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## **"Comments to the Federal Communications Commission - Antitrust, Two-Sided Markets, and Platform Competition: The Case of the XM-Sirius Merger."**

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## **Antitrust, Two-Sided Markets, and Platform Competition: The Case of the XM-Sirius Merger**

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### **Abstract**

Antitrust oversight is crucial for maintaining vibrant competition. Evaluating mergers of platforms carrying digital content such as the proposed merger of XM and Sirius, however, poses new challenges for antitrust officials. In particular, companies like these are platforms in two-sided markets that must find ways to attract subscribers and content. Both subscribers and content providers can choose among a variety of platforms. Moreover, the platforms themselves are dynamic in that they could potentially carry any digital information, not just the particular services they currently offer.

In short, a merger analysis of competing platforms that considers only a single component in this complex market is likely to reach an incorrect conclusion. In the case of the XM-Sirius merger, officials should consider not only subscribers, but also content providers, competing platforms, platforms that are potential competitors, and services the platforms in question may provide in the future that they do not today.

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## 1. Introduction

Competition among providers of communications services has brought enormous benefits to consumers and to the economy. Antitrust policy can help ensure a vibrant marketplace in which many firms compete and barriers to entry are low. Several factors, however, complicate merger analysis in many of these services.

First, many distributors of digital services operate platforms that must attract two sides of a market that exhibit network externalities in order to succeed. Analyzing a merger of platforms in a two-sided market is complex because the analysis must take into account both sides and the interrelated effects of a change in price on either side. Second, many of these platforms compete for participants in both sides of the market, further complicating an analysis. Finally, the platforms themselves are dynamic and because they can carry any information that can be translated into ones and zeros, they can change their business models to provide different types of services. Neither economic theory nor empirical research yet sheds much light on the competitive effects of platform mergers under these conditions.

The proposed merger between XM and Sirius provides an excellent opportunity to discuss these issues. These two companies currently provide radio services primarily over satellites.<sup>1</sup> Both firms are platforms that must get subscribers and programming content on board, and be able to charge in such a way that they can cover their costs.

The content they distribute, however, is digital information. Consumers can obtain that content through other platforms and programmers can distribute their content through other platforms. Providers of valuable programming, such as the Howard Stern show, which airs on Sirius, have many options when deciding how best to distribute their material. Moreover, not only do these platforms compete with other platforms for radio subscribers and content, the digital nature of the material they distribute means that they are not locked in to providing radio services. Similarly, other platforms distributing digital information could offer radio services if there were a market for it.

Thus, when evaluating the proposed merger between XM and Sirius, antitrust officials face the difficult problem of sorting out a host of complex issues that have not yet been resolved theoretically or tested empirically.

In this paper I discuss these issues and explain some of the complexities in evaluating a merger like the one proposed by XM and Sirius. In particular, I first discuss two-sided markets and also consider the question of who, among the two sides and the platform, might hold any market power. I then turn to the issue of platform competition and the implications of a dynamic platform. I conclude by noting that antitrust officials should at least take note of these factors when evaluating the proposal and that they should be cognizant of the broad number of firms and industries with which these platforms interact and compete.

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<sup>1</sup> Both Sirius and XM also have terrestrial repeaters, primarily in urban areas.

## 2. Two-Sided Market Analysis

Satellite is a relatively new platform for delivering digital content to subscribers. As such, satellite operators face the classic problem of a platform in a two-sided market: they need subscribers to attract content, but they need content to attract subscribers.

A two-sided market is a market that requires a platform for different groups to interact and exhibits network externalities such that more participants from one group will encourage additional participants from the other group.<sup>2</sup> For example, in order to succeed, credit card companies need some minimum number of cardholders and merchants. Without enough participating merchants few people will want to carry the credit card, and without enough people carrying the credit card few merchants will bother to accept it. Similarly, companies that make video game consoles need games that will run on their systems and consumers to buy the systems. Additional games available for a given system increases demand for the system and higher demand for the system increases incentives for people to invest in building games to run on the system.

Platform providers must figure out how to attract a sufficient number of members of the different groups and how to charge them in ways that will cover the costs of building and operating the platform. Because demand characteristics typically differ on the different sides of the market and because participation of one side affects the other side's demand for the product, it is not immediately obvious what the platform should charge each side. To succeed, the prices charged to each side must together cover the costs of operating the platform, though the price charged to one side may be significantly higher than marginal cost and the price charged to the other significantly below.

