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The Year in Review: Economics at the Antitrust Division 2013–2014

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Abstract During 2013–2014, the Antitrust Division of the U.S. Department of Justice brought a wide range of matters to successful conclusions. The three matters that are discussed below demonstrate the diverse set of issues that the division examines every year.

Keywords Mergers · Airlines · Standard-essential-patents · Inductive relief · RAND rates

1 Introduction

During 2013–2014, the Antitrust Division of the U.S. Department of Justice (DOJ) brought a wide range of matters to successful conclusions. The three matters that are discussed below demonstrate the diverse set of issues that the Division examines every year.

The first case discussed was a very high-profile merger in the airline industry that was challenged and then settled by the Division. The Division also successfully litigated a consummated merger in the software industry and the economics of that case will be discussed second. The third discussion focuses on the Division's competition advocacy role with respect to intellectual property rights (IPRs) and, in particular, on the issues that are presented by standard-essential patents.

In this essay, we will briefly explain the economic issues in these cases. Each case presented challenging empirical and theoretical issues that cannot be fully addressed here, but this summary will give insights into the range of issues and analysis being done at the Antitrust Division in order effectively to protect consumers. More details

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on the cases—including complaints, competitive impact summaries, and in some cases trial exhibits—are available at the Division's web site.

2 US Airways' Acquisition of American Airlines

In February 2013 US Airways proposed to purchase American Airlines out of bankruptcy to form a combined entity operating as "New American." The proposed merger would reduce the number of large network carriers (often called "legacy airlines") from four to three.[1] After a thorough investigation, on August 13, 2013, the Antitrust Division filed suit seeking to enjoin the merger. On November 12, 2013, the Division reached a settlement agreement with the parties, which was approved by a federal district court on April 25, 2014.

Since 2005, the U.S. airline industry has undergone significant consolidation. The consolidation "wave" started with the 2005 merger between US Airways and America West, creating today's US Airways. In 2008, Delta and Northwest Airlines merged; in 2010, United and Continental merged; and in 2011, Southwest Airlines and AirTran merged. Since 2005 the number of major airlines tracked by US Airways had dropped from nine to five.[2]

The Complaint in this case alleged both coordinated and unilateral effects. And it alleged that competition would be harmed in a variety of different types of markets. First, the Complaint pointed to the increased concentration of slot authorizations at Washington's Reagan National Airport. Second, the Complaint alleged that systemic coordination among legacy airlines would be enhanced by the merger. Third, the Complaint pointed to lost competition on the specific routes that were served by both US Airways and American. In essence, the Complaint reflected the fact that concentration can and did pose a problem at the level of individual infrastructure assets, at the level of the specific routes that those assets serve, and at the level of the overall system that is made up of all the interrelated routes.

2.1 The Competitive Concerns

2.1.1 Background: Legacy Competition Versus LCC Competition

The academic literature on the airline industry is vast, and one of the major areas of focus is the role that LCCs, such as Southwest Airlines or JetBlue Airways, play. A widely reached finding is that LCCs deliver substantial benefits to consumers on the routes that they serve. Prices are lower and capacity is higher on routes that are served by LCCs;[3] and the evidence suggests that this is because the LCCs are more

[1] The literature commonly distinguishes between legacy carriers and low cost carries (LCCs), which typically include airlines such as Southwest, Jet Blue, Frontier Airlines, Virgin American, Spirit Airlines, Republic Airways, and Sun Country Air.

[2] Complaint paragraph 34 (p. 13).

[3] Comments of the U.S. Dep't of Justice, Notice of Petition for Waiver of the Terms of the Order Limiting Scheduled Operations at LaGuardia Airport, Fed'l Aviation Admin., FAA-2010-0109, March 24, 2010 at

efficient than legacy carriers.[4] Yet legacy carriers are still ubiquitous. While LCCs have expanded, the legacy carriers have not been driven out of business by the entry and expansion of more efficient rivals. Instead, the legacy carriers have recently been imposing higher prices across their systems in the form of new fees for ancillary services—fees that legacy carriers have adopted in seeming lock step while LCCs, as a group, have not.[5]

This somewhat stylized history of the industry suggests that there are significant barriers to further LCC entry or expansion that are insulating large portions of the legacy airline networks from the competitive pressure that LCCs can bring. One of the most tangible examples of such barriers is the difficulty that LCCs have had in getting access to major airports. Major airports in New York City and Washington D.C. are takeoff/landing slot-controlled, and a carrier needs a slot authorization to fly in and out of these airports. Airports in other major metropolitan areas, such as Chicago and Los Angeles, are gate-constrained. The legacy airlines have long dominated gate and slot holdings at these airports, and meaningful entry by LCCs has been notoriously difficult.

2.1.2 System Level Coordination

A principal concern was that the merger would make it easier for the remaining legacy carriers—New American, United, and Delta—to cooperate, rather than compete, on price and service. The structure of the airline industry was already conducive to coordinated behavior among the legacy carriers. For example, on routes where another legacy carrier offers nonstop service, the Complaint explained how American, as well as Delta and United, generally "respect" the nonstop legacy carrier's pricing. That is, the legacy carriers who offer only connecting service price that service at the same level as the nonstop carrier's service notwithstanding the disadvantages that are associated with connecting service.

