preexisting equipment but that such mergers are to be encouraged. Granting relief for losses due to such a merger would tend to discourage the very activity that the antitrust laws are designed to protect, increasing efficiency. Defendants argued further that there was no antitrust injury because Digital Images would have suffered the same consequences if Tektronix had merely gone out of business rather than entering into an alliance with Avid. By the time of the alliance, Tektronix market share was only 15%, and Tektronix asserted in its SEC filings that its non-linear editing product was at the end of its life cycle.

The Appeals Court found that Digital Images' alleged injury was of the type that the antitrust laws were designed to protect against. To survive a motion for failure to state a claim upon which relief can be granted, a customer in the relevant market merely needs to allege "(1) unlawful conduct, (2) causing injury to the plaintiff, (3) that flows from that which makes the conduct unlawful, and (4) that is of the type the antitrust laws were intended to prevent." The Appeals Court said that Digital Images had met these requirements. Digital Images alleged that Avid and Tektronix intended to eliminate competition in the relevant market and achieve a monopoly. Digital Images' economic losses were directly attributable to Tektronix's removing its product from the market allegedly in exchange for a benefit from Avid. Consequently, the Appeals Court determined that "the injury and damage suffered by Digital Images to its property and business were 'inextricably intertwined' with an agreement that the district court recognized as in violation of the Sherman Act."

The Appeals Court specifically rejected the District Court's suggestion that a customer need allege that it actually purchased or intended to purchase in the relevant market after the violation in order to survive a motion to dismiss. It is apparently sufficient that the plaintiff allege that it was a customer at the time of the violation and is worse off as a result of the violation. The Appeals Court also dis-

Continued on page 4

EI News and Notes

EI Affiliates With Allen Consulting Group of Australia

EI has entered into an affiliation with The Allen Consulting Group. Allen is one of the leading economic consulting firms in Australia, with offices in Sydney, Perth, Canberra, and Melbourne. The affiliation is broadly similar to EI's affiliation with RBB Economics in Europe.

HealthAmerica v. Susquehanna Health System (Williamsport, PA)

Barry C. Harris served as the economic expert for Susquehanna, which won summary judgment against plaintiff HealthAmerica, a managed care plan. Susquehanna was created in 1994 to manage the only two hospitals in Williamsport. Plaintiff's 2001 complaint alleged price fixing, unlawful interlocking boards of directors, and the offering of preferential rates to certain self-insured groups. Harris' analysis indicated that Susquehanna's geographic market included several competing hospitals and that Susquehanna did not exercise market power following its creation. Summary judgment was principally based on a lack of antitrust injury and a Copperweld determination that Susquehanna has always functioned as a single entity.

Frederick L. Sample, et al. v. Monsanto Company

On September 30 2003, the US District Court denied the plaintiffs' motion for class certification for the antitrust claims in *Frederick L. Sample, et al., vs. Monsanto Co., et al*. The decision is notable because it is rare that class certification is denied in alleged price fixing matters. The Court found that the plaintiff's economic expert had not shown that impact can be demonstrated on a class-wide basis. William C. Myslinski had testified for defendant Monsanto against class certification.

Patent Damages . . . (Continued from Page 1)

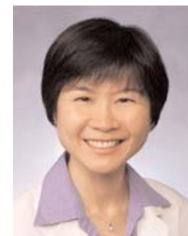
ing and derive its profit from the consumables. The Federal Circuit recognized this. In a recent decision it vacated the district court's grant of summary judgment holding that Micro was not entitled to lost profits. It specifically stated that "a damages calculation based on lost microingredient sales is appropriate under Rite-Hite."

Sometimes the patent in suit covers a production process. In *Minco, Inc. v. Combustion Engr., Inc.*, both plaintiff and defendant made fused silica. The infringed patent pertained to a rotary furnace that produced fused silica of better quality than defendant's old technology. The district court awarded lost profits for the patentee's lost sales of silica. The Federal Circuit affirmed. The courts clearly recognized that the superior quality yielded by the patent created significant demand for Minco's fused silica.

In general, there are two possible ways a patented process generates profit for the patent owner - one is that it lowers the production cost for the outputs and the other is that it yields products of superior quality (as in *Minco*). Reduced production cost allows the patentee to compete more aggressively for sales by cutting price. Alternatively, if the patentee chooses not to cut his price and forgo the opportunity to gain sales, he would enjoy a larger profit margin due to the lowered cost. Similarly, by offering products of superior quality the patentee can charge a higher price, or win sales from competitors, or do both. Again infringement introduces competition and thus takes away a patent holder's ability to profit from the invention.

Damages have also been awarded for lost sales on products that compete with the infringing product, even though those sales were not covered by the patent. In *King Instruments Corp. v. Perego*, both defendant and plaintiff made and sold machines for loading magnetic audio or video tapes into closed cassettes. King's own loading machine did not use the technology of the infringed patent. Nonetheless, the district court awarded damages in lost profits on lost sales of King's machine and its spare parts. The court recognized and the Federal Circuit affirmed that sometimes the most profitable use of a patent is to exclude competing products, rather than to market the invention.

The three cases above illustrate how understanding the underlying economics can improve damages analysis for patent cases. The Federal Circuit stated in *King Instruments* that "[s]ection 284 imposes no limitation on the types of harm resulting from infringement that the statute will redress." A solid economic analysis should identify all the different types of harm that may be redressed.



Senior Economist Tessie Su has worked on a number of matters involving intellectual property and the calculation of damages. She is based in EI's San Francisco Bay Area office.

Challenges Ninth Circuit . . . (Continued from Page 3)

tinguished the case at hand from an efficiency-enhancing merger. Nothing in the pleadings suggested lower prices or enhanced product quality as a result of the Avid / Tektronix alliance. Taking the complaint as true, an antitrust finding for Digital Images would not punish procompetitive conduct by Tektronix or Avid. Similarly, the Appeals Court found what would have happened to Tektronix's product line or Digital Images' business but for the allegedly anticompetitive alliance irrelevant to this motion to dismiss. Presumably, Defendants could move for summary disposition at a later time if they could establish that Digital Images did not suffer from the alliance because the Tektronix product line would have been discontinued anyway.

The Court communicated that Tektronix and Avid may ultimately prevail because of the absence of antitrust injury. For example, the Court left open for later determination whether the Tektronix product was actually removed from the market and whether Digital Images' going out of business was attributable to anything Avid or Tektronix did. In fact, the Court explicitly noted "an antitrust cause of action is susceptible of dismissal at any stage once it does appear factually that the injury complained of was not antitrust in nature." In addition, Tektronix and Avid might later prevail if Digital Images fails to establish other necessary elements of its antitrust claim. Thus, defendants have a number of economics-related defenses available to them.

Jonathan L. Walker is President of EI and Managing Principal at Economists Incorporated's San Francisco Bay Area office. He has worked on a number of matters that require determining the existence and magnitude of antitrust injury.

Economists Incorporated

Suite 400	Suite 250
1200 New Hampshire Ave.	5980 Horton Street
Washington, DC 20036	Emeryville, CA 94608
Phone: (202) 223-4700	(510) 547-6910
Fax: (202) 296-7138	(510) 547-5162

Website: www.ei.com

President, Jonathan L. Walker Editor, Henry B. McFarland
Layout, Gregory E. Wurz

In affiliation with RBB Economics in Europe
The Allen Consulting Group in Australia