The difficulty in building a platform for a two-sided market—indeed, the main reason to consider a market to be two-sided as opposed to a standard market in which a firm procures inputs and sells final goods—is the presence of network externalities. As explained above, the larger the number of participants from one side, the more incentive there will be for the other side to join, and vice versa. In other words, one problem in building the platform to such markets is finding ways to internalize these externalities.

As Hagiu (2006) explains, one way to internalize externalities is for the platform operator to build one side of the market in order to attract the other side.<sup>3</sup> Video game makers, for example, do this when they introduce a new console by creating several new games themselves to ensure that gamers will buy the new product.

Similarly, satellite platforms must have sufficiently attractive content in order to attract

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<sup>2</sup> See, for example, Rochet, Jean-Charles and Jean Tirole. 2004. "Two-Sided Markets: An Overview" and Evans, David S. 2003. "The Antitrust Economics of Multi-Sided Platform Markets." *Yale Journal on Regulation*, Volume 20.

<sup>3</sup> Hagiu, Andrei. 2006. "Proprietary vs. Open Two-Sided Platforms and Social Efficiency." AEI-Brookings Joint Center Working Paper: Washington, DC.

subscribers. Because of the need for content, the satellite companies have invested heavily in building and attracting programming.<sup>4</sup> This investment is typified by Sirius's much ballyhooed contract with shock jock Howard Stern, estimated to be upwards of \$100 million per year.<sup>5</sup> Thus, at the moment, these platforms can generally charge only one side (subscribers) and must pay heavily to get the other side (programming) “on board.”

### *Merger analysis in a two-sided market must consider both sides*

Because each side of the market reacts to conditions and prices faced by the other, a merger analysis cannot look at either side of the market in isolation. In other words, an analysis must consider the joint effects of both sides of the market in order to estimate the net effects of a merger.

Merger analyses typically employ what is known as the SSNIP test: could the merged entity impose a small but sustainable, non-transitory increase in prices? That is, would the merged firm be able to profitably increase prices by (typically) five or ten percent and sustain those prices for some period of time? The SSNIP test is relevant in an analysis of a merger involving a two-sided market, but is more difficult to implement since a change in prices to one side will affect prices and demand on the other side as well.

For example, if a price increase by satellite operators reduced the number of subscribers then the platform would become less valuable to programmers. Because the potential audience has shrunk, sports leagues and celebrities like Howard Stern may demand higher payments to stay with the smaller network. Similarly, if a price increase boosted the platform's profits, the owners of popular exclusive programming may demand higher payments. In other words, any potential additional profits earned by the merged firm's price increase may be quickly taken by the programmers.

### *If there is market power, who holds it?*

The reaction of programmers to a subscriber price increase raises another relevant issue to consider when evaluating a platform merger in a two-sided market: If there is market power, who holds it?

In the case of unique programming, such as Howard Stern or live sporting events, the platform that distributes the programming—especially one with relatively few subscribers—is unlikely to hold much market power. The large amount Sirius and XM pay for exclusive distribution rights is a testament to that point.

<sup>4</sup> <http://investor.sirius.com/downloads/2006AR.pdf>

<sup>5</sup> [http://money.cnn.com/2004/10/06/news/newsmakers/stern\\_sirius/index.htm](http://money.cnn.com/2004/10/06/news/newsmakers/stern_sirius/index.htm)

The platform is valuable only to the extent that it can attract content that subscribers will value. Programmers, however, can choose among a large number of platforms to distribute their content, potentially allowing them to extract most of the rents from the distribution platform they choose.

In addition to facing analytical difficulties associated with two-sided markets, the platform itself faces competition, which has implications for antitrust analysis. The next section discusses platform competition.

### 3. Platform Competition

Modern communications platforms are unique in that they can distribute anything that can be broken down into bits of data. More standard platforms serve very particular purposes. Credit cards, for example, only facilitate financial transactions between buyers and sellers. While the number of possible financial transactions is almost endless, the platform serves a single purpose.

Platforms distributing digital services, however, are more general. Subject to bandwidth constraints, they can distribute radio, video, phone calls, email, and anything else that can be converted into ones and zeros.

