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A BRIEF ANALYSIS OF POLICY AND LITIGATION

WINTER 2014

Tenth Circuit Applies Profit Sacrifice Test

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The Tenth Circuit recently upheld a lower court ruling and rejected Novell's complaint that Microsoft had engaged in illegal monopolization. Microsoft had withdrawn its offer to share the pre-release version of its Windows 95 operating system and its application programming interfaces with companies, such as Novell, that made applications. That withdrawal allegedly delayed Novell's release of applications compatible with Windows 95, giving Microsoft's own applications an advantage. Novell argued that the refusal to deal was anticompetitive and violated Section 2 of the Sherman Act.

Microsoft's conduct could be argued to affect both the market for operating systems and the markets for applications programs. An applications monopolization claim was barred by the statute of limitations. Novell, however, claimed that Microsoft's conduct unlawfully monopolized operating systems. Novell argued that because its applications could run on multiple operating systems, the availability of those applications made it easier for consumers to switch operating systems, which threatened Microsoft's alleged monopoly in that market.

Novell argued that Microsoft's behavior raised Novell's costs, but the court rejected raising rivals' costs as a test of anticompetitive behavior. The court ruled that whether Microsoft's refusal to deal was anticompetitive should be judged with a profit sacrifice test. This test, which a number of economists have advocated, asks whether a refusal to deal causes a firm to sacrifice short-term profits and would be irrational if it did not tend to reduce future competition.

Novell alleged that Microsoft sacrificed short-term operating system profits to foreclose future competition in operating systems. The court found that the profit sacrifice test must be based on Microsoft's combined profits from both applications programs and operating systems. Competition from rival applications involved a trade-off for Microsoft. Having more applications that worked with Windows 95 would enhance demand for that operating system, but competition from rival applications would reduce the demand for Microsoft's own applications. Because of this trade-off, reducing or delaying competition from rival applications could reduce Microsoft's operating system profits but raise its application profits.

The court did not find evidence that Microsoft's decision reduced its combined short-term profits on operating systems and applications. Thus, the court ruled that the refusal to deal did not meet its test for anticompetitive behavior. The court also found that the profit sacrifice test would not have reached a different result if applications profits had been ignored. The evidence did not show Microsoft had sacrificed short-term operating system profits.

Also In This Issue

E-Commerce Tax Implications of the Marketplace Fairness Act

Laura A. Malowane and Stephen E. Siwek consider the effects of the Marketplace Fairness Act, which would enable states to collect sales taxes on e-commerce sales. E-commerce sales made by a vendor with no business connection to a state currently are not subject to that state's sales taxes. The Marketplace Fairness Act would not affect all the $225 billion in annual e-commerce sales. Some states do not have sales taxes or do not assess those taxes on all sales. Moreover, state sales taxes are already collected on many e-commerce sales. Also the proposed Act allows for a small-seller exception for retailers with e-commerce revenue below some amount. The extent of that exemption will largely determine the amount of additional taxes to be collected due to the Act.

Economic Modeling and the Modernization of the National Airspace System

James W. Bono discusses the role of economic modeling in NextGen, the Federal Aviation Authority's plan to modernize the National Airspace System. The backbone of NextGen is a migration from ground-based radar navigation to satellite-based navigation. This migration requires aircraft to be equipped with automatic dependence surveillance-broadcast (ADS-B). Adoption of ADS-B requires substantial investments by the airlines, which raises the question of how to encourage airlines to make that investment. To develop appropriate policies to encourage airlines to adopt ADS-B, it has become increasingly important to build and analyze sophisticated economic models of the airline equipage decision process.

E-Commerce Tax Implications of the Marketplace Fairness Act

Laura A. Malowane and Stephen E. Siwek

Retail e-commerce has grown into an industry with over $225 billion annually in U.S. sales. Under current law, these sales escape state sales taxes if they are "remote" sales, those made by a vendor with no business connection to the state. By some estimates, allowing these remote sales to escape taxation means that between $5 and $13 billion in potential tax revenue remains uncollected. The Marketplace Fairness Act would enable states to collect these revenues by requiring retailers with annual e-commerce revenue over a given amount to collect state sales tax on remote sales. The Senate passed this act last May, and the House Judiciary Committee is now reviewing it. Determining the effects of the Act requires answering two questions: first, what factors need to be accounted for when assessing the volume of potential tax revenue from e-commerce sales; and second, how would the exception for small sellers affect this assessment?

The tax exemption for e-commerce results primarily from a 1992 U.S Supreme Court decision *(Quill Corp v. North Dakota*, 504 U.S. 298 (1992)) in which the Court struck down a North Dakota law that imposed tax collection on out-of-state vendors. The Court reasoned that with over 6,000 potential tax jurisdictions in the United States, allowing taxes on out-of-state vendors would impede interstate commerce. To overcome this problem, the Marketplace Fairness Act only grants states the authority to collect such taxes if they have simplified their sales tax laws. This simplification can be done either by meeting some mandates listed in the bill or by adopting the simplified tax measures of the Streamlined Sales and Use Tax Agreement (SSUTA).These simplified tax measures include such things as uniform tax definitions, rate simplification and state funding of the administrative costs. Thus far, 22 states are fully in compliance with the SSUTA.