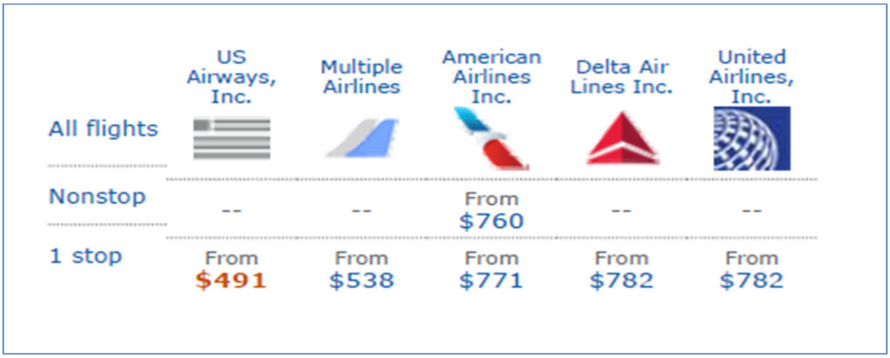
US Airways took a different approach: On routes where there was a monopoly nonstop service offered by another airline, US Airways offered connecting service that was up to 40 % cheaper than other airlines' nonstop service, especially in the 14 days prior to the flight. US Airways called this program "Advantage Fares." The screenshot below is the set of fares that were offered for next-day travel on a specific route[6] and illustrates the benefits of US Airways' Advantage Fare program to passengers.

Footnote 3 continued
A-2 (finding an "economically significant impact from the presence of an LCC on nonstop route-level prices, ranging from 21 to 27 % average price decreases and a 68–118 % median increase in number of passengers depending on the data examined").

[4] E.g., Brueckner et al. (2013) (finding that addition of nonstop LCC service reduces fares by 12–33 % while entry of nonstop legacy service reduces fares by approximately 4 %; similarly, the presence of LCC connecting service lowers fares by as much as 12 %, while additional legacy connecting service lowers fares by typically less than 3 %).

[5] Complaint paragraphs 71–73 (p. 27).

[6] Specifically, this is a screen shot from ITA Software's Airfare Matrix, taken on August 12, 2013, for travel departing on August 13 and returning August 14 from Miami to Cincinnati. "Multiple Airlines" refers to a route where a passenger uses different airlines for their departing and returning flights. Such routings are relatively unpopular and make up an insignificant portion of air travel in the United States.



	US Airways, Inc.	Multiple Airlines	American Airlines Inc.	Delta Air Lines Inc.	United Airlines, Inc.
All flights					
Nonstop	--	--	From $760	--	--
1 stop	From $491	From $538	From $771	From $782	From $782

American is the only airline on this route to offer nonstop service, charging $760. Delta and United do not meaningfully compete. Both charge more for their connecting service than American charges for nonstop service. Thus, on this particular route, a passenger who chose Delta or United would pay more for an inferior product. In contrast, US Airways' fares were significantly lower than American's fares, and offer consumers a real choice. Those consumers who are more price-conscious receive the benefit of a substantially lower-fare option. In this case, a customer who purchased a US Airways one-stop ticket would save $269 compared to American's nonstop service. The benefits from Advantage Fares extended to hundreds of other routes, including those where more than one carrier offered nonstop service.

Why was US Airways pricing differently than the other legacy airlines? The Complaint alleged that US Airways had a structural reason to take this strategy, and that reason would likely go away after the merger. US Airways had hubs in cities that generated less revenue from passengers that were flying nonstop than did the other legacy airlines' hubs. This made US Airways relatively more dependent on revenue from passengers connecting at its hubs than other legacy airlines were at their hubs, and it also made its network structure less vulnerable to the same strategy being used against it—i.e., other legacies filing low one-stop fares on US nonstop routes.

The Complaint alleged that the merger would change the structure of New American's network and reduce its incentives to continue the Advantage Fare program, which had proven highly disruptive to the industry's overall coordinated pricing dynamic. The merged network would be more vulnerable to undercutting by the remaining legacies and would have fewer opportunities to gain from a program like Advantage Fares as sales on the former American nonstop routes would be internalized.

2.1.3 Concentration in Pieces of the System

The Complaint alleged unilateral anticompetitive effects resulting from the dominance of the merged airline at Reagan National Airport in Washington D.C., where it would control 69 % of the takeoff and landing slots, which would be almost six times more than its closest competitor. This would eliminate head-to-head competition at the airport between American and US Airways. It would also effectively foreclose entry or expansion by other airlines that might increase competition at Reagan National. The Complaint also alleged that the merger would eliminate head-to-head competition with nonstop service on 17 domestic routes that represented about $2 billion in annual industry-wide revenues, as well as on more than a thousand routes where one or both offered connecting service, representing billions of dollars in annual revenues.

Recent legacy airline mergers had been followed by substantial reductions in service and capacity on routes that were served by both carriers prior to those mergers. For example, in 2008 when Delta Airlines and Northwest Airlines proposed to merge, they claimed the merger would generate consumer benefits by facilitating schedule improvements, by allowing for a more efficient allocation of aircraft across the network, and through marketing synergies that could make the merged carrier's service more attractive to consumers. Despite promises to the contrary, the combined Delta-Northwest airline instead reduced capacity post-merger, including significant cuts at former hubs in Cincinnati and Memphis.[7]

2.2 The Settlement

Shortly before trial was scheduled to begin, American Airlines and US Airways settled with the Antitrust Division by agreeing to divest assets at major slot- and gate-constrained airports in the U.S. The parties agreed to divest all of American's 104 carrier slots at Reagan National airport (about 12 % of slots at this airport), 34 slots at New York City's LaGuardia airport (about 3 % of LaGuardia slots), and gates at major airports in Chicago, Los Angeles, Dallas, Boston, and Miami. The slots were divested to Southwest, JetBlue, and Virgin America. A number of LCCs will get access to gates at key airports.

2.2.1 The Infrastructure Divestitures have Large Direct Benefits

The settlement significantly eases some of the most intractable barriers to LCC entry and expansion throughout the country. The remedy provides improved LCC access to Reagan National and LaGuardia, two of the most constrained airports that are highly preferred by business passengers. The legacy carriers have long dominated these airports, and meaningful entry by LCCs has been notoriously difficult. The slot divestures at Reagan National directly address the concerns with regard to increased concentration in the market. The gate divestitures in Chicago, Los Angeles, Boston, Dallas, and Miami also expand the presence of LCCs at these strategically important airports. The acquirers will be able to offer increased competition not just on nonstop flights to and from these key airports, but also on connecting flights nationwide.

