

Streaming Killed the Satellite Radio Star

Companies: AAPL, GOOG/GOOGL, IHRT, P. SIRI

April 22, 2015

Research Question:

Will Pandora's growth in auto infotainment result in share loss for SiriusXM over the next two years?

Summary of Findings

- Pandora Media Inc. (P) and other web streaming services already are taking listener market share from <u>SiriusXM Holdings Inc.</u> (SIRI), and will continue to do so at a fast pace over the next five years.
- Streaming music via mobile devices is a threat to SiriusXM in addition to cars becoming more 'connected' and Apple Inc.'s (AAPL) CarPlay and Google Inc.'s (GOOG/GOOGL) Android Auto coming online. Additionally, it is costlier for OEMs to install SiriusXM due to hardware requirements.
- Pandora is the current leader for streaming music. But, Pandora has threats of its own, including <u>iHeart Media Inc.</u>'s (IHRT) iHeart Radio, <u>Spotify USA Inc.</u>, and Jay-Z's <u>Tidal</u>.
- SiriusXM is taking steps to stay relevant by <u>acquiring Agero Inc.</u> in connected cars and introducing its own streaming app. Several sources believe both satellite and streaming radio can co-exist.
- Advertisers prefer web streaming services, as integration of social media is more symbiotic with web streaming services, target audiences can be more easily identified, and the high-value teen demographic listens via streaming, not SiriusXM.
- SiriusXM's content was consistently cited as a positive, but as contracts for key entertainers such as Howard Stern come up for renewal in December, it is clear such content can easily be at risk.
- Our online survey of 157 respondents that have streamed music or used satellite audio in the past month found that streaming via smartphone is used more than dashboard infotainment systems, especially among younger respondents. SiriusXM was most popular among those over 44 years old, Pandora was popular among those 30 to 44, and Spotify had higher adoption among those 18 to 29.

	Streaming Overtaking Satellite	SiriusXM's Share Going Forward	Streaming Competitors to Pandora
Infotainment Software/Hardware Developers	1	1	1
Auto OEMs	→	1	1
Industry Specialists	1	1	1
Media Buyers	1	1	1

Silo Summaries

1) Infotainment Software/Hardware Developers

All four sources see streaming services like Pandora, Spotify and a plethora of other streaming services gaining market share on SiriusXM, particularly among young trendsetters. Any significant market share erosion likely will take longer than two years, however, as SiriusXM already is scheduled to be pre-installed in vehicles over the next few years. Apple's CarPlay and Google's Android Auto will become major disruptors in the market.

2) Auto OEMs

One source was negative on SiriusXM's prospects, and two thought both satellite and streaming radio services could co-exist. SiriusXM's advantage is their content, though one says its content is not sufficient to keep its market share from declining and SiriusXM has not adapted fast enough to compete with streaming. The advantage enjoyed by Pandora and other streaming services is the customization ability for listeners. One source noted it costs auto manufacturers more to prepare a car for SiriusXM than for streaming services.

3) Industry Specialists

Three sources believe streaming has and will continue to undercut SiriusXM's market share over the next two years. One views SiriusXM as not threatened due to their audience-followed content, notably Howard Stern. But, most sources see SiriusXM as on the way out as auto manufacturers start integrating Apple's CarPlay, Google's Android Auto, and OEMs own platforms. The connected car will only hasten the process of web streaming adoption in autos. The key demographic for advertisers is those in their early teens—precisely the group SiriusXM does not target.

4) Media Buvers

From an advertiser's perspective, streaming is more interesting and is more cost effective as it allows advertisers greater social media integration capabilities. Also, advertising results can be more easily measured. Both sources agree streaming services are seeing tremendous growth and will continue such growth as integration of connected devices like smart TV's and appliances, among other devices, continues.

5) Online Survey

SiriusXM is the most used satellite or streaming music from respondents above the age of 44. Pandora is adopted by respondents 30 to 44 years old and 60 and above. Spotify to higher adoption from 18 to 29 year olds for its great content and on-demand streaming.

Background

Streaming audio gradually is becoming the most popular form of music consumption in the United States and soon will be prevalent in most vehicles as so-called connected cars become the norm. Currently the extent of Pandora's near-term effect on SiriusXM's vehicle listener share is unclear, however one factor is known: both companies have been taking and will continue to take substantial share from terrestrial radio in vehicles at the <u>rate of 1.5% per year.</u>

Pandora leads the streaming music market in listenership, with 46% of streaming audio listeners having used the service in the month of January. The service currently is installed in more than 150 models of new cars (which amounts to 1/3 of all new cars sold) and 270 aftermarket automotive devices. Pandora doubled its vehicle listenership last year to 9 million users in 2014. According to one study, streaming music from Pandora or Spotify was the feature desired most in a connected car.

Currently, <u>9 million people have Pandora</u> installed in their cars, representing just 2% of the auto listenership market. Pandora has a long way to go to catch SiriusXM, which is available in 70 million vehicles and owns <u>11% of the car listenership market</u>. SiriusXM claims it will be in 100 million vehicles by the end of 2017. The company has long standing relationships with auto OEMs and is increasing its telematics presence via weather and traffic features in some of its vehicles. SiriusXM eventually will be able to drive more trials in the used car market, where it currently has a 33% conversion rate, than in the new car market, where it has a 40% conversion rate.

Blueshift's <u>Dec 11, 2014 Pandora report</u> found that Pandora's revenue would grow, its user growth rate was slowing, and it would have troubles wrestling listeners from SiriusXM in the car due to in-car connectivity issues. Our <u>Nov. 26, 2014 SiriusXM report</u> found that SiriusXM would continue to stave off rising competition from streaming competitors until in-car connectivity became more consistent. The company's diverse content—including its numerous talk, news and sports radio options—gives SiriusXM a competitive edge over current streaming alternatives. Sources agreed that SiriusXM must evolve its platform as the internet modem eventually becomes the hub of the connected car.

Current Research

In this next study, Blueshift Research examined whether SiriusXM would lose market share to Pandora over the next two years. We also examined other up and coming trends and services, and assessed which of these are likely to hit the auto infotainment market in the next few years. We employed our pattern mining approach to establish five independent silos, comprising 12 primary sources (including seven repeat sources) and six relevant secondary sources focused on a plethora of competitors in the streaming space and SiriusXM's attempts to keep content talent like Howard Stern:

- 1) Infotainment software/hardware developers (4)
- 2) Auto OEMs (3)
- 3) Industry specialists (3)
- 4) Media buyers (2)
- 5) Online survey (157 respondents)
- 6) Secondary sources (6)

Next Steps

Blueshift Research will follow the roll out of Apple's CarPlay to determine which web streaming services will be supported. We will follow SiriusXM's attempts to get into the streaming market via their app. We also will monitor SiriusXM's content advantage over competitors.

Silos

1) Infotainment Software/Hardware Developers

All four sources see streaming services like Pandora, Spotify and a plethora of other streaming services gaining market share on SiriusXM, particularly among young trendsetters. Any significant market share erosion likely will take longer than two years, however, as SiriusXM already is scheduled to be pre-installed in vehicles over the next few years. Apple's CarPlay and Google's Android Auto will become major disruptors in the market.

Key Silo Findings

Competitive Market Differentiators

- All four sources see streaming radio services like Pandora and Spotify gaining market share on SiriusXM particularly among young trend setters, though it likely will take longer than two years.
- 1 compares SiriusXM to the cassette, coming and going.
- 1 source notes that auto manufacturers incur higher costs when implementing hardware needed for SiriusXM compared to software implementation for streaming services.

Looking Ahead

- The subscription model is dying. Streaming services like Spotify, iHeart Radio and others, are in style.
- The new model is connected devices.
- 1 source thinks Apple's CarPlay will be a major market disruptor.