> "while the smallest retailers may represent a minority of total online commerce, they conversely represent a majority of potential incremental taxes."

The Marketplace Fairness Act would not make all $225 billion of annual e-commerce sales subject to sales taxes. Currently, five states (Alaska, Delaware, Montana, New Hampshire and Oregon) do not have a sales tax, and thus e-commerce in these states would not be taxed. These states represent approximately 3% of all U.S. commerce.

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Moreover, states with sales taxes often do not assess those taxes on all sales. E-commerce transactions in products exempted from sales tax would not be taxable. Different states have different laws in this regard, but sales of groceries, prescription items, and contacts lenses are commonly nontaxable.

Moreover, many e-commerce sales already are subject to state sales taxes and thus would not be affected by the Act. Specifically, a company's e-commerce sales are already subject to taxation in a particular state if that company has a link or "nexus" to that state. A company is said to have a nexus if it maintains a sufficient presence of employees or property in the state. For example, if a company has a retail store in a particular state, then all online sales of that company to consumers living in that state are subject to taxation. Staples, the second largest U.S. online seller after Amazon, has retail stores in all states other than Hawaii and already is collecting sales taxes on over 99% of its online sales. The largest online seller in the United States, Amazon, currently collects taxes in 13 states because it has distribution centers or other forms of nexus in those states. In addition to sales taxes being paid on some transactions because of retailer nexus, consumers pay sales taxes directly on other transactions. For example, because of registration and licensing rules, sales taxes likely are already paid on online motor vehicles transactions. Thus, the Act would not add any additional tax revenue from those transactions.

In its present form, the Act allows for a small-seller exception for retailers with e-commerce revenue of less than $1

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Economic Modeling and the Modernization of the National Airspace System

James W. Bono

Demand for air travel is projected to increase dramatically over the next several decades. The Federal Aviation Administration (FAA) estimates that revenue passenger miles among US commercial carriers will increase from 826 billion in 2013 to 1,462 billion in 2033, an increase of 77%. Boeing forecasts an even greater growth rate for air passenger traffic and also estimates that the number of airplanes in service will reach 41,240 by 2032, more than double the 20,310 in service in 2012. To accommodate the increased demand while maintaining safety and improving efficiency, the FAA has developed NextGen, a plan to modernize the National Airspace System (NAS).

While NextGen focuses on developing a variety of technologies and policies for introduction to the NAS, the backbone of NextGen is a migration from ground-based radar navigation to satellite-based navigation. To achieve this migration, aircraft must be equipped with automatic dependence surveillance-broadcast (ADS-B). ADS-B has two parts; ADS-B Out transmits aircraft number, location, altitude, and velocity relative to the earth, and ADS-B In receives this information. In an airspace with ADS-B Out equipped aircraft, an ADS-B In equipped aircraft will see a complete picture of its surroundings.

> "optimal policies depend on airline decisions about which aircraft to equip, their routes, and their schedules."

The FAA predicts a number of tangible safety and efficiency benefits from the adoption of ADS-B. Because ADS-B allows aircraft to see other aircraft and even ground vehicles that are also ADS-B equipped, it will improve safety by reducing the risk of runway incursions and violations of separation assurance. It also extends coverage to remote areas where radar is unavailable, improving navigation and flight safety in those areas. ADS-B improves NAS efficiency by allowing pilots to fly more directly between origin and destination, saving time and fuel. In addition, controllers will eventually be able to reduce the minimum separation between aircraft, increasing NAS capacity.

To achieve these predicted benefits, the FAA has developed a plan for the adoption of ADS-B. This plan is well underway. The FAA has already prepared much of the ground infrastructure for ADS-B and will complete that infrastructure

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in 2014. In addition, the FAA has issued a mandate that aircraft must be equipped with ADS-B Out to fly in certain airspaces by January 1, 2020. The mandate airspaces include those through which commercial aircraft regularly fly. Thus, the mandate will effectively require domestic commercial airlines to equip their entire fleets.

The adoption of ADS-B is not without issue. Equipping an entire commercial fleet is a major capital investment. Factoring in the cost of equipment and the cost of having the aircraft idle while the equipment is installed, a single commercial aircraft can cost as much as $900,000 to retrofit. This investment is especially costly when considering active fleet sizes of major US carriers: American (633), Delta (740), United (700), Southwest (577), US Airways (355), and JetBlue (191). Individual airlines could pay more than $500 million to retrofit their fleets, not including the cost of training pilots to fly with the new technology.

To help with costs, the FAA has proposed ideas such as loan guarantees to support equipage financing. Industry leaders, however, say that financing is already inexpensive and what they really need is for the FAA to deliver infrastructure and policy that guarantees significant efficiency gains. In this respect, airlines, like most businesses, are averse to the risk that accompanies major changes in their business environment.