The consumer benefits of opening access to these key constrained airports will extend beyond the passengers who are directly served at those airports. Given the importance of the airports to business travelers, the LCCs that are acquiring the slots and gates will have a more robust product for business and corporate travel. For

[7] An interesting side note on this issue relates to the methodology that was used by Northwest and Delta to defend their claims. The "QSI methodology" compares forecasted demand for the merged carrier under predicted post-merger schedules to that under no-merger schedules to generate estimates of consumer benefit. In retrospect, it can be shown that this methodology is inadequate for merger evaluation, in part because there is no reliable way to predict post-merger schedules. Actual post-merger schedules were significantly different from what was predicted.

example, as a result of the divestitures, Virgin America—one of only a few airlines to start domestic service in recent years—will enter LaGuardia, expand at Reagan National, and may expand at other constrained airports as the gate divestitures progress. As such, it will supplement its West Coast presence with service to major East Coast business destinations (and potentially additional destinations around the country), thereby establishing greater scope and scale.[8]

The existing economic evidence supports these findings: Substantial consumer benefits have proved particularly meaningful when LCCs are able to gain access to slot-constrained airports. For example, in 2010, Southwest acquired 36 slots at Newark Liberty International Airport pursuant to a divestiture remedy that addressed competition concerns that arose from the merger of United Airlines and Continental Airlines. Southwest entered five routes with nonstop service at Newark, and the average fare for these routes over the three years since Southwest's entry has decreased compared to pre-entry levels and decreased 17 % relative to changes in national average fares during this period. Passengers flying on these five nonstop routes after Southwest began service saved about $75 million annually compared to what they would have had to pay prior to Southwest's entry.[9] In addition, Southwest was able to incorporate Newark service into its overall domestic network, offering low fares on connections to Newark from over sixty cities.[10] In this way, the creation of only a few nonstop routes led to 60 connecting routes. A similar multiplier effect is expected with the current divestitures.

Similarly, in 2010, JetBlue had used some of its limited number of slots at Reagan National to enter the Reagan National to Boston route, and average fares dropped by 39 % year-over-year while passengers carried on this route nearly doubled. As reported in the Complaint, US Airways estimated that after JetBlue's entry, the last-minute fare for round-trip travel between Reagan National and Boston—a key business route—dropped by over $700.

2.2.2 The Pieces Also Enhance Competition at the System Level

Despite the fact that the assets being divested are inherently focused on specific airports, they also enable greater system-wide competition from LCCs that addresses the broader harms that were likely to result from the merger. Strengthened by increased

[8] Virgin America has announced its interest in beginning service from Dallas's Love Field to major business destinations throughout the country. Press Release, Virgin America, "Virgin America Plans Dallas Expansion: Airline wants to bring more business-friendly, low-fare flight competition to Dallas with new flights from Love Field," available at http://www.virginamerica.com/press-release/2014/virgin-america-plans-dallas-expansion.html.

[9] USDOT Origin & Destination Survey. Percentage changes in average fare and number of passengers are calculated using data from the first full quarter after entry by Southwest and, as a baseline, data from four quarters before that entry. To determine annual consumer savings, the number of passengers who flew on each route for each of the four quarters following Southwest's entry is multiplied by the dollar amount of the corresponding year-to-year fare change for that quarter. The annual amount is the sum of the four quarters for all of the routes. Finally, the national airline ticket price is calculated using DOT data, available at http://www.rita.dot.gov/bts/airfares/national/table.

[10] USDOT Origin & Destination Survey, CY 2012.

access to major capacity-constrained airports, the LCCs will be able to fly more people to more places at more competitive fares, which should force legacy carriers to respond to that increased competition. By increasing the scope of the LCCs' networks, the divestitures will also bring the consumer-friendly policies of the LCCs to more travelers across the country. For example, neither Southwest nor JetBlue currently charges customers a first-bag fee while all of the legacy carriers charge $25 per bag. In these ways, although the remedy will not create a new independent airline or guarantee the continued existence of Advantage Fares on all routes, it will impede the industry's evolution toward a tighter oligopoly and deliver benefits to millions of consumers that could not be obtained even by enjoining the merger.

These pro-competitive benefits compare favorably with those afforded by preserving competition between US Airways and American. For example, the benefits of LCC entry and expansion enabled by the remedy will extend to a larger number of passengers and deliver a greater overall benefit to consumers as compared to the Advantage Fare program. The Advantage Fare program is particularly beneficial to only a narrow segment of passengers: price-sensitive business passengers who purchase less than fourteen days prior to departure and are willing to take connecting instead of nonstop service. As reported in the Complaint, approximately 2.5 million roundtrip passengers purchased Advantage Fare tickets in 2012, representing about 4 % of the roughly 62.5 million roundtrip passengers who traveled on the routes where Advantage Fares were offered that year.

By comparison, Southwest, JetBlue and Virgin America are expected to offer over four million seats per year—enough capacity for two million roundtrip passengers—at Reagan National through their use of the divested slots (which is over two million more seats than US Airways and American would likely have offered absent the remedy). Similarly, the acquirers of the LaGuardia slots are expected to offer over 1.5 million seats per year—750,000 roundtrips—through their use of the divested slots at that airport, and millions of additional passengers will benefit from the new LCC service that will result from the airport gate divestitures.[11] All of the passengers who will be served by LCCs as a result of the divestitures will benefit from lower fares, not just the last-minute shoppers that were the primary focus of US Airways' Advantage Fare program. Benefits will also extend to passengers who fly on legacy carriers on routes where the remedy injects new LCC competition because the legacy carriers will likely lower their prices in response to the new competition (Tan 2013).