1) Automotive strategist, repeat source

The landscape for both Pandora and SiriusXM will change over the next three to five years as OEMs create new designs for the connected car. The connected car, with over-the-air software updates as seen in Tesla vehicles, will not lock in car makers to any one music or information service, but will allow even more players to enter the space in the same way that cell phone users have a constantly changing selection of apps for their devices. This could be a threat not only to SiriusXM satellite radio, but also to Pandora. Currently, in terms of pricing Pandora wins over SiriusXM because of the hardware and subscription costs of satellite radio. However, the preference for each service's content is an important determining factor for consumers. SiriusXM satellite radio also has an opportunity to offer data connectivity services on their satellite channel, which in turn could be used by streaming music services such as Pandora. Another scenario, which is in the concept phase, is using a non-critical channel of the planned DSRC roadside safety applications network to deliver streaming content.

Competitive Market Differentiators

- "There are big differences between Sirius and Pandora. Sirius has an attraction for audiences who simply want to turn on the radio and not think about it. They have a costly and comprehensive content library."
- "Pandora is more popular for tech savvy people. Many new drivers are tech savvy"
- "Pandora doesn't have the same kind of content as Sirius, especially not in terms of information. It's more about music streaming and entertainment."
- "If you were to narrow them down to a common denominator, music, the less expensive one will be the most attractive. I can't imagine Sirius winning out on a cost basis to the consumer."
- "With Sirius, you pay for the subscription, pay for the hardware in the car, and you also have to listen to ads for many of the content channels. In that category, there's no attraction to the consumer. Pandora would win in that category."
- "However, Sirius still has an advantage over Pandora for talk radio, which attracts an AM type of audience, and for information sources such as the weather or traffic, things that are relevant to what people like to listen to in

Customers demand the Sirius feature from all the OEMs. But the Sirius lifecycle is likely to become like the cassette—it comes, it stays and it eventually goes. Eventually people won't be wanting to pay for the additional hardware.

Automotive Strategist



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- "The differences in their content will determine if one is going to be more successful than the other."
- "Customers demand the Sirius feature from all the OEMs. But the Sirius lifecycle is likely to become like the cassette-it comes, it stays and it eventually goes. Eventually people won't be wanting to pay for the additional hardware."
- "The car OEMs will wait to find out when consumer demand gets low enough so they don't have to offer it anymore."
- "The hardware costs money in every single car and there's a software cost and an engineering cost that is nonrecoverable. The tier 1s usually pay for it and try to charge it back to the OEMs."
- "The OEM has to purchase and license the silicon that goes into the radio. They have to engineer the head unit to accommodate it and they have to put in the appropriate antennas and support systems and warrantees. They have to have purchasing and warranty support programs in place with Sirius radio. On the other hand, they have income opportunities with Sirius' revenue share so they may be able to offset some of those costs."
- "The cost for Pandora isn't as big. The hardware is already there to support other functions. Pandora is purely a software feature they can add."
- "Pandora relies on a continued internet connection. The customer has to purchase a device license from their carrier and need to have the appropriate hardware in the car."
- "Usually the car maker will put only one type of hardware for cellular communications so they have to go with that."
- "Or, the customer may use a cellular phone to direct the content into the car. That's the new model."
- "This new model was discouraged for a long time but now it's moving toward the phone projecting the output of the music service, let's say Pandora. This changes the whole dynamic again, because you now have other music services that are widely available."

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Automotive Strategist

- "The consumers can change their phone technology or their carrier and they don't have to buy a separate plan. That's very attractive."
- "In that space, Pandora has a better proposition because they can sell to the customer the idea that they're using their service not only in the car but also elsewhere, and it also works on other devices."
- "Sirius is very impractical to use on any other device because of the required antenna. You can't get an antenna into a mobile device that can reach satellites."
- "Sirius' streaming is the same as Pandora, except for the content. But I think the OEMs are not likely to build in a Sirius streaming service if at the same time they're building in a phone integration service that can deliver the same thing to the customer."
- "The recognition of Pandora is very high. The car makers don't want to educate customers on alternative music services. But customers understand it when they say Pandora."
- "In Europe, it's generally Spotify. Ford [Motor Co./F] was the first to offer an integrated Spotify experience with a phone integration feature through Ford Sync."
- "Ford Sync's underlying technology, called SDL [Software Device Link], doesn't tie itself in with any kind of particular streaming technology. It could work with Pandora, Sirius streaming, or Spotify."

- "One of the most important technology trends in motion is the connected car. For now, it's largely more conceptual than implemented, but all the technology providers have rallied around it."
- "The connected car is, I think, a threat to both of these players because it brings in more players. Sirius, other than XM, hasn't had any competitors. Pandora has been in a lead position in popularity and visibility. With more of a broad universal approach to connected cars, whether through 4G technology or piggy back on DSRC or from Sirius, everything will open up."
- "Car companies can offer a chipless solution in the car, and that way they don't have to lock themselves in at least three years before they ship a vehicle. The benefit is that the car doesn't have a dedicated chip in it for a dedicated specific service, like Sirius. It has a software only solution that can be added later."
- "Unlike in cell phones, what you get in cars when you drive out of the car dealership is what you have. All the features that are in the car were designed three to four years prior. A few years later, you wish you had other features but you can't take advantage of new phones and new technology."

- "People expect their consumer devices to work dynamically. For that, OEMs have to get the ability to load new software and update the system easily. Today, that can only be done in car dealerships, and because of all the validation and testing, they will have to spend an hour or more updating the software and then will bill their time back to the car OEM. The consumer also has to drive in to the dealership. The bottom line is most people don't even update their cars."
- "With a connected car, the car company can ship the car with a service like we take for granted on our cell phone, the update capability. Car companies don't use over the air updates yet because they're trying to figure out how to use them in a safe, reliable way. They have the technology available but so far the only car company that's implemented it is Tesla [Motors Inc./TSLA]. They've already provided many software updates to their customers, some to improve the battery and others to make the car safer. They reinvented the way the car business works. In the next three to five years, the other car companies are going to catch up to that and they will offer those features. Realistically, I would consider that a threat [to Sirius satellite radio]."
- "Car makers are designing their 2019/2020 vehicles now, and we're seeing those features come out in the
- "For this to work, there has to be a communications channel, in the car, whether it's the consumers own or an embedded chip, ideally, for just connectivity. It's not a completely chipless solution because there still has to be a chip for communications, whether it's a WIFI chip or for something that can be done from home when the car is parked overnight and connected, so you can get these updates. The OEM also has to have a system in place at the headquarters of the car company as well as a matching system in every single car."
- "General Motors [Co./GM] can do this already, but they only use it to add features to their OnStar service and to gather information. They don't take advantage of it for updating the head unit."
- "A lot of those systems are separated from each other in the car. When one breaks the other ones don't break. The radio and air conditioning are separate systems, for example. The OEMs like to keep them separate but it's a disadvantage when it comes to over the air updates."
- "Once they work all those details out, they can have a solution that's more similar to the way Tesla operates, without separate systems. That's why it's easier for Tesla."
- "It all has to fall into place but it will happen in about three to five years."
- "Sirius is also pursuing another model, where they could use their satellite network to provide data connectivity based on the footprint of their satellite coverage, in North America mostly. If they can do that successfully, they can give the customer dual value: access to Sirius satellite content, and access to the data network the car would use for other purposes. The success of that is dependent on what those other services will be."
- "The satellite network will provide continued connectivity for most locations, even in remote areas where there's no cellular connection. That could be sold as an advantage. It's a threat to Pandora. But it's also an opportunity for Pandora to piggy-back the Sirius network."
- "You could end up with both-Sirius data connectivity, direct satellite service and content-but also have other streaming services available to you."
- "There's also been an effort underway for the last 10 to 15 years to implement a government-supported roadside network for connectivity that's focused on safety. If that DSRC network is deployed, there's a concept of a mobility application that carries non-critical data added on the safety applications. That could be used to deliver streaming content. That's a potential technology threat to the Sirius satellite network, but not to the streaming services. For now, it's quite a ways down the road and there hasn't been much success in establishing a real strong momentum around it. I don't think it's an imminent threat."
- "It also took time for Sirius to build out their satellite network but they had a different set of requirements and they didn't have to deal with automotive regulations."

