The competitive landscape for satellite radio

Tim Farrar

April 6, 2007

Telecom, Media and Finance Associates, Inc.
3705 Haven Avenue, Suite 113
Menlo Park, CA 94025

Disclosure

This research note is intended solely for informational purposes and to provide industry insight for clients of Telecom, Media and Finance Associates (TMF Associates). This note has not been commissioned, funded or instigated by XM or Sirius or any other party to the proposed merger of the two companies, but is a personal reaction to Carmel Group's April 2007 report. The author and TMF Associates have never consulted or worked for XM or Sirius, and have no financial interest in the outcome of the proposed merger, although TMF Associates undertook an unrelated consulting project for Mobile Satellite Ventures (a former owner of XM) in 2005 and the author is an XM subscriber.

About the author

Tim Farrar has over 14 years consulting experience across the satellite and telecom industries, having worked for leading technical and strategy consultancies in both the UK and US. He has an M.A. and a Ph.D. from the University of Cambridge, UK and runs his own consulting company, Telecom, Media and Finance Associates, Inc. (www.tmfassociates.com), based in Menlo Park, CA, which specializes in the technical and financial analysis of satellite ventures. Since November 2006 he has also been President of the Mobile Satellite Users' Association (www.msua.org).

Tim is acknowledged as the leading expert in business planning for hybrid mobile satellite-terrestrial networks (referred to as Ancillary Terrestrial Component or ATC technology), of which XM and Sirius represent the first commercially successful implementations. He published the first comprehensive research report on this subject in 2006 and over the last decade has consulted for almost all of the leading players in the Mobile Satellite Services (MSS) sector. He can be contacted by email at tim@tmfassociates.com or by phone on +1 650 839 0376.

The competitive landscape for satellite radio

There has been much speculation about whether the proposed merger of XM and Sirius will be approved by regulators, because of the perceived monopoly status of a combined company within the satellite radio market. There are good arguments on both sides, particularly with regard to consumer protection and ensuring market access for new technologies in the future, but the research paper published on April 3 by Carmel Group, and funded by the National Association of Broadcasters (NAB), ludicrously[1] overstates the case for opposing the merger and fundamentally misinterprets the competitive environment for satellite radio.

One of the highlights of Carmel Group's research paper is a so-called "ping-pong" chart of responses by XM and Sirius to each other's actions. An analogous chart can easily be constructed showing purported competitive actions and reactions for satellite radio versus other technologies, as we have done at the end of this note. However, interpreting cause and effect in these circumstances is fraught with difficulty, and it is far more instructive to consider whether and how alternative technologies can substitute for satellite radio, either on their own or in combination with one another, an analysis which in our view ultimately requires detailed studies of consumer attitudes to these services.

As we have discussed previously[2], satellite radio is almost entirely a vehicle-based service and without a very substantial investment in terrestrial repeater networks, satellite radio operators will not be able to offer a service to handheld devices which meets the expectations of cellphone users for widespread indoor coverage. In addition, the market for delivery of live video to vehicles is unlikely to expand beyond high end minivans, RVs and buses (since video may only be viewed by passengers), and so has very limited potential compared to the consumption of radio by solo commuters. As a result, we consider that the potential alternatives to satellite radio are, in essence, those technologies which provide (either live or recorded) in-vehicle audio content (i.e. talk, music, sports and information services such as news, traffic and weather).

---

[1] We use this word advisedly given that Carmel Group refers to Sirius and XM's position (that the competitive landscape presently includes all forms of terrestrial radio, as well as digital services such as MP3 devices and music-to-cellular telephones) as "ludicrous" (http://www.nab.org/xert/xertimages/corpcomm/pressrel/040307_CarmelGroup_WhitePaper.pdf at page 3), despite their having previously acknowledged in an October 2005 article that these technologies are precisely the main competitive alternatives to satellite radio (http://carmelgroup.com/publications/document/growing_another_telecom_pie/)

[2] See our September 2006 article on "Radio or TV? The role of satellites in mobile broadcasting" at http://www.tmfassociates.com/MobileBroadcast.pdf