Another source of harm that was alleged in the Complaint was the loss of head-to-head competition between US Airways and American on city-pair routes throughout the country. American and US Airways provided competing service on 17 nonstop routes and hundreds of connecting routes. Although the remedy will not replicate the competition lost in each of these routes, it will allow LCCs to launch more than 17 new nonstop routes and to enter and expand service on connecting routes across the country, almost all of which will be in competition with New American. Travelers who fly on these routes will likely benefit from substantial savings because LCC competition typically has a much larger effect on fares than does legacy competition.

[11] Annual seats calculations are based on the number of divested daily slots at each airport and the average number of seats on the aircraft that the slot acquirers typically use.

2.2.3 The Bottom Line

The remedy enables LCCs to acquire otherwise unobtainable slots and gates at key airports in the U.S. and to fly millions of new passengers per year to destinations throughout the U.S. It introduces new low-cost capacity and service on numerous routes around the country; and, accordingly, it enhances the ability of LCCs to thwart industry coordination among the legacy carriers. The competitive significance of the remedy is reflected in the value being paid by LCCs for the divested assets—over $425 million—which is unprecedented in the airline industry and among the most substantial merger remedies in any industry.

3 Bazaarvoice's Acquisition of PowerReviews

On June 12, 2012, Bazaarvoice acquired PowerReviews for a purchase price of $168.2 million, including cash and non-cash consideration. The transaction did not trigger the obligations of the Hart–Scott–Rodino Act, which would have required the parties to file notice of the transaction and would have prevented them from closing the deal until US antitrust authorities had been able to examine it.[12] The Antitrust Division opened an investigation on June 14, 2012 and filed suit on January 10, 2013, alleging that the transaction violated Section 7 of the Clayton Act. The case proceeded to trial in September 2013.

On its face, the case against this acquisition seems straightforward: As is detailed in the Complaint, Bazaarvoice and PowerReviews were the only two significant commercial competitors that offered product ratings and reviews (PRR) platforms. These platforms are used by retailers and manufacturers to collect, organize, and display consumer-generated product ratings and reviews online. These consumer-generated ratings and reviews represent feedback from consumers with regard to their experiences with a product and have become a staple of online retailing. The reviews provide highly relevant, product-specific information that increases sales, decreases product returns, and attracts more consumers to a retailer's or manufacturer's website.[13] Competition between Bazaarvoice and PowerReviews had significantly benefitted customers.[14]

[12] The HSR Act has various thresholds that govern which transactions need to be filed. These thresholds are indexed to change over time, but in 2012 a transaction priced between about $68M and $273M also had to involve parties of a minimum size; the two merging parties in this case were below that minimum size. However, as this case demonstrates, just because a transaction does not need to be filed in advance does not immunize it against a challenge and, ultimately the possibility of being reversed.

[13] Bazaarvoice and PowerReviews both offered sophisticated PRR platforms with enhanced features, such as moderation, analytics, and syndication of comments. It is worth noting that the enhanced features involve very different forms of production than basic software functionality. For example, moderation involves staffing a service to review comments and make sure they are appropriate before they appear on the client's web site. And syndication requires establishing a network to allow manufacturers to share, or 'syndicate,' product ratings and reviews onto their retailers' web sites.

[14] For example, the evidence suggested that, as a result of price competition between the two firms, manufacturers and retailers obtained substantial discounts. (Complaint, paragraph 42–46.) Additionally, the competition led to new features and improved functionality. (Complaint, paragraph 50–54.)

But, like many tech companies, the parties in this case wanted to argue that the competitive landscape they face is special. The larger tech firms could easily enter at any moment. Or, if not them, virtually anyone else with some programming ability down to the oft-cited "two guys in a garage" could enter. And, as is also commonly argued when each sale is a bidding event, anyone who can conceivably make the product can submit a potentially winning bid. By that logic, everyone should have equally small competitive significance. The framework of merger analysis allowed the Division to test these claims and for a federal district court judge to reject them.

Another staple of tech-firm arguments is that customers can supply themselves—which, implicitly, could leave no scope for harm if competition is lost. There was some competitive significance to self-supply in this case, so measuring the scope of that significance was of great interest and presented a few practical issues. But, in the end, Judge William H. Orrick was convinced that there was plenty of room for commercial competition to matter: On January 8, 2014, Judge Orrick ruled that Bazaarvoice had indeed violated Section 7 of the Clayton Act by acquiring PowerReviews. (See U.S. vs. Bazaarvoice, Inc., 2014 U.S. Dist. LEXIS 3244 (2014).)

3.1 A Surplus of Entrants

A large part of Bazaarvoice's defense to counter the evidence of intense pre-merger competition relied on the fact that there would be sufficient entry from big and small entrants to discipline a price increase.

3.1.1 Big Entrants

Large tech firms, such as Google or Salesforce, or technologically sophisticated retailers, particularly Amazon, likely could produce the software that is the core of a PRR platform. After all, Amazon virtually invented this feature of online retailing for its own use and has more recently been engaged in selling other infrastructure support to other retailers as part of its online marketplace. And, even aside from Amazon's special place in this market, it probably is true that Google or a similar firm could develop software with the same type of functionality as Bazaarvoice or PowerReviews. The time and expense to produce such software likely is not what would keep such a firm out of this market if it wanted to enter.

But, of course, that leaves open the question of whether such firms would want to enter: whether the returns justify the cost not only of developing such software but also of developing and maintaining the associated services and of marketing the reliability of a new product.[15] At trial, Bazaarvoice tried to say not only that these firms likely would enter but also that their current presence as possible entrants that could respond so rapidly to any supra-competitive price meant that they were already

[15] Arguably, a firm like Google could have cost advantages in marketing or in developing a reputation to the extent that a new product benefits from the reputation that the firm has already established in other products, but there would still be costs that are specific to each new product and, in particular, to the services that are associated with a new product.

effectively acting as industry participants.[16] That is, these firms should be treated as "rapid entrants" in the terms of the Horizontal Merger Guidelines' guidance on what firms should be attributed shares of the current market.[17]

As Judge Orrick reasoned, though, the entry question is not only whether a firm has the necessary assets but also whether it has "strong incentives to enter".[18] For example, in this case it is not clear that Amazon would have an incentive to provide one of the defining features of its own retail service to a competitor.[19] It is hard to imagine Amazon's profiting from supplying its competitors with the means to make their online retail outlets more like Amazon and therefore to increase the likelihood of a sale on those websites instead of on Amazon.