2) Infotainment software expert; repeat source

Neither SiriusXM nor Pandora is in a strong position in the fairly near term. SiriusXM is set to lose share to Pandora, Spotify, and other streaming music service providers in vehicles targeted to younger buyers who are familiar with those services and find appeal in streaming services but not in SiriusXM. OEMs will start dropping SiriusXM as a test in vehicles for those buyers. SiriusXM could at least reduce its extra hardware cost, which is not popular with OEMs, by running its receiver code on the processor rather than deploying its own silicon chip. Pandora's position also is threatened because



it is absent from Apple's CarPlay because of its preference for its own Pandora Link. However, OEMs selling to recent college graduates will favor CarPlay, as well as Android Auto, for their easy integration and inclusion of the top streaming music apps. They might, however, be reluctant to separately integrate Pandora into their infotainment units.

Competitive Market Differentiators

- "The difficulty regarding SiriusXM is the incurred hardware cost. It's never been a happy situation for the OEMs. Resubscription rates are low and it doesn't get people excited anymore, whereas if you say the car has Pandora or Spotify, that's more modern and hip."
- "The SiriusXM listenership trends older. If car makers are looking at volumemaking vehicles that they want to sell to the 25-35 age group, they know that age group isn't looking for SiriusXM."
- "Those are the two negatives for SiriusXM."
- "The traffic delivery on Sirius is very valuable. It's important to remember that it's also an asset that they have."

Looking Ahead

- "We'll be seeing some OEMs start [to drop Sirius]. It will be a test drop at first, like when the cassette player or CD player was first left off. It will be in vehicles for younger, just out-of-college buyers, who've been listening to Pandora and Spotify at home and in college dorms."
- "Sirius has an opportunity to be doing something about this, and should be doing it."
- "Some companies have shown proof of concept running the Sirius receiver code on their processor, so the hardware cost wouldn't have to be incurred anymore."
- "It's technically feasible. Sirius should be looking at software deployment rather than silicon deployment. This would mean getting rid of the Sirius chip and deploying their software into the processor it's already talking to now. You wouldn't need the Sirius receiver chip that's currently on the infotainment board anymore, so it would save money on the hardware costs."
- "Pandora was conspicuously absent from Apple's CarPlay announcement. They're the number one service by a huge margin. Other music services like iTunes radio, Spotify, and iHeart Radio are in CarPlay.
- "This is Pandora's choice, I would guess. The other players who are iTunes competitors are there. Clearly Apple is open to them."
- "Pandora did their own Pandora Link. That's a mess.
- "The trend in low-end vehicles is display radio or display audio, where the head unit has a large color graphic screen but doesn't have navigation, just basic AM/FM. The driver gets navigation and online features through CarPlay or
- "Recently, low-end chips have been able to get the decoder for CarPlay. Streaming services that are adopting CarPlay are getting right in. There's no custom integration required from the tier 1 or OEM for each separate service.
- "Pandora can work [with the infotainment system], but it involves extra work for the OEM. With CarPlay and Android Auto, integration is simple—everything comes along for the ride. OEMs won't be pleased about doing a one-off installation for Pandora."
- "For streaming services that don't embrace [CarPlay] but want to be off on their own like Pandora does, they can be left by the wayside."
- "Neither Pandora nor Sirius are in a strong position [in the fairly near term]."

3) Executive with tier 1 infotainment research center

Internet radio's growth in auto infotainment will result in share loss for SiriusXM over the next five years. New generation consumers are no longer excited about SiriusXM and prefer instead the two-directional customized possibilities of Internet radio. Pandora has focused more on being a mobile app than a car infotainment provider. In five years, infotainment in cars will serve personalized content and the driver will receive information and music that is personally targeted to his or her preferences, lifestyle and location without having to change channels or sources, SiriusXM's subscription business model also is at risk of being replaced by more of an advertising-based model centered on personalization.

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Infotainment Software Expert



Competitive Market Differentiators

- "Despite SiriusXM's qualities of being commercial free and good quality, and even though most new cars have SiriusXM modules, the consumer is not that excited about it, especially not the new generation consumer. They see SiriusXM as old technology, one-sided. It's one too many channels of distribution vs. Internet radio, which can be customized and two-directional."
- "Pandora has focused on being a mobile phone-centric app and the car piece was almost a second thought."

Looking Ahead

- "IP-based content delivery is more interesting [than satellite radio]. You can expand it to actions and transactions. There are a lot of companies in Silicon Valley that, based on who you are and where you are, and based on the music you listen to, bring you a discovery element."
- "[Our service] is trying to create more of a personalization element. The future is more about personalization and the content, which is very contextual. It's targeted to the individual, where he or she is, what he or she likes, the time of day. The content plays a key role."
- "It won't be about the music only anymore, but all the information you need, and where you are, so you can act on it."
- "When you start your car, you'll get the traffic and your daily schedule. You won't need to go to a certain channel to get traffic and then go back to your favorite station for hard rock. That will be done for you in the background."
- "It will be more contextual and intelligent. It will come to you with music, information based on the day of the week, where on Friday you could even get information about the weekend. That's where the profiles of the user are important."
- "The linear concept of radio is dying, things like morning programming. It's going to take a few years but by 2020, it will be different."
- "Lincoln Continental just started a Black Label with exclusive concierge lifestyle service that is also personalized. Cars with brand or lifestyle value such as those from the German OEMs [will be adopting personalized content and services]. "
- "Content based on a certain channel and being one directional will be passé in five years."
- "Our customers—car rental companies, hotels, airlines—are after personalization. Apple and Google are also after personalization."
- "The challenge is how to blend personalization and privacy. The idea is to connect the dots from personal radio, to the car you drive, the airline you fly on, hotels you stay at, car rental companies you use, to make the consumer feel special and have the content follow you and based on that, get special offers that include information and advertising."
- "SiriusXM is also shifting to the Internet. They are trying to shift their service to be more personalized too and they could be successful in certain things as well."
- "The challenge for SiriusXM is that the subscription model is also dying. Nobody wants to pay an extra \$10 a month to get music. Sirius keeps sending out special offers to bump up their subscriber numbers. I see they have challenges."
- "I wouldn't say they will disappear overnight. After all, Sirius and XM were competing very hard but now they're one company."
- "The indirect business model is better—the user doesn't pay for it, somebody else pays for it. The music becomes a way to learn about your lifestyle so that offers can be targeted to you."

4) Top merchandising executive for a national consumer electronics retailer; repeat source

The number of aftermarket car radios that are capable of connecting to a smartphone to stream music has grown significantly over the past two years, to the point that it is now rare to find a head unit without such capability. Still, this source said it is unlikely that streaming music will take a major bite out of SiriusXM in the next two years because of the large installed base of satellite radio, and the popularity of SiriusXM's unique programming. While it costs money to subscribe to SiriusXM, the cost of data to stream music could level the playing field. Pandora is well positioned to benefit from in-car streaming, but this is based only on its current overall popularity rather than any particular advantage it has in the car, so the risks and competitive threats are the same it faces everywhere else.



Competitive Market Differentiators

- "Almost since day one of satellite radio, there have been various types of add-on devices for the car. Over the last couple of years, they have become just little black boxes that get stuck in the trunk that work with an aftermarket radio that is satellite-ready, so it's a pretty slick integration. Having said that, the market for those types of aftermarket boxes has really shrunk dramatically over the last few years because so many cars have it installed at the factory."
- "The sweet spot with a used car for someone installing a new radio is generally four to six years old. The percentage of cars that are now four to six years old that have satellite radio has grown substantially, and that will grow every year. Sirius will be the first to admit that the aftermarket is not huge anymore."
- "The best gauge of the interest in their programming is the number of subscribers, which continues to grow."
- "It is rare to find an aftermarket head unit, an in-dash radio, that is not Bluetooth audio capable. All but the very least expensive products [have that capability]. Last year, it would've been most. The year before it would've been many. So that has grown."
- "Whether it's something the customer wants or not, it comes along with the package without much of a premium for it."
- "If [car audio manufacturers] mention anything [in their marketing efforts], it's usually Pandora because it's the best known. One of the first suppliers started saying the head units were 'Pandora-ready' or 'Pandora-capable.' What that means is there's usually some thumbs-up, thumbs-down function that you can do on the screen of the product. But really, every radio that has an input that can take Bluetooth audio or has got a USB input can play Pandora or Spotify or any other service. It's just a question of whether you have some integration or are you dependent on the phone for the control."
- "[There has been discussion] that people having to pay for Sirius versus streaming music for free puts Sirius at a disadvantage. But I wonder what happens to bandwidth costs in the car, the whole data plan with caps."