This generality of the platform has two implications. First, consumers choose among a wide range of platforms from which to get various services.<sup>6</sup> Second, over time many of these digital platforms can change the types of services they provide. As a result, barriers to entry into any particular service are likely to be low and firms can change their offerings fairly quickly to respond to changes in market conditions.<sup>7</sup>

#### *Platforms compete for subscribers and content*

Content distribution platforms compete for both sides of the two-sided market. They compete with each other for customers and with each other for content that will attract customers. Consumers and content providers have access to a large and growing number of platforms, which can be substitutes for each other.

Consumers choose among satellite providers, standard terrestrial radio offerings, Internet radio, and even personal music delivery platforms like iPods. And the number of such platforms continues to increase. Sprint offers streaming radio over its high-

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<sup>6</sup> This phenomenon is called "multihoming" in the two-sided markets literature. See Rochet, Jean-Charles and Jean Tirole. 2004. "Two-Sided Markets: An Overview" and Roson (2005).

<sup>7</sup> If the platform is used to provide programming, then the costs of entry will depend in part on the costs of acquiring this programming. In that case, the analysis must focus also on competition in programming.

speed wireless services,<sup>8</sup> and is building out a WiMax network that may be able to support streaming music and video.<sup>9</sup> A new company called Slacker is poised to offer music using existing Ku band satellite services.<sup>10</sup>

DirecTV and Dish currently distribute XM and Sirius, respectively, over their networks, demonstrating that those video satellite services represent other possible platforms for delivering radio programming. If a merged XM-Sirius were to increase prices in a way that could potentially earn monopoly rents, DirecTV or Dish could conceivably choose to offer their own programming to take advantage of that entry opportunity.

Content providers, meanwhile, choose among a wide variety of platforms over which they can distribute their content. As discussed earlier, XM and Sirius attempt to differentiate themselves from each other and from other platforms by bidding for exclusive programming at great cost. XM and Sirius, however, do not own that content. Howard Stern at Sirius or Oprah and Major League Baseball at XM could negotiate new contracts with other platforms. If a merged XM-Sirius increased its prices, an existing platform such as DirecTV or Dish may see an opening to provide similar services and make a better offer for that programming.

The point here is that not only do subscribers have choices of platforms, so, too, do the providers of valuable content. Analyzing the net effects of a merger on all aspects of this competition is complicated.

### *Digital platforms can compete by changing their business model*

Another complication in a merger analysis in this situation is that the platforms themselves are not static. A platform that delivers digital content can change its business model to provide services that the market may value more highly than its current offerings.<sup>11</sup> As a result, a firm offering radio today may offer a different service tomorrow.

Consider, for example, Ku band satellite, which operates in the microwave band of frequencies. The Ku band was originally used by broadcast networks to provide video feeds to their affiliates.<sup>12</sup> Today, while still primarily used for broadcasting satellite television, it is poised to become a platform that also provides radio and music services to subscribers through a new company called Slacker, as discussed above.

Because the services a platform can offer are not fixed, an antitrust analysis should

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<sup>8</sup>[https://manage.sprintpcs.com/Manage/portal!/ut/p/\\_s.7\\_0\\_A/7\\_0\\_AFHH/.cmd/ad/.ar/sa.spf\\_ActionListen/r/c/6\\_0\\_310/.ce/7\\_0\\_50NJ/.p/5\\_0\\_18L/.d/2?PC\\_7\\_0\\_50NJ\\_spf\\_strutsAction=%212fselectFolder.do%213fbreadCrumbLevel%3D0%2126folderId%3DMultimedia#7\\_0\\_50NJ](https://manage.sprintpcs.com/Manage/portal!/ut/p/_s.7_0_A/7_0_AFHH/.cmd/ad/.ar/sa.spf_ActionListen/r/c/6_0_310/.ce/7_0_50NJ/.p/5_0_18L/.d/2?PC_7_0_50NJ_spf_strutsAction=%212fselectFolder.do%213fbreadCrumbLevel%3D0%2126folderId%3DMultimedia#7_0_50NJ)

<sup>9</sup> [http://news.com.com/2102-7351\\_3-6103119.html?tag=st.util.print](http://news.com.com/2102-7351_3-6103119.html?tag=st.util.print)

<sup>10</sup> [http://blog.wired.com/music/2007/03/slacker\\_steals\\_.html](http://blog.wired.com/music/2007/03/slacker_steals_.html)

<sup>11</sup> Regulatory rules may make such changes difficult. For example, regulatory rules may limit certain spectrum to certain uses. Such regulations may not be economically efficient.