Additionally, it is erroneous to believe that just because a company has the resources to enter a market it is necessarily likely to do so. Whether those resources are high-tech know-how or lots of cash on hand, entering a new market is generally a ponderous process, and there should be some significant sign that the would-be entrant is actually likely to react before they seriously affect competition in a market. That gap between "could enter" and "would enter" is demonstrated clearly in this case. Despite the technological know-how of Google and the like, there was little evidence to suggest that Bazaarvoice and PowerReviews felt constrained by those tech firms' looming presence over the PRR space.[20]

3.1.2 Small Entrants

Another frequent argument in software cases is that it only takes a few coders working out of their garage to write code that can provide some degree of relevant functionality. Bazaarvoice made a variant of this argument by pointing to new competitors that had entered in the past few years and claiming that they would offer an equivalent constraint as PowerReviews did to Bazaarvoice. But, those products are not the same, and customers appear to see a relevant difference, as is supported by the market shares and contemporaneous accounts of competition.[21] Even in response to a price increase from the merged firm it is not clear that customers would switch to these other products, which did not provide the same functionality, services, or reputation.

3.1.3 Entry is Difficult, Whether Big or Small

Coding the relevant functionality is only one aspect of providing a successful product that could compete with Bazaarvoice post-merger. There were other constraints that would prevent both the big and small entrants from winning customers.

[16] Opinion, paragraphs 142 and 222.

[17] Horizontal Merger Guidelines, Section 5.1.

[18] Horizontal Merger Guidelines, Section 9.

[19] Opinion, paragraph 228.

[20] Opinion, paragraphs 235–236.

[21] Opinion, paragraphs 185–208.

The main barrier to entry that was identified at trial was Bazaarvoice's syndication network.[22] Bazaarvoice had a significant number of customers on its network. Additionally, the number of customers who were choosing to syndicate was growing rapidly.[23] The benefit to manufacturers of syndication is that their content will be displayed on more sites (and in particular on retail sites where customers make purchase decisions.) The benefit to retailers is that they have more content, increasing the likelihood that a purchase will be made. This network significantly distinguished Bazaarvoice from other existing or potential competitors and made it difficult for other competitors to win customers from the merged firm. In turn these competitors would be unable to reach the scale to have a competing network.

Other barriers to entry included switching costs, which can be seen by the high renewal rates that both Bazaarvoice and PowerReviews experienced. It takes a substantial investment of time and money to switch PRR platforms that is not worth it for consumers without a significant benefit.[24] These high switching costs make it difficult for a competitor—current or potential—to gain a foothold in the market. Additionally, other barriers that were cited in Judge Orrick's decision include the cost of duplicating moderation services and the need to develop analytic services and a reputation for selling a quality PRR platform.[25]

In short, Judge Orrick recognized that there is a significant difference between the minimal effort needed to write a piece of code that does basic PRR platform functions and the time and effort to establish a commercial product of competitive significance.

3.2 Bidding Markets

Prices for PRR platforms are the result of individual negotiations between each enterprise customer and suppliers.[26] These negotiations loosely fall within the economic models of bidding and are the foundation for analyzing the market as one in which price discrimination makes competitive conditions affect each customer differently. In applying the model that has been used in the academic bidding literature to a merger analysis, it is important not to lose sight of the differences amongst suppliers that are important for describing competitive significance, but are often assumed away in the models that focus on other elements of the bidding interaction.

3.2.1 Information Exchanged in Negotiations

Typically the customer communicates with suppliers to learn about PRR platforms and their specific solutions; these early communications reveal information about the customer, the needs of the customer, and any customer-specific concerns. Suppliers

[22] Opinion, paragraphs 241–248.

[23] Note that PowerReviews did not have as robust syndication network but had a set of retailers that suggested that it could get there.

[24] Opinion, paragraphs 253–254.

[25] Opinion, paragraphs 256–259.

[26] Complaint, paragraph 28.

can use this information to revise the price and features of bid proposals appropriately. One consideration of the bid price offered by the supplier is the competitive alternatives that are available to the customer, given the features that they are looking for in a PRR platform.[27] For example, in these interactions with customers a commercial supplier could determine whether self supply is likely to be an attractive option for the customer (i.e., if the customer currently purchases from a commercial provider).

This scenario seems to have been present in most bids between Bazaarvoice and PowerReviews before the acquisition. Bazaarvoice's data on sales opportunities that it ultimately won suggested it often knew that the only competitor was PowerReviews.[28] Also, internal documents that were written by company executives prior to the deal make clear that each firm viewed each other as their only significant commercial competitor and that this competition was often the driver in pricing negotiations with customers.[29]

All of these facts are consistent with an economic theory of bargaining where the firms reasonably have some public knowledge of which bidders are the best fit for a specific customer. That theory suggests that the merged firm would be able to charge a higher price to customers who lost their second-best alternative and that the size of the price increase would depend on how much more inferior the third-best option was for these customers.

Nevertheless, there is always some room for imperfect information. After all, some customers—particularly those not as interested in a full feature set—continue to choose self-supply, and there is no obvious characteristic that definitively identifies these customers.[30] Even if the firms were unable to identify specific customers that saw Bazaarvoice and PowerReviews as their top two options, there could still be room for harm just based on expectations of how likely one was viewed as the most significant competitive option for the other.[31]

3.2.2 Historical Market Shares are not Reflective of Competitive Significance?

Bazaarvoice argued that given the fact that each sale is functionally a bidding market, market shares that were derived from past sales are not an accurate reflection of the ability of smaller competitors to bid effectively to win business and therefore to restrain prices. Furthermore, Bazaarvoice argued that each of the several existing competitors and rapid entrants had an equal likelihood of winning a customer, suggesting that each should be assigned an equal share.[32] While the sales in this industry do happen in a

[27] Complaint, paragraph 29.