The most obvious alternative to satellite radio is terrestrial AM or FM radio, which comes pre-installed in virtually all vehicles and is free-of-charge. Clearly the amount of programming varies, depending on where the consumer is located across the US, since a wide range of channels are provided in urban areas, but rather less variety is available in rural areas[3]. Nevertheless, since we understand that a significant majority of usage for satellite radio is by commuters driving into urban areas (which incidentally is not what XM or Sirius's original business plan projected), many consumers who are unwilling to pay a premium for satellite radio content obviously have an adequate choice of terrestrial radio channels[4]. Alternatively, for those users who wish to listen to commercial-free music, it was reported in January 2005 that almost 50% of iPod users had purchased accessories which allow for in-car connections, while a January 2006 analyst report predicted 28M US cars would have iPod connections integrated into their audio systems by 2011[5]. Given that there are 30M+ iPod users in the US alone[6], the number of consumers already able to listen to an MP3 player in their car (either through an integrated audio connection or an after-market accessory) may well exceed the current total of 14M subscribers to XM and Sirius[7].

One assertion made by Carmel Group in their report is that the FCC may (and indeed should) look primarily at the delivery mechanism (as it did in the case of the proposed 2002 merger of Echostar and DirecTV, where DVRs and DVDs were not considered primary competitors to satellite TV), and thereby exclude MP3 devices from consideration as potential competitors to satellite radio. While it is absolutely true that few if any TV viewers would want to view only recorded DVDs as a substitute for their entire satellite or cable TV system, DVD rental services such as Netflix are regarded by some viewers as a perfectly valid alternative to some premium channels like HBO (if these consumers are willing to wait to view that content) and certainly substitute for many potential pay-

---

[3] However, there are over 10,000 commercial AM and FM radio stations in the US, compared to less than 2000 individual TV channels, and around 800 local TV news stations

[4] Indeed it was reported in October 2006 that almost half of car owners with pre-installed satellite radios (OEM installations) did not expect to continue their subscriptions, see http://jointcommunications.blogspot.com/2006/10/subscription-sales-cooling-for.html

[5] See http://www.appleinsider.com/article.php?id=9 and http://money.cnn.com/2006/01/12/technology/ipod_auto/index.htm

[6] See http://www.ipodobserver.com/story/30474 which indicates 27M PC-based iTunes users in January 2007

[7] Bizarrely, despite this situation, Carmel Group claims in its report that MP3 devices are only part of the future competitive landscape and have no impact on the current market for satellite radio

per-view movie purchases[8]. Similarly no-one would consider totally removing the AM/FM radios built into cars in favor of integrated MP3 devices. Instead these devices complement terrestrial radio, enabling a much greater range of content (i.e. a mixture of live talk/news/traffic/weather from the radio and recorded, commercial-free music from the MP3 player) to be available to the consumer at any time (and allowing pre-recorded content to be accessed far more easily than with earlier generations of playback technology such as CDs and audio tapes). As such, MP3 devices go a long way towards leveling the playing field between terrestrial radio and satellite radio, without consumers having to pay any ongoing monthly subscription fee. Whether free-to-air radio can compete financially with satellite radio in terms of certain premium live content (particularly sports programming and talk personalities) is an interesting issue to consider, but a similar dynamic has been played out between free-to-air and subscription-based TV channels for much of the last two decades, and arguably many companies which introduce new technologies have a tendency to overpay to acquire new subscribers in their initial growth phase, and subsequently reduce their spending to more rational levels as the ultimate market potential becomes clearer (marketing spend during the dotcom bubble being a classic example).

Returning to the comparison with the FCC's assessment of the satellite TV market, in our view the appropriate question that should be asked, is whether free-to-air TV *plus* pre-recorded content on DVDs could be an adequate substitute for satellite and cable TV. In that case the answer from the marketplace is clearly no, since today the overwhelming majority of TV households in the US receive their TV feeds via satellite or cable. In contrast, for in-car audio, well over 90% of the 240M+ cars in the US now receive only free-to-air terrestrial radio supplemented by recorded music (primarily delivered via CD and audio tape players today) and have not seen the need to pay for satellite radio services. As a result, we believe that Carmel Group's assertion that competition is limited because few or no other subscription audio devices are being installed into new automobiles may be testament more to the power of this non-subscription-based service combination than to satellite radio's ability to lock-up the automobile market against other subscription-based alternatives[9].