It is rare to find an aftermarket head unit, an in-dash radio, that is not Bluetooth audio capable. All but the very least expensive products [have that capability].

Top Merchandising Executive National Consumer Electronics Retailer

Looking Ahead

- "My sense is that it will take longer than two years [for streaming to really cut into SiriusXM's popularity]. For one, because of the installed base [of satellite radio], particularly if [connectivity] is largely an OEM effort. And two, because there's a high level of satisfaction with Sirius and their unique programming, which they're certainly staying focused on."
- "I think Pandora is in a good position, but it's not anything inherent about the car. I think people want to have the same choices in the car that they have on their phone or in their home. There are subtleties among the services that drive people to use one or another or drive people to use different services at different times. I like Pandora as background music but if I'm paying more attention, I like one of the streaming services where I can go and play a particular album. I don't believe that will be any different in the car."
- "It will come down to what the differences are among the various services. I don't imagine there's any reason that all the services won't be available in the car, though with some [cars] the control may be a bit easier because of what they've done in the head unit."

Other

- "How you get that signal [to stream music in the car] will be evolving. Right now, the main interest from customers seems to be using their phone as the source to stream music through the car radio. Whether that will migrate to where the car itself has more network connectivity remains to be seen. Everybody is talking about it but it's still rare and still not easy to do. It looks like it will be phone-based for guite some time."
- "I'm not aware of [an aftermarket device to provide Internet connectivity for a car]. It seems like the connectivity development is much more on the OEM side [than aftermarket development], because I think OEMs are taking a much broader view of what it can provide—service monitoring, accident notification, those kinds of things."

2) Auto OEMs

One source was negative on SiriusXM's prospects, and two thought both satellite and streaming radio services could co-exist. SiriusXM's advantage is their content, though one says its content is not sufficient to keep its market share from declining

and SiriusXM has not adapted fast enough to compete with streaming. The advantage enjoyed by Pandora and other streaming services is the customization ability for listeners. One source noted it costs auto manufacturers more to prepare a car for SiriusXM than for streaming services.

Key Silo Findings

Competitive Market Differentiators

- All 3 sources say SiriusXM's competitive advantage is their content, i.e., Howard Stern, though one says SiriusXM's content is not sufficient to keep its market share from declining.
- 2 sources say Pandora's competitive advantage is its customization capabilities. Other streaming services also have this ability.
- 1 says it costs more for auto makers to get cars prepared for SiriusXM than software-only solutions on which streaming radio runs.
- 1 says SiriusXM has not adapted fast enough to compete with streaming.

Looking Ahead

- 1 says both Apple and Google will disrupt the auto infotainment world.
- 1 says there is industry discussion about integrating satellite radio with web radio to make the two work in relation to each other.
- 1 suggests SiriusXM could make radio on demand, similar to VOD for TV.

1) Connected car service specialist at an auto OEM

Though SiriusXM has strong content and a dedicated audience—especially for its well-known radio host Howard Stern—the satellite radio has not adapted fast enough to compete with streaming music. Spotify got a head start in launching a subscriber-based Internet music service that would be hard for SiriusXM's streaming app to catch up to. Pandora's advantage over SiriusXM is flexibility through customization as well as its ad-supported model without a subscription fee. Pandora has also successfully integrated into the dashboard. Still, SiriusXM is becoming active in connected car services through its acquisition of Agero, which works on a vehicle's cellular connection. SiriusXM also has invested in its content and satellites, an indication it will fight for its share in the broadcast space. Apple's Car Play and Google's Android Auto have their own apps and ecosystems and will be major forces that will disrupt the infotainment landscape, threatening both SiriusXM and Pandora.

Competitive Market Differentiators

- "Sirius has become more active in the connected car space with their acquisition of Agero. Agero is a competitor to GM's OnStar. They do Hyundai's BlueLink. Agero works with the car's own cellular data connection that's used for diagnostics by the OEM."
- "Sirius can leverage Agero to make their business run more efficiently. They can use Agero's call centers and billing services, among other things."
- "Sirius has several advantages going for it. One is the content. It has paid a lot of money for Howard Stern. There's a strong listenership, a dedicated audience. There's also the traffic and weather data they provide. Also, satellite reception is more reliable in areas where cellular connection may be weak and in that way, it's a strong competitor to Pandora and other streaming services that people listen to on their cell phones. However, Sirius requires a subscription and the equipment has a cost too, though it doesn't require for us to have our mobile phones on us and it doesn't require expensive data plans."
- "Pandora is more flexible and allows for customization, but not in the car, while driving."
- "Streaming radio is very fragmented and there are many players with different business models. Pandora is an adbased model and has the largest sales team for their ad sales. Other services are subscription-based, like Sirius."
- "Clear Channel's iHeart Radio has done a lot more than other streaming radio because they've incorporated more local content."
- "Pandora did a phenomenal job integrating into the dash. Their ad with <u>Buick</u> [General Motors Co.] was very cool. That gave them an edge."



- "[Regarding the disruption of Sirius or Pandora from their prominent positions in the dash over the next one to five years]: Apple Car Play and Android Auto are major forces. They control their own ecosystem and have their own apps. They are a threat to both Pandora and Sirius. Content will be the determining factor for any competitor to succeed and both Apple and Google will disrupt the infotainment world."
- "I don't think Sirius' content is enough to prevent it from declining. They were too late in creating their streaming app. They should have been the first ones to create an app. Spotify went ahead and got a strong lead on them by getting paid subscribers to their service. Without their car business, Sirius wouldn't have any subscribers. Sirius hasn't adapted fast enough."

Other

N/A

2) Infotainment architect for a high end auto manufacturer; repeat source

Pandora's growth in infotainment does not necessarily mean a share loss for SiriusXM. As more vehicles become connected, OEMs are looking at ways the end-user can access desired content in a simple way, whether the source is satellite radio, streaming radio, or even the cloud, and this leaves room for both to co-exist. Over the air updates and offline customization will make infotainment systems more flexible and personalized. SiriusXM's advantage remains its broadcast model with DJs and personalities that many people want to hear, but its drawback is the cost-both for the equipment and for the monthly subscription fee. Pandora or Spotify could have an edge with customized music. Consumers will choose based on content and simplicity. OEMs will follow consumer preference and will react quickly.

Competitive Market Differentiators

- "It's content [that determines the end-user's choice between Sirius and Pandora or internet radio]. That's the way it's been for the last 12 years."
- "The biggest issue with Sirius is the cost of the equipment. Another barrier is the monthly fee to the consumer. If people already pay for an Internet connection and can get FM or HD radio for free, they may not want to pay that extra fee. There will always be a position for satellite radio but. I think, a lot of the OEMs look at it as a necessary evil, where some percentage of their customers who want to buy their cars want satellite radio. But the way the equipment is sold, they have to put it in every car. If the take rate is 20%, then 80% of the modules are not being used. That's expensive."

The biggest issue with Sirius is the cost of the equipment. Another barrier is the monthly fee to the consumer.

> Infotainment Architect High End Auto Manufacturer

- "Sirius' advantage is in its broadcast model with the DJs and personalities people want to hear. The music content isn't that much of an advantage for them because people can get that content elsewhere. However, some people like to have a DJ put the music together for them."
- "If you're savvy enough to understand how to use the technology, Pandora does that too, where we can subscribe to let's say, Joe's station, and Joe has been our DJ."
- "Location-based advertising is important but it depends on the business model and how it's presented. If the OEMs don't get a cut, it probably doesn't matter to them."
- "This could be an advantage for Pandora, which can have location-based advertising. Sirius doesn't have a lot of bandwidth to provide location specific information."

- "There's been a lot of discussion about integrating the satellite radio with web radio and trying to make the two work in relation with each other."
- "This is something that's being looked at more broadly as more vehicles are connected to the internet-to integrate the content, especially the music or radio broadcast content, with the human interface of the infotainment system and the radio system of the infotainment system. That will be the next phase of integration, where that will look more seamless to the end user.
- "The end-user won't even know where his content is coming from. He'll say he wants to listen to whatever channel he wants and he won't have to know if it's coming from the FM tower, or the Sirius link, or the web."
- "Ultimately that's what the user interface should be. The end-user can say he wants to listen to his easy listening list or his hard rock list and that list can be up in the cloud, or on his MP3 player, it doesn't matter. It'll be about the music or the content the listener wants rather than the source."