[28] Opinion, paragraph 268–273.

[29] For examples see Opinion, paragraphs 36–39 and 42–43.

[30] Although, it probably should be noted that self-supply is being adopted less frequently over time and that this trend would affect beliefs about the likelihood that any future customer would make that choice.

[31] For example, Bazaarvoice might have decided that the chances of losing a few more customers to self-supply was worth the payoff from a general price increase if it thought enough customers really only had PowerReviews as an option. Or, Bazaarvoice might have decided to eliminate the lower-priced PowerReviews product altogether if it expected most customers would migrate to the Bazaarvoice option.

[32] Opinion, paragraph 174.

form of bidding market, these are not homogeneous products where each bidder has an equal opportunity to win a customer's business. PRR platforms are a differentiated good that requires experience and reputation in the relevant market—especially for sales of enhanced functionalities.

The Division's economic expert (Carl Shapiro) employed a number of different calculations to measure market shares based on sales. The resulting description of market structure was remarkably consistent: Bazaarvoice was the leading commercial supplier, followed by PowerReviews and by a number of customers that chose to self supply. The fringe firms won very few sales.[33] This is consistent with the other evidence that suggested that the fringe firms offered a product that was less competitively significant relative to Bazaarvoice and PowerReviews because they did not provide the same network, or the same level of service.

It was clear to Judge Orrick that the different commercial suppliers were not equally competitive and that the evidence did not suggest that each supplier had an equal chance of winning a bidding competition.[34] Market shares that were based on historical sales therefore did, according to Judge Orrick, provide a useful measure of competitive significance.

3.3 Measuring Self-supply

At several points in the discussion we have mentioned self-supply of PRR platforms. It is worth noting that the importance of self-supply varied widely across different customers. There is no denying that Amazon's proprietary PRR platform is a significant element of online retailing. That may not matter to the price that is paid by a Bazaarvoice customer that is not large enough to justify a similar investment, but it is a phenomenon that should be recognized in any analysis of the industry. The key question is how to define or measure the scope of the market that is particularly dependent on competition between commercial PRR platforms. Answering that question turned out to have several challenging complications in practice.

The primary difficulty was that the inclusion of self-supply meant that it was not possible to simply get data from different suppliers to calculate market shares. And, other sources of data about the market as a whole had typical limitations. For example, a commonly-referenced source of market share information is a periodic report about the top 500 Internet retailers ("the IR500").[35] But, while these retailers account for as much as 80 % of online retail commerce in the United States and Canada, the list does not include many manufacturers and small retailers who also buy PRR platforms.[36]

Another difficulty of including self-supply is the question of what weight best reflects the competitive significance of a sales opportunity that did not happen because

33 Opinion, paragraph 164.

34 Opinion, paragraph 175.

35 The IR500 was used in the regular course of business by the merging firms. (Opinion, paragraphs 150–152.)

36 Note, however that the network effects in syndication arrangements suggest that retailer market shares may also reflect competitive significance among manufacturers.

the customer chose to self-supply instead. It is often desirable to weight customers by the volume of sales that they represent for the merging parties. The default weighting of treating each customer as equal could be misleading if one PRR provider was particularly good at winning large accounts, for example.

The Division variously looked at who supplied PRR functionality to the IR500, the Fortune 500, and the IR1000. And, to allow for some weighting of customers by size, a proxy measure was also constructed among the online retailers in the IR500 by using the amount of retail commerce that each one performed. Assigning shares using the IR500 weighted by customer size suggested that in-house solutions accounted for about 40 % of the market and that the merged firm's market share was about 55 %; the other methods led to similar conclusions.[37]

Judge Orrick was convinced that self-supply could be recognized as part of the market with a limited influence that could be reasonably measured and that still allowed for significant competition that would be lost in a merger between the main commercial suppliers.

4 Competition Advocacy: Intellectual Property

While the Antitrust Division's challenges of high-profile mergers are front-page news, much of the Division's work is far less visible. In particular, the Division devotes considerable resources to "competition advocacy". For example, the Division might consult with another agency about the competitive implications of possible new regulations. Such efforts complement enforcement of the antitrust laws. Competition advocacy promotes market conditions that are conducive to vigorous competition and, in many cases, may head off violations of the antitrust laws before they take place. One area in which the Division has been particularly active is where intellectual property and antitrust policy intersect.

Well-defined intellectual property rights (IPR) help to ensure an efficient level of innovation. Like any productive activity, innovation costs time and money that would not be spent without some assurance of proper economic return on the investment. It may be tempting to think that competition policy should promote weak IPR. For example, in the short-run, keeping imitators of an innovation out of the market could lead to higher prices. But, the long-run result of weak IPR is not low prices on the same stream of innovative goods. Without an assurance of a reward for innovating, the initial investments would likely never happen. So, the hypothetical competition never happens as there is no innovation to be copied.

While a strong IPR regime is, therefore, critical to the development of the economy, it is also possible for IPR to be abused. Ideally, a strong IPR regime is complemented by competition among inventions: Competition works to ensure that only truly innovative inventions get the largest rewards. To that end, the Antitrust Division has long tried to identify systemic issues where competitive checks are not succeeding in this role and to work with various stakeholders to improve the system.