<sup>12</sup> <http://www.tech-faq.com/ku-band.shtml>

consider not only the services currently offered, but also those that might be offered in the future. In other words, how does a merger affect innovation in the platform and in the content that can be provided through it?

Satellite firms now use their bandwidth and technology to deliver primarily radio programming, but there is no reason they would continue to do so forever. DirecTV and the Dish Network now primarily distribute video programming but have expressed interest in providing high-speed Internet services.<sup>13</sup>

Similarly, XM and Sirius primarily distribute radio programming, but could provide other services in addition to (or ultimately instead of) radio. Indeed, Sirius recently announced an agreement with Chrysler to provide video in new minivans.<sup>14</sup> A combined XM-Sirius might together have enough spectrum to compete more directly with cable, satellite television companies, and perhaps other wireless companies.

Antitrust analysis must therefore address several crucial questions. Would one or both of the firms choose to provide services other than radio if they do not merge? Similarly, what would a merged entity be able to offer that neither could offer by itself? Does a merger make such changes more or less likely? How would such changes affect consumers over time?

The essential point is that a digital platform cannot necessarily be defined by the services it provides at the moment. A more dynamic definition must also take into account not only other platforms that could provide the service in question, but also other ways the platform could be used in the future.

#### **4. Conclusion: Antitrust Analysis In the Presence of Platform Competition and Two-Sided Markets is Complex**

In the economics literature on two-sided markets, the ability for at least one side to choose among platforms is called "multi-homing." As several studies have noted, multi-homing complicates analysis and has ambiguous implications on price structures.<sup>15</sup> Roson (2005) notes in a survey of the literature on two-sided markets that "adding multihoming makes the formulation and analysis of two-sided markets considerably more complex."<sup>16</sup> To keep the analysis tractable, many authors just assume, on the

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<sup>13</sup> The DBS providers bid for spectrum presumably for the purpose of providing broadband Internet connections, but were unsuccessful in the AWS auction. Recent reports suggest that these providers may ally with Clearwire to provide broadband services.

[http://www.hollywoodreporter.com/hr/content\\_display/business/news/e3i6337374c02990aa351ec4a62c892f1e1](http://www.hollywoodreporter.com/hr/content_display/business/news/e3i6337374c02990aa351ec4a62c892f1e1)

<sup>14</sup> [http://www.usatoday.com/money/autos/2007-03-29-siri-chrysler-tv\\_N.htm](http://www.usatoday.com/money/autos/2007-03-29-siri-chrysler-tv_N.htm)

<sup>15</sup> See, for example, Rochet, Jean-Charles and Jean Tirole. 2004. "Two-Sided Markets: An Overview" and Evans, David S. 2003. "The Antitrust Economics of Multi-Sided Platform Markets." *Yale Journal on Regulation*, 20.

<sup>16</sup> Roson, Roberto. 2005. "Two-Sided Markets: A Tentative Survey." *Review of Network Economics*, 4:2, pp. 142-160.



basis of specific characteristics of the market at hand, which market side multihomes.”

In short, two sided markets make antitrust analysis complex and platform competition and multi-homing further complicate the analysis. To make matters worse, little theoretical research has explicitly investigated the case in which both sides of the market can multi-home, almost no empirical research on two-sided markets yet exists, and, to my knowledge, no research has addressed dynamic platforms.

In the long run, more research is necessary to carefully consider these issues given the increasing importance of communications technologies and the ways in which their delivery is converging. In the short run, merger officials should take care to carefully take into account both sides of the platform when considering proposed mergers, recognize that the definition of the platforms themselves is rather dynamic, and whether any market power that exists is held by the platform or by one of the sides that uses the platform.

In short, a merger analysis of competing platforms that considers only a single component in this complex market is likely to reach an incorrect conclusion. In the case of the XM-Sirius merger, officials should consider not only subscribers, but also content providers, competing platforms, platforms that are potential competitors, and services the platforms in question may provide in the future that they do not today.

Such issues are likely to arise with increasing frequency given the growing number of digital platforms and services. Researchers and policymakers should put more effort into developing ways of rigorously analyzing antitrust decisions under these conditions.

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