- "We still have to connect a few dots before that happens."
- "In this scenario, there's room for both satellite radio and streaming radio. It has a nod to internet radio because internet radio is set up that way, where you can create your own stations and link your own content. Pandora has the edge there. On satellite radio, you're limited to whatever they've selected. But if your choice is to listen to DJs or talk radio, the broadcaster has the edge over internet streaming music."
- "A lot of car manufacturers are putting in connectivity modules for the consumer as well as their own uses, to get diagnostics and data from vehicles. The hardware and connectivity are there. The only question is presentation does the OEM provide only a link to Pandora or let the customer decide how they want the content to be delivered. Some people may want Spotify and some may want Pandora and they don't want to be limited in the method of how
- "There's a two pronged approach in cars because you have some customers who aren't very tech savvy. They know what they like but they don't know how to get internet radio. For them there's a straight forward Pandora button. That's the simple option. Then, there's a backdoor way to connect to the internet. Offline, at home, you can select the services you want delivered to your car and it configures the car for the next time it's turned on. A back-door way is in the HMI to give the user access to different locations, though not while driving. That's going to be an option."
- "The OEMs are getting much better at adapting quickly. The stations built into the head unit can change fast. If Sirius slips away, they'll be quick to turn it off. If Sirius takes off, they'll be quick to add more vehicles to it. They're not going to sit around and be caught flat footed like when MP3 players and iPods came out."
- "Infotainment systems are becoming a lot more flexible with the possibility of over the air updates and changing out the software, to change the HMI, and to not present Pandora, for example, as the main button but Spotify. Or you could have that choice from the beginning."
- "It's going to be a lot more personalized going forward. It's already starting but it's going to steam roll forward."
- "Content and simplicity are what consumers will be looking at."

Other

"The car OEMs just want to follow the consumer world. It's not necessarily Pandora. It's just a matter of popularity. The OEMs are going to chase the consumer trends."

3) Software architect at an OEM

SiriusXM and broadcast radio have an advantage over streaming radio because they do not require a customer's data plan, nor does either require OEMs to pay for data for customers who chose to listen to Internet radio. However, some customers may choose to put the cost of the SiriusXM subscription into a data plan instead, and this will force SiriusXM to reevaluate its business model, though not in the near term. An opportunity for SiriusXM would be if the satellite radio provider adopts a system similar to that used by satellite TV companies, where customers can buy video on demand through set top boxes connected to the Internet. This would make it possible for SiriusXM to customize music to a user's preference, and in this way SiriusXM could compete with Pandora and other streaming music providers. The automobile industry is developing the capacity for over the air updates, and this will be an opportunity for OEMs to adapt infotainment services quickly to changing consumer tastes for various content streams. Consumers will have easy access to apps, similar to those available on smart phones, and this could widen the playing field and disrupt both Pandora's and SiriusXM's position in the dash.

Competitive Market Differentiators

- "All OEMs are adding music services like Pandora or AHA Radio [Harman International Industries Inc./HAR] to their infotainment offerings. But I don't think this means terrestrial radio, nor satellite radio, are dead. The music services need reliable data connectivity to work in the vehicle. And typically they rely on the integration of the user's smartphone to provide the data and service."
- "You can listen to streaming music for hours but it uses up your data plan. There's no way OEMs will pay for that data plan."
- "In that sense, broadcast radio, whether satellite or regular AM/FM radio still have a big advantage."
- "A subscription to SiriusXM is much more cost effective. [Even if] you may not be able to customize it as much as you want, like Pandora and the other streaming services where you can listen to exactly what you want."
- "Sirius' advantage is in the content. If it happens, somebody coming along with better content would be a threat—or more appropriate content or content that appeals to some new trend."



Looking Ahead

- "It would be a game changer if SiriusXM could enable a service similar to Pandora or AHA Radio with the infrastructure they have. As a satellite radio, they have a great distribution channel and you can receive their signal easily and reliably. Its high performance and high bandwidth. But it doesn't have a back channel to send data back to Sirius."
- "As with satellite TV services like DirecTV [DTV] who are doing this through a set top box, they could connect to the Internet and allow the user to get programming on demand or put their own programming together. Integrating something like that in a car would make it possible to create a customized streaming service. It would provide information back to SiriusXM and they would then put an audio stream together that they would send back to the listener by satellite. The user wouldn't be using too much of their data plan because they would only be sending preferences."
- "There's an opportunity there and Sirius is in a position where they could do it. Their only limitation is channel capacity. They have their broadcast services and would have to decide how many channels they could allocate to customization, either to an individual or a group of people."
- "There's room for almost all, even niche programming, as long as it serves enough people to sustain a business
- "[With respect to threats to its place in the dash], Sirius is an additional cost item in the vehicle. It's mostly in North American vehicles and doesn't really play a role in Europe. It also doesn't play as big a role in high-end infotainment systems. There's a reluctance regarding streaming radio. We wouldn't want to incur the data costs. It has to be tethered to the driver's or passenger's cell phone."
- "[But] Sirius' place in the dash is not immediately threatened, because OEMs are reluctant to take on the data costs incurred by Pandora and streaming radio."
- "Infotainment systems are evolving to enable a lot of companies to create apps for them. This opens up infotainment to more streaming services, or anything else. This could threaten both Pandora's and SiriusXM's position. However, the apps would not use the onboard data connectivity."
- "The entire industry is working on facilitating over the air updates. This will save OEMs money and help them avoid recalls, for example. At the same time, it will create flexibility to install or change apps, essentially mimicking the smartphone. But it will always be controlled and limited because of liability issues for the OEM."
- "It's too early to have an open app store for the vehicle. Anything that shows up on the vehicle is a potential liability for OEMs. It will be a collaborative partnership between the OEMs and companies providing apps."
- "In the end, Sirius will also have to examine if the customer would rather pay \$15 month for Sirius or \$15 for a data plan and they will have to adapt. OEMs will have more flexibility with infotainment systems."

3) Industry Specialists

Three sources believe streaming has and will continue to undercut SiriusXM's market share over the next two years. One views SiriusXM as not threatened due to their audience-followed content, notably Howard Stern, But, most sources see SiriusXM as on the way out as auto manufacturers start integrating Apple's CarPlay, Google's Android Auto, and OEMs own platforms. The connected car will only hasten the process of web streaming adoption in autos. The key demographic for advertisers is those in their early teens-precisely the group SiriusXM does not target.

Kev Silo Findings

Competitive Market Differentiators

- 3 sources see looming threats for SiriusXM in the next two years.
- 1 views SiriusXM as not threatened, due to listener loyalty to its content.
- SiriusXM will be threatened by streaming music within two years by streaming content.
- The connected car will only make the process faster.
- Competition for SiriusXM will be exacerbated by the ease OEMs will have in adapting infotainment systems when Apple's CarPlay, Google's Android Auto and other platforms come on line.
- SiriusXM's few advantages are that they are already being built into existing cars and their content.



- SiriusXM is developing an app to diversify away from satellite.
- However, Apple and Google will have OEM-adopted solutions that will rule, unless the OEM installs its own system, at which point SiriusXM will become moot.
- The key demographic for advertisers is those in their early teens, which is precisely the group SiriusXM does not target.

1) Development executive with streaming music platform; repeat source

As Pandora and streaming music providers evolve their business models to become profitable, the industry likely will become similar to that of the television industry where free and cable TV co-exist side by side, making it possible for SiriusXM to co-exist with Pandora and other music services. SiriusXM already is evolving its model through its acquisition of Agero and the development of its streaming app. With that, they've acknowledged that the future of their business is not in satellites alone. It is unlikely that the market will tolerate prices from SiriusXM for its subscription service that are much higher than prices charged by commercial-free streaming music providers.