---

[8] Reportedly 15% of Netflix's DVD rentals are for content previously broadcast on television (see http://internet.seekingalpha.com/article/5259), not including pay-per-view movies

[9] Although XM and Sirius have exclusive agreements with various automobile manufacturers, these are directed primarily at one another, and to date do not appear to have prevented carmakers from developing other enhancements to their in-car entertainment systems

In conclusion, the competitive environment for satellite radio is far less clear-cut than Carmel Group asserts. In our view, an argument could be made that the *combination* of terrestrial radio and devices such as MP3 players represents a valid substitute for satellite radio, both today and in the future. Detailed analysis of satellite radio subscriber profiles and attitudes versus those of terrestrial radio and iPod listeners might well provide additional insight into these issues, and we expect that XM and Sirius will undertake such studies with a view to demonstrating the structure of the in-car audio market to the FCC.

Nevertheless several existing FCC regulations aimed at ensuring competition, such as the restrictions on one company controlling both satellite radio licenses, would have to be changed for the merger to proceed, and we believe one path the FCC might consider is to ensure that the regulatory landscape allows other in-car audio services to be developed, as both the technology and marketplace evolve. For example, it is unclear how easy it would be for a new operator to enter the in-car audio market with a competing subscription-based service in the future. Access to spectrum would be one critical factor, though some designated Mobile Satellite Services (MSS) spectrum could perhaps be used for competitive satellite radio services, and (perhaps more likely) broadcast services for cellular networks such as MediaFLO could also easily address the in-car market (charging a low incremental fee) if they carry sufficient premium audio content. Secondly, if a common technical standard is developed for satellite radio, then if any future prospective new entrant to the satellite radio market is given the right to license this technology at a reasonable royalty rate, that might allow some of the economies of volume production derived by XM and Sirius to carry over to new entrants (although since such an operator would have to use different frequencies, the radios installed in new vehicles for XM/Sirius would not be immediately compatible with any competing service). Most importantly, XM and Sirius should not be permitted to sign (or continue) agreements with automobile manufacturers which limit the installation of competing services in their cars, whether these are terrestrial or satellite-based.

In our view, consumers will dictate if more than one subscription-based in-car audio service is feasible. It is entirely possible that the strength of terrestrial free-to-air radio, combined with readily available pre-recorded content on MP3 players and other increasingly capable storage devices, will prevent subscription-based radio from ever serving more than perhaps 20% of US vehicles, a view supported by the recent slowing of satellite radio subscriber additions. In that case it would be hard to describe a merged satellite radio operator as any sort of monopoly provider of in-car audio content, except in a very limited number of isolated rural areas with few terrestrial free-to-air radio stations.

Satellite Radio vs. Other Technologies Ping-Pong Chart: Competitive Actions and Reactions			
Type of action	**ACTION**	**Time Lapse**	**REACTION**
Programming development	**February 2, 2004** XM drops commercials from its music channels and grows to over 3M subscribers by year end 2004	11 months later	**December 2004** Clear Channel reduces the total ad time each hour on its terrestrial radio stations to "win back listeners"
Programming development	**March 1, 2004** XM introduces traffic and weather service for major metropolitan areas	1 month later	**April 19, 2004** NAB calls for XM and Sirius to be barred from broadcasting local weather and traffic, describing this as "cream-skimming" of local (terrestrial radio) broadcast markets
Technology development	**October 13, 2004** Over 2M Apple iPods are shipped in the quarter ending September 25, 2004	1 month later	**November 15, 2004** XM releases the handheld MyFi device, offering the capability to record XM programming
Technology development	**July-August 2004** XM to be fitted as a factory option in luxury automobiles including Porsche and Audi models	5 months later	**January 11, 2005** Apple teams up with leading car companies, including Mercedes Benz and Volvo, to deliver iPod integration in car stereo systems
Programming development	**January 8, 2007** Verizon announces that V CAST mobile TV, including content from MTV, Comedy Central and Nickelodeon, will be available by the end of Q1 2007	3 months later	**March 29, 2007** Sirius announces that video content from Nickelodeon, Disney Channel and Cartoon Network will be available in Chrysler's 2008 minivans