37 Opinion, paragraphs 157–159.

4.1 Background: Innovation in a Standards World

In today's economy, innovation does not occur in a vacuum. Instead, innovations build on and complement each other. Stark examples of this are the interoperability standards that have been developed in communications industries: These standards comprise a collection of technologies that have been combined to create a unified method of interacting or carrying out some function. Examples of such standards include the 802.11 Wi-Fi standards, as well as mobile telephony standards, such as 3G and 4G. Because these complex standards involve the combination of many disparate technologies, their creation typically requires the participation of a multitude of innovators. Moreover, given that standards must not only be created but adopted, successful standards require input from implementers downstream: e.g., device manufacturers in the case of 802.11 and 3G/4G. A standard-setting organization (SSO) is an organization that collaboratively develops and promulgates standards.[38]

Both patent holders and downstream implementers participate in SSOs as members; often, many participants may be both patent holders and implementers. Their engineers collaborate to choose technologies for the standard. Because this process involves some winnowing of the technological field—perhaps moving from three alternative compression algorithms to the single algorithm that is incorporated in a standard—it often confers market power on the chosen technologies.

To see this last point, consider a negotiation after a telecommunications standard has been adopted between a handset manufacturer and the owner of a standards-essential patent (SEP). Further assume that the handset manufacturer has already sunk the investments necessary to comply with the standard and that the patent truly is essential: There is no commercially feasible workaround available to the handset manufacturer for a product within this standard.[39] In this circumstance, the SEP owner could effectively demand the handset manufacturer's entire profit from the latter's standards-compliant handset—on the assumption that the SEP owner can make a take-it-or-leave-it offer, has made no ex ante licensing commitments, and holds an SEP that is valid and enforceable. Anticipating this potential hold-up, handset manufacturers will be reluctant to adopt the standard, and it will likely fail.

To address the hold-up problem and promote the success of the standard, many SSOs ask patent holders to commit voluntarily to license their SEPs on reasonable and non-discriminatory, or RAND, terms.[40] However, as highlighted by recent litigation, there is considerable uncertainty over what precisely RAND means, as well as the scope of injunctive relief that may be available to the owner of a RAND-encumbered

[38] For example, the Institute of Electrical and Electronics Engineers (IEEE) developed the 802.11 Wi-Fi standards, among others. Hundreds of collaborative standard-setting groups operate worldwide, with diverse organizational structures and rules. We will simply refer to these as SSOs.

[39] That may seem to be implied by the name "standard-essential patent" but we'll make the assumption rather than deal with some of the conflicts of opinion that can develop, for example, when an SSO relies on members' declaring which of their patents are SEPs.

[40] Specific requirements vary. For example, some organizations have tried to require royalty-free licensing as compensation for inclusion in the standard. However, RAND requirements, or the related FRAND requirement that adds "fair" to the list of adjectives, continue to be the most common solution to the problem.

SEP.[41] Encouraged by the Antitrust Division and the Federal Trade Commission, work has been undertaken at various SSOs—including the IEEE, the European Telecommunications Standards Institute (ETSI), and the International Telecommunication Union's Telecommunication Sector (ITU-T)—to clarify their patent policies in several respects.[42] The primary clarifications at issue are (1) the scope of injunctive or exclusionary relief when a patent is subject to a RAND licensing commitment, and (2) the meaning of "reasonable", and "non-discriminatory".[43]

4.2 Injunctive and Exclusionary Relief

A fundamental right of a property holder is the right to exclude. A landowner can, in most circumstances, wall off her property and prevent others from trespassing on it. Similarly, owners of intellectual property are typically under no obligation to license it for use by others. But the standard-setting process depends on members' forgoing some of their rights in order to get products to market more quickly than traditional competition among patents and alternative standards might have allowed. That rush to market leaves standard implementers on the hook if their products can be pulled off the shelf while the terms of licenses are worked out.

A credible threat of injunctive relief—i.e., a court order that pulls an implementer's products from the shelves—dramatically alters the negotiating dynamic between the SEP owner and the implementer. The prospect of making no sales if negotiations break down may induce the implementer to accept a royalty far in excess of that which would be negotiated but for the injunction threat. To that end, the injunction threat could be used to circumvent the main safeguard that SSOs have relied upon to mitigate the hold-up problem. A commitment to license on RAND terms could, for example, turn out not to constrain royalty levels at all if the threat of injunctions leads all implementers to accept royalty terms that, but for their acceptance, would not satisfy the RAND commitment. As SSOs work to clarify their patent policies, this issue is receiving renewed debate.[44]

Some participants in the debate about the appropriateness of injunctive relief argue that the injunction threat is necessary both to bring the implementer to the negotiating

41 E.g., Apple Inc. versus Motorola, Inc., 757 F.3d 1286 (Fed. Cir. 2014); Microsoft Corp. versus Motorola, Inc., No. C10-1823JLR, 2013 WL 2111217 (Apr. 25, 2013); In re Innovatio IP Ventures, LLP Patent Litig., No. 11 C 9308, 2013 WL 5593609 (N.D. Ill. Oct. 3, 2013).

42 See, for example, Renata Hesse, Deputy Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Justice, Six "Small" Proposals for SSOs Before Lunch, Remarks as Prepared for the ITU-T Patent Roundtable (Oct. 10, 2012), available at http://www.justice.gov/atr/public/speeches/287855.pdf.

43 Other issues that have also been clarified in this process include the closing of a potentially significant loophole by ensuring that licensing commitments transfer to subsequent owners of an SEP.