Competitive Market Differentiators

- "Sirius is moving towards a model that will reflect what the streaming services are doing. But Pandora's business also has to change [so it becomes profitable]."
- "Sirius satellite radio has had great success working with the car makers, including subsidizing their business into the OEMs to have the 26 million subscribers they have. Sirius is one of the most successful music subscription businesses anywhere."
- "They had a captive market at their price point but no longer do. They owned the pipeline to the car 10-15 years ago. Satellite radio was it."
- "Now, connected car technology is expanding so quickly, not because of music, but because the OEMs want to do so many other things with the connection to the car-managing customer relationships and having data access to the vehicle's and the consumer's data. There are advertising and marketing business models that are driving a new wireless pipeline to the car. That has nothing to do with satellites."
- "SiriusXM realizes that and they're building a telematics business model on the wireless connection. They are supplementing it with their satellite connection but the satellite connection is no longer the main business
- "SiriusXM's music service comes through the satellite signal, but the telematics services—weather, traffic and sports—that's another entity. They bought Agero and they're building their customer base there."
- "They're also using the wireless networks and by doing that, they're effectively acknowledging where the future of the business is and where an entirely different revenue stream will come from for them. It will eventually be their main revenue stream."
- "The music revenue stream is going down. \$13-\$15 month is too much for music alone even, if that music is commercial free. All the app music companies like Pandora [or ourselves] are either completely free with a minimal amount of commercials or for \$4 a month, you have no commercials and all the music you want, basically the same service that SiriusXM offers."
- "At some point, there will be a threshold for paying for them. It hasn't happened yet but we'll start to see significant declines in their subscriptions. Sirius charges for getting it into the car and then charges again for the app. People will realize they can just have an app and bring it into the car. It's ok for them for now because the word isn't out yet about all the options, but as word gets out, they'll start to see a decline and they'll have to make an adjustment."
- "The adjustment can be lowering the price or having a free service with commercials."
- "SiriusXM does have some unique content and for some customers it's worth subscribing to Sirius FM just for that content, like Howard Stern, or live sports broadcasts. But that's a small niche."
- "Pandora's [success came] by racing out ahead and getting all those subscribers early."

SiriusXM does have some unique content and for some customers it's worth subscribing to Sirius FM just for that content, like Howard Stern, or live sports broadcasts. But that's a small niche.

> Development Executive Streaming Music Platform



- "Many of the [streaming] services have large audiences, marketing panache and awareness from Wall Street. They have press every day and that's good for any company, including ours, that wants to have success in this space. We're all having our share of success and see nothing but growth on the horizon."
- "Everybody who has a smartphone pays for data anyway. Music services in fact don't use up that much data. Video
- "Pandora is just like radio. To fund their business, they need to sell advertising. I've noticed they're selling more and more advertising."
- "They have a different cost structure than FM so they should have less commercials than FM. If it were only about fewer commercials, everybody would leave FM and go to Pandora. But that's not going to happen because they're different audiences. I think Pandora's audience will shrink because some of the listeners who discovered Pandora because it was the most well-known and most consumer aware streaming service are now listening to Spotify. Spotify has some things for free that Pandora doesn't."
- "Spotify's payment structure to the artist is a little different."
- "[These are the business models that exist] in the middle. There's an industry established market where there's free with commercials, a small fee like \$3.99 month for commercial-free but no on-demand, or \$9.99/month for on demand."

- "Sirius has already created apps for the smartphone that are tethered to the SiriusXM account in the car that allow you to listen to SiriusXM when you're not in your car. It's effectively the same model that Pandora, [our service], and others have done."
- "It's the acknowledgement their music model has a limited number of days. I don't know how long it will take until the number of people willing to pay for it becomes insignificant. After all, AOL is still around and we all thought it was going to die."
- "The music industry has already moved on. For the first time last year, the music industry made more money from streaming than from selling songs on iTunes. CD sales haven't made any kind of dent in music revenues for a long
- "The music business has already transitioned to streaming. The question is how much bigger will it get before something else comes along. Streaming models are still evolving. There's the Spotify model, the Pandora model, and [our service] somewhere in between. We're all having success, though not all are making money. Pandora isn't."
- "You might see Pandora entertain a commercial-free model for some amount of money if they've done an analysis that they can be profitable doing it."
- "What's happening is similar to the situation with free television and cable television. Everybody has their price point of what they're willing to pay for their entertainment. People who're really into their music are willing to pay for Spotify [and our premium service]. The ones who don't want to pay for it will gravitate toward Pandora and [our basic servicel."
- "I think they will all co-exist."
- "Pandora's subscription base will go down because those who want to have an on-demand product will go to Spotify or [our premium service] or some other service. But some people don't mind a couple of minutes of commercials in an hour so they'll stay with Pandora."
- "Pandora's licensing will be changing. They're on a statutory license right now but all their competitors have direct deals with the music companies. [That means we have more songs and a different and better cost structure so we can be profitable with the same amount of commercials or even less commercials.]
- "Pandora is already addressing that behind the scenes."
- "Satellite radio also has a different cost structure and only a certain number of songs they can play. There are many more songs available for Spotify and [our service]. SiriusXM can fix that but it will cost them some money. They'll have to go to the music companies and work out a specific deal. As a satellite service, they have different rules than streaming services. With their streaming app, they will probably have to build a cost structure for the app. Eventually someone will tell them they can't stream music on their app and call it a satellite service."
- "Some of the OEMs want to just let Apple and Google take care of it. Some car makers don't have the resources to develop their own infotainment system. The easiest is to let an infotainment supplier integrate the Apple or Google versions for music and navigation."
- "Other car makers, who have a vision of what they want there and also want to own the dashboard space, have to supply the customer access to the Apple and Google solutions [along with] their own."



- "Some car makers will be Apple and Google only and others will be all three [Apple, Google and their own user interfacel."
- "OEMs fear that if Apple and Google really want to go after the market, they'll do it, by giving it away for free and subsidizing it from somewhere else. If they want to take over the business, they will. Nobody will be able to stop them. They're too big and too powerful."

Other

"It's not just about Pandora but about music streaming services vs. satellite service. All the music streaming services are different. Spotify is not at all the same as Pandora. They have very different audiences who think very differently about the music."

2) Executive at auto infotainment content provider; repeat source

With the advent of packaged solutions such as Apple's CarPlay, Google's Android Auto and AT&T Inc.'s (T) Drive platform, OEMs will be able to quickly adapt infotainment units to shifting user preferences. This will be a game changer by creating direct competition for SiriusXM. Satellite radio will need to adapt in the longer term. However, SiriusXM clearly is trying to grow into other areas, as demonstrated by their acquisition of Agero, and SiriusXM is not threatened in the near term. SiriusXM has done well integrating into the vehicle's hardware and providing premium content that suits particular audiences. The streaming side does not yet have such a common solution, though most services, including Spotify, have a place in the OEMs' ecosystems. Specifically, Pandora uses its own Pandora Link technology for integration into infotainment systems.

Competitive Market Differentiators

- "SiriusXM radio provides a lean back experience with premium content that you have to pay for. That suits a particular audience. They've done a great job of integrating into the vehicle with hardware modules that are deeply integrated in the infotainment systems."
- "The challenge to the streaming side is there isn't as much of a common solution for a large variety of partners until we start looking at Apple's CarPlay and Google's Android Auto."
- "Pandora is a discovery process of listening experience. It's a different concept. They're still competing for a listener's ears but they're for different use cases and they're looking for different types of audiences."
- "I don't think Pandora's bi-directional communication is distracting. I think it's simple enough that it provides a complimentary user experience."
- "It gives you a chance to improve your experience, whereas with SiriusXM you're at the mercy of the programmers to put it together."
- "Pandora had one of the earliest integrations in automotive. They have quite a bit of experience in the space. The way the service is implemented, a lot of the restrictions are provided by the OEMs."