To better understand the uncertainty about the benefits of ADS-B equipage, it has become increasingly important to build and analyze sophisticated economic models of the airline equipage decision process. Unlike previous models, the new models are both probabilistic and strategic. As such, they yield insights about a number of issues. For example, the predicted efficiency gains depend on the details of the

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Marketplace Fairness Act

million annually. That is, any sellers with less than $1 million of online sales would not be required to collect taxes on such sales. The exemption is based on the assumption that e-commerce taxation would place an unfair tax burden on small vendors. Some retailers, most notably eBay, argue that this small-seller exception should be raised to $10 million. With a small-seller exception set at $1 million, only 1% of online retailers would be subject to taxation. If this threshold were raised to $10 million, only approximately 0.1% would be subject to taxation.

It is a straightforward process to estimate the amount of e-commerce sales on which sales taxes are already paid and the amount remaining for taxation for the largest of retailers, since a wealth of information is available for these companies. Determining the amount of incremental tax for the remaining almost 5 million retailers, however, is a more involved statistical process. While an estimation of this amount is beyond the scope of this article, it is reasonable to state that as retailers get smaller, the portion of e-commerce sales on which taxes are already paid declines. The larger online retailers are likely to have nexus in more states due to the presence of bricks and mortar retail stores or distribution centers. Overall, while the smallest retailers may represent a minority of total online commerce, they conversely represent a majority of potential incremental taxes.

Ultimately, the magnitude of additional taxation to be collected from the passing of the Marketplace Fairness Act will largely be determined by the existence and extent of a small-seller exception. Excluding small sellers from any new e-commerce tax collect requirement would significantly reduce the amount of new tax revenues that could be collected.

National Airspace System

policies that the FAA enacts to give preferential treatment to equipped aircraft. Even if the FAA adopts the policy that equipped aircraft are able to leapfrog non-equipped aircraft in merging scenarios (preferential merge), the resulting time savings do not guarantee efficiency gains due to the extra fuel burn required to take advantage of the preferential treatment and the fact that on-time flights are not generally rewarded for early arrivals. Another problem is that without the right policies in place, ADS-B would confer a free-rider benefit to non-equipped aircraft because the NAS becomes more efficient as a whole.

In general, optimal policies depend on airline decisions about which aircraft to equip, their routes, and their schedules. Moreover, airlines will make those decisions strategically based on the FAA's policies and the decisions of other airlines. Additional uncertainty arises in this decision process from asymmetries in airline networks and costs. There is even uncertainty about what, if any, penalties the FAA will impose for not equipping. All told, it is very difficult for airlines to predict how the ADS-B equipage mandate will play out.

In light of such uncertainty, airlines could choose to delay adopting ADS-B to keep their options open. That is, they may delay equipping until some of their uncertainty is resolved, either because they will be able to observe how ADS-B equipage affects their competitors or because the FAA changes its policies. The FAA does not want airlines to delay the adoption of ADS-B because of the central role the technology plays in the NextGen plan. Developing economic models to better understand the decisions airlines face is an important step in creating NextGen policies that engage airlines and encourage the appropriate adoption of new technology.

EI News and Notes

Settlement in Automotive Lighting Litigation

Taiwanese aftermarket replacement automotive lighting manufacturer TYC Brother Industrial Co. Ltd. and its U.S. distributor Genera settled with the direct purchaser class to exit multidistrict price-fixing litigation. They were the last defendants to settle in the litigation. Plaintiffs alleged that four overseas manufacturers of auto lights and their distributors fixed prices on 5,500 products for seven years. William C. Myslinski was retained as damages expert for TYC and Genera. He was assisted by Michael G. Baumann and Allison I. Holt. TYC and Genera were represented by the law firm of Morgan Lewis & Bockius.

Dartmouth-Hitchcock Health System's Economic Contributions Studied

A report prepared by David A. Argue, Lona Fowdur and Caroline S. Hanson shows that Dartmouth-Hitchcock Health System contributed $2.1 billion and 16,000 jobs to the New Hampshire economy in 2011. This contribution is equivalent to 1.7 times the system's actual revenues and 1.8 times its employment. The analysis relies on an Input-Output model to track linkages that connect the system to other industries that support its production. The report also assesses supplemental activities that Dartmouth-Hitchcock undertakes to fulfill its core mission and that provide additional benefits.

Study of Copyright Industries

The International Intellectual Property Alliance recently released *Copyright Industries in the U.S. Economy: The 2013 Report*, which was prepared by Stephen E. Siwek of EI. This study updated 13 previous studies, which Mr. Siwek also helped prepare. In 2012 the core copyright industries added over $1 trillion in value to the U.S. economy, accounting for almost 6.5% of the total U.S. Gross Domestic Product. Those industries employed nearly 5.4 million U.S. workers, nearly 5% of total private employment, and grew at an annual rate of 4.7%, more than twice the rate of growth of the U.S. economy.

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