44 By committing to license on RAND terms, an SEP owner acknowledges that compensation through licensing revenues for uses that implement the standard is sufficient in most cases. Under the 2006 *eBay* standard, it has been difficult for patent holders in the United States to get injunctive relief for the infringement of patents that are subject to such commitments. Courts generally have found that money damages were adequate to remedy the infringement and that patent holders were unable to prove they would be irreparably harmed in the absence of injunctive relief. See, e.g., Apple, Inc. versus Motorola, Inc., 2014 U.S. App. LEXIS 7757 (2014).

table and to avoid "reverse hold up." We will address each of these arguments in turn: First, the idea that the implementer will never agree to terms without the threat of injunction is plainly inconsistent with the bargaining literature (Osborne and Rubinstein 1990). To be sure, the injunction threat affects the outcome of bargaining between the licensor and licensee; but bargaining does not somehow break down absent that threat. Because litigation is costly, the licensee that believes that it has received a RAND offer will prefer to pay a negotiated RAND rate rather than incur the legal and opportunity costs that are associated with litigation. Importantly, any delay in negotiating a license does not clearly benefit either side. Each additional unit sold will eventually be part of a damage calculation that is awarded for the infringement, so the expected damage per unit becomes an implicit marginal cost (or marginal revenue to the patent holder). Unless there is reason to believe that full damages will not be awarded or that they will not be paid, the implementer and the SEP owner should have similar incentives to eliminate from these costs the uncertainty and fixed costs of litigation.

Second, the reverse hold-up argument is a variant of the standard hold-up argument in which the SEP owner has committed to a standard and made investments to ensure its viability. At this stage, implementers can hold up the SEP owner and extract the value of those investments. Although this theory has theoretical merit, it should be recognized that both SEP owners and implementers invest in standards to ensure their success. Giving the threat of injunction to one party distorts the negotiating balance between the SEP owner and the implementer and risks driving royalties well above those that would obtain in a hypothetical ex ante negotiation.

An extension of these arguments is that the availability of injunctive relief is necessary to motivate innovators to participate in standard-setting activities. This seems unlikely. As is explained in a joint statement on patent policy that was issues by the DOJ and the U.S. Patent and Trademark Office:

> [SEP owners] that also sell products and services related to the standard benefit from expanded marketing opportunities, and patent holders that focus on licensing their inventions benefit from an expanded source of revenues. These incentives encourage patent holders to contribute their best technology to the standardization process.[45]

The joint policy statement goes on to argue that injunctive relief to remedy infringement of SEPs that have been encumbered with a RAND-licensing promise should only be available in rare circumstances. That is, the balance of interests that are established at the outset of a standard setting process should be maintained throughout the ensuing negotiations.

4.3 RAND Rates

A proper RAND rate will balance the incentives of both patent holders and implementers. After all, the success of a standard requires participation by both patent hold-

45 U.S. Dep't of Justice and U.S. Patent and Trademark Office, *Policy Statement on Remedies for Standard-Essential Patents Subject to Voluntary F/RAND Commitments*, at 5 (Jan. 8, 2013).

ers and implementers. But, academics, practitioners, and market participants have expressed a range of views on how precisely to define a RAND rate to strike this balance.

Many academic papers have argued that the appropriate concept to use is to ask what royalty rate would have been set had it been set "ex ante": if the SEP holders had been forced to negotiate a rate before their technology was adopted as part of the standard.[46] In other words, to ask what would be the result from a hypothetical negotiation between the patent holder and the implementer before the standard is adopted and before the implementer has sunk investments to develop a product that relies on the patent holder's technology. At this stage, the implementer would be willing to pay no more than the incremental value of the patent holder's technology over the next-best alternative. Faced with any demand to pay in excess of this, the buyer would simply turn to the alternative technology and pocket the savings.

In practical application, the ex ante framework has to adjust to real-world issues.[47] For example, when companies begin to invest resources based on the expectation that an emerging standard eventually will be adopted, the timing of the hypothetical negotiation can become an issue. Also, the SSO may have chosen between competing groups of technologies. And, of course, bargaining theory can often only establish a range of outcomes to the hypothetical negotiation instead of a specific royalty.

Some papers have claimed that the patentee should receive more than its incremental value. Otherwise it has an incentive to stay outside the standard setting process, which could reduce the benefits to society of the standard. But that consideration has to be balanced against the risk of excessive royalties and the potential for these to distort long-run R&D investment decisions. Systematically rewarding SEPs with higher average royalties increases the risk that hold-up concerns lead the standard to fail outright or that the standard comes to market at inflated prices. And a system that artificially inflates the returns to SEPs will tend to draw capital away from other investments in contexts where the return would be subject to ex ante negotiations and hence not pay a premium due to hold up.

Moreover, the benefit of inducing patentee participation may be less than suggested by the *ex-post* essentiality of its patents. If a given patentee does not commit to license on RAND terms at the time that the standard is set, the standard-setting body may modify the standard to eliminate a potential hold-up problem before a particular patent becomes essential. This flexibility to modify a nascent standard may eliminate any need to compensate patentees beyond the incremental value of its technological contributions.

[46] See, for example, Lemley and Shapiro (2006) or Farrell et al. (2007) for more discussion of this framework.

[47] This conceptual framework is arguably seen in the hypothetical negotiation employed by U.S. courts where a patent holder seeks as damages for infringement an award of "a reasonable royalty" (see Georgia-Pacific Corp. versus U.S. Plywood-Champion Papers Inc., 446 F.2d 295 (1971), for a set of factors that are commonly used to implement the ex ante negotiation). However, as noted by District Court Judge James L. Robart in Microsoft Corp. versus Motorola, Inc., 2013 U.S. Dist. LEXIS 161762 (2013), the factors that were used in the Georgia Pacific case may need to be modified to fit the special circumstances of an SSO. For example, one factor would allow the patent holder to discriminate against its competitors downstream, which would clearly be at odds with the non-discriminatory component of a RAND pledge.

Of course, that argument could also be taken to extremes. The patent holder's technology was likely chosen for a reason. Unless the SSO members literally flipped a coin to decide which technology was incorporated, the fact that the patent holder's technology was chosen to be incorporated in a standard indicates that the technology has value above that of the next-best alternative. That is, the incremental value should generally be positive. But, the existence of that next-best alternative at the time that a standard is being set should limit the need systematically to induce participation of patent holders beyond compensating for the incremental value.

As governments and SSOs around the world grapple with the definition of reasonable and non-discriminatory, the Division has played, and will continue to play an active role in trying to help sort through the issues and to coordinate on the proper balances for a RAND regime.

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