- "I see some aspect of convergence with all the players."
- "There are still some OEMs who want to have their own app ecosystem, which works for Spotify, [our service], and other content providers. I understand Pandora wants to utilize their Pandora Link technology to get into the system, which is to their benefit."
- "There will be just a grade of separation between the modes [apps, SiriusXM] so that they all eventually become audio sources as opposed to independent modes that you'd get in the system."
- "I do see a better infotainment system that allows you easily to switch between modes and not be firewalled into a particular experience. [All of these can co-exist]
- "Sirius is clearly trying to grow in other areas, looking at their acquisitions [Agero]. But I don't see the satellite business changing too much in the near term."
- "There will be some challenges moving forward with the likes of the AT&T Drive platform, which prepares a cellular modem along with content providers [like ours] into one package solution which then gets integrated into a vehicle's system. I see that as direct competition with the services offered through SiriusXM. Sirius will have to adapt in the longer term."
- "Sirius is working with its own methods of bi-directional communication as a supplementary experience. I think they feel there's a need for that in the market."



"Apple CarPlay and Android Auto are similar to the AT&T Drive concept in that they're utilizing the phone to do the processing. As technology changes, you can easily replace their cellular modem. But the head unit it integrates with doesn't change that often because people keep cars for eight or 10 years. This is allowing for modularity in the technology so it can switch things out as the technology evolves. They provide similar, if not better, access to service and it is also in direct competition to Sirius."

Other

"When OEMs decide to put hardware in their vehicles that can withstand several years of evolution but still enable them to change the software involved with the shifting user experience out there, to keep it relevant, it will be a game changer. [this will also open it up to other players]"

3) Managing director, digital entertainment consulting firm

Streaming music will eat into satellite and traditional radio's listener share within the next two years—even before built-in Internet connectivity is common in cars—because younger listeners already are comfortable with using mobile devices to stream music in the car. However, Pandora is not guaranteed to be the winner among streaming services, as it faces competition from deep-pocketed media giants like Amazon and Microsoft, and could also be supplanted by a cool startup. SiriusXM could cement its long-term place on the dashboard with development of digital audio recording devices, similar to DVRs, which allow people to record and save live radio content.

Competitive Market Differentiators

- "[For Sirius], their play is that they're roughly built in [to the car] and you don't need to worry about using bandwidth when you're listening to satellite radio. I think satellite has a place for quite a while."
- "The cost of satellite radio [for consumers] is largely hidden. When you buy the car, they often seek to include the monthly rate into the monthly bill. They literally finance it with your monthly payment so it disappears from sight or goes directly to your credit card in 12-month increments. It's a different equation. And it doesn't compete with your other digital priorities it doesn't take [bandwidth] from other things."
- "We also have to acknowledge that they have a fundamentally lower rate at which they pay for music [than Pandora]. Their all-in royalty rate hovers around 15%. Pandora pays four times that. For them, the economics are quite different."
- "The rest of the music world wants to see [satellite radio's royalty] rates go up dramatically, so you have to assume that's going to happen. If webcasters get their way and get a lower rate, it's because satellite is paying more. Satellite also has relatively limited capacity. They only have so many channels they can deliver at X amount of fidelity, which will be tough for them."
- "The real opportunity for satellite radio is a digital audio recorder. When you can get out of your BMW and have lunch and meanwhile your car is grabbing those six tracks that you want and putting them onto a hard drive or an SSD built into your car, it's basically turning water into wine."
- "The way we price music is based on option value. That which is pushed is cheap and that which is pulled is super expensive. Here you've got a digital medium [satellite radio] that is pushed so it feels very close to free, but in fact can replace stuff that is pulled."

Inevitably [streaming music] will [cause share loss for Sirius]. It's a simple proposition that we've seen play out before. When you give people choice. ... Built-in appliances [in the carl are so quickly obsolete. That's true of the entertainment systems as well. It's all going to come down to that device that you carry and not the thing that's built into the car. The car's only real relevance is built-in Wi-Fi. It's a bridge to whatever you have in your pocket, which is what really matters.

Managing Director Digital Entertainment Consulting Firm

- "There's no way the law is going to stop people from digital audio recording their stuff when we have the background of digital video recorders running every day. It's going to happen. You're going to see SiriusXM get into the world that replicates the home. I don't watch TV anymore.—the DVR watches for me and I watch the DVR. When the car does that for you with music, that will be savagely disintermediating. It will be the killer app for the car."
- "The technical obstacles are all gone [to digital audio recorders]. It's a public policy question. I don't think it's just the hardware [where Sirius will benefit]. Sirius will be the ones feeding the device and giving it the functionality. It's

inevitable that BMW, Ford, etc. all get in line to offer it. The idea that pull is expensive and push is cheap and now you have the ability to turn push into pull and do it in the car with simplicity, that is a killer app."

Looking Ahead

- "Someday we'll have better mobile access and bit by bit we're getting there. T-Mobile will now not count your music streaming against your [monthly data] limits. That's one example of the shift."
- "Inevitably [streaming music] will [cause share loss for Sirius]. It's a simple proposition that we've seen play out before. When you give people choice, they exercise it. We saw more channels come to television and we watched all the mainstream channels lose share. It wasn't necessarily that [the new stations] were offering better television. They were offering choice. When you give people more options, they tend to use them."
- "We're approaching the last barrier [to widespread use of streaming music in the car]—the perception has to match the reality. People have to know there's enough bandwidth; they have to know their account won't run out of digits that month; they have to know the rates are low enough."
- "You have to get to the point where you can get enough data to listen to streaming music, but even after you reach that point, people have to know this and it has to be to widely known. We've reached that last barrier. That perception part is the last one looming on the horizon."
- "You have to absorb their uncertainty in all those ways. People are highly uncertain when it comes to mobile plans because you can't see it happening-it's not like watching water flow out of the tap."
- "Pandora is by no means the sure winner [in the car]. They substitute their judgement for yours. If you go there and ask for a specific song, you know for sure you won't get that. They're not allowed to give you that under their license. There's a huge debate about whether they're even allowed to give you the artist you request."
- "A big threat is the small players—a kid in a garage. You never would've called Napster before it came, but that was a couple of kids in a garage. That's the big boys' greatest fear. It's why they're not afraid of high rates. They're afraid of not looking cool anymore—that somebody comes along who does look cool with something really different. That would be savage for them. All of a sudden, you're yesterday's news and there's almost no way to fight that battle."
- "There's confusion for an older demographic [about how to stream music in the car] but certainly for an 11-year-old in the backseat with a pair of headphones there's no confusion. He's certain it plays through his headphones, and he's the demographic everyone is chasing. Geffen Records used to believe once you started buying cars, at age 16 or so, you were flirting out of our demographic. You had other things to spend your money on. When you're younger, you spend a lot of money on music, or at least you did."
- "How Ford is dealing with [providing streaming music] and how the adult driver behind the wheel is dealing with this is almost irrelevant to the advertisers who are trying to reach the 11-year-old in the backseat."
- "The key demo for a lot of advertisers is under 16. You often wonder, how is Justin Bieber so popular or where did that [artist] come from? Is this really our collective musical taste? No, this is the collective musical taste of people under 16, who really are the key demo chased by advertisers and music companies and media companies in general."
- "To [the younger crowd], what's attractive is they can sit in the backseat and tune out everything else their parents are doing. That's the demographic. That is definitely going to provide great incursions [into satellite and traditional radio listening] over time."
- "I deal with four cars and just realized the other day that all their GPS units are irrelevant—they all have old maps and nobody needs them anymore. I can bring up Waze on my Samsung phone and all of a sudden have a better GPS than I ever had in the car. Built-in appliances [in the car] are so guickly obsolete. That's true of the entertainment systems as well. It's all going to come down to that device that you carry and not the thing that's built into the car. The car's only real relevance is built-in Wi-Fi. It's a bridge to whatever you have in your pocket, which is what really matters."

Other

- "[Traditional radio] is always going to be with us in our lifetime. Big music is making a bet that AM/FM is going away, but I have this debate regularly with top people in the music industry. I often tell them to cut the streaming [royalty] rate to 33% across the board and apply it to AM/FM, satellite and Internet radio. And they all say, no, we're going to wait for AM/FM to die and then everyone will be trued up to 50% or 60%."
- "Their strategy really is to wait for AM/FM to die and in the meantime to let them essentially pay nothing? Their view is yes, because it's better than lowering the rates for [streaming music providers]. I strongly disagree and think there should be an across-the-board rate so the government is not picking winners and losers in this debate."
- "[Music industry executives] like the 50%-60% rate that applies to webcasters. They certainly abhor the 3%-4% rate that only pays songwriters that applies to AM/FM, but they're not willing to lower the webcaster rate to bring it up.



They believe everyone should be paying at least 50%-60%, maybe even 70%, so they're willing to let AM/FM go because they don't think they can achieve that 50%-60%—and they're right, they can't. They've certainly come to the conclusion that AM/FM is going to die or they would pay more attention to coming up with a rate that was inclusive."

- "I don't think the AM/FM radio is going away. It will be quite a while before the installed base commonly includes Wi-Fi in cars. Today it's an anomaly. It's a dog walking on its hinds legs. People are just astonished that it works. And it's extremely expensive-it's provided by OnStar in GM cars-and it's not very good. People will buy it but they're never going to use OnStar Wi-Fi to stream music to their car until it fundamentally changes."
- "There's an installed base of AM/FM radio [listeners] getting the weather or listening to it on the way to the commuter station. I agree AM/FM radio will atrophy over a long period of time, but it won't disappear until long after you and I are gone. It's not going to have dramatic growth but it's not going away in the short-term."

4) Mark Ramsey, president, Mark Ramsey Media LLC, media advisor, research analyst, and radio/digital media strategist; repeat source

Pandora's growth is not a threat to SiriusXM in the next two years because Pandora has a completely different audience. People listen to SiriusXM for its exclusive programming, including sports and Howard Stern, which Pandora does not have. Additionally, SiriusXM's audience is older than Pandora's. SiriusXM also has established a greater visual presence in cars than Pandora, which is just starting to get its own icon in new cars. It will be 5-10 years before the two services will compete more directly. In that time, it is likely that SiriusXM will focus more on embracing its unique content but it is unclear how Pandora might change its programming to compete, perhaps by signing sports teams or hiring competition to Howard Stern.

Competitive Market Differentiators

- "Pandora and Sirius are largely two different audiences. The SiriusXM audience is much older, on average, than the
- "The SiriusXM audience is looking for something completely different. Some people may listen to hits but more commonly, people are listening to spoken word and especially Howard Stern."
- "SiriusXM prides itself on exclusive content and this really creates a buffer against Pandora."
- "If both had started at the same time, I would be more concerned. But people aren't making that comparison."
- "The equation is not Lady Gaga here vs. Lady Gaga there. It's Howard Stern vs. no Howard Stern."
- "The exclusive content of SiriusXM, including their sports exclusives, is not to be underestimated. SiriusXM has an older male audience while Pandora is a younger male and female audience. Each satisfies different needs right
- "I don't think people are asking themselves if they should drop SiriusXM so they can listen to Pandora. Until Pandora actually becomes an icon on the dashboard, like it is in new cars, it'll be 5-10 years before there'll be any kind of even visual equality between them. In all those cars that have been out on the road for years, Sirius is literally built in and Pandora is not."

- "It will be 5 to 10 years before Pandora's icon becomes equally present in cars as the built-in SiriusXM is, which has been going into new cars for years."
- "Sirius will embrace more its non-music assets and those will be increasingly important to the future of SiriusXM. Just as the House of Cards is more important to Netflix than a show that it buys from somebody else and that's been on TV for a while already and can be seen elsewhere."
- "Sirius' exclusive content is going to become more important. But it's hard to know what shape that's going to take on Pandora going forward. It's not out of the question that Pandora could build out its own play-by-play sports relationships. Pandora could also have an alternative to Howard Stern. Those are possibilities."
- "The shift is going to be generational. It took a long time for SiriusXM to get into all the cars they're in. It's going to take a long time for a generation of people who grew up with choice to realize they don't need to pay for SiriusXM. That's about 5-10 years."
- "In 5-10 years, I think SiriusXM is still going to be embracing unique content. It remains to be seen whether Pandora embraces non-music content or continues to place all its bets on the side of music."



"Obviously, there are other players on that scene-iTunes Beats, Spotify, and so on. They'll also have buttons in the dash. These will all change the landscape, along with Apple CarPlay and Android Auto, but it will all be 5-10 years out."

Other

"For now, AM/FM is built into cars and SiriusXM is built into cars. They have the benefit of habit."

4) Media Buvers

From an advertiser's perspective, streaming is more interesting and is more cost effective as it allows advertisers greater social media integration capabilities. Also, advertising results can be more easily measured. Both sources agree streaming services are seeing tremendous growth and will continue such growth as integration of connected devices like smart TV's and appliances, among other devices, continues.

Key Silo Findings

Competitive Market Differentiators

- Streaming growing tremendously in auto infotainment.
- Streaming services are more interesting to advertisers because campaigns can be more targeted and audience results can be more easily measured.
- Spotify gives advertisers more bang for buck because of social media integration capabilities.
- Pandora's strength is customization, whereas on SiriusXM you listen to what is pre-determined.

Looking Ahead

Streaming will see continued growth as integration of connected devices like smart TV's, appliances, etc. continues.

1) Strategy executive at a communications agency

Pandora, and streaming radio in general, is much more interesting to advertisers because campaigns can be more targeted to a certain audience and results can be measured. SiriusXM has long had difficulty with accountability and guaranteeing a particular audience and measuring results. SiriusXM audiences lean back and are passive in comparison to streaming radio audiences, who actively customize playlists. Spotify has an equally important place in streaming radio advertising as Pandora because it has a different audience. People are unlikely to listen and subscribe to both, and Spotify's social media connection is particularly interesting to advertisers. Connected cars and connected homes offer additional opportunity for Internet radio growth.

Competitive Market Differentiators

- "Pandora's strength is customization. You curate your own playlist. With Sirius, somebody else determines what they'll play for you."
- "For streaming radio, we're getting a lot of information from people on each platform. You can use that to inform how you develop communications or advertising tailored to the people who are listening."
- "Satellite radio is more of a passive radio. You might tune in to a given station for a given content but you're leaning back instead of leaning forward [and being involved with tailoring the content]."
- "The two are dealt with by different departments within an advertising agency. It's more turnkey to buy satellite radio. It's an easier process. Working with a streaming radio service like Pandora or Spotify is a more complex negotiation but you get what you put in. Digital vs. broadcast is more customized to each client."
- "For streaming radio, you're not just buying air space. It's a sponsorship package beyond the idea of just a 30second radio ad."
- "There are big dividends for the advertiser [in streaming radio] and also for the agency. You can develop a deeper and richer program working together with a streaming service. You can have experiential activation. For example, Pandora and Spotify are always at South by Southwest.
- "Streaming radio offers a better end-product for the advertiser and the agency that's representing that advertiser, and ultimately for the consumer, who will be the one to see it or experience it in more than one place."



- "Location-based advertising can work through the mobile device. But as cars get more digitized, I'm sure they'll have that capability too. A SiriusXM transponder probably doesn't offer location based targeting. It has to be on the mobile device the person in the car is interfacing with."
- "Internet radio is gaining traction. I've seen reports of triple digit growth year over year. Satellite radio is probably remaining flat. They've always had a difficult time guaranteeing the number of impressions or delivering a particular audience. They can't substantiate that because they don't have the measurements. And that's critical. When you buy something on line, it's a guaranteed impression."
- "In ad revenue, the growth of streaming radio has exceeded that of satellite."
- "With advertising investment more critically looked at to make sure it's doing the job, accountability has become very important. Both satellite radio and streaming radio are essentially audio advertising but digital offers the best degree of transparency and accountability."

Spotify offers a better user experience and a degree of functionality with its integration with the social networks. That's really interesting from targeting perspective.

> Strategy Executive Communications Agency

"Pandora's larger audience [than Spotify's] is an advantage, but reach isn't everything. People either listen or subscribe to Pandora or to Spotify. They don't do both. You're not capturing everybody if you only advertise on Pandora."

Looking Ahead

- "Spotify offers a better user experience and a degree of functionality with its integration with the social networks." That's really interesting from a targeting perspective."
- "For advertisers, there's full transparency for both Pandora and Spotify."
- "The integration of devices and their functionalities into automotive, and even into household devices like refrigerators in the connected home will drive revenue growth for streaming radio."

Other

2) Audio manager at media agency; repeat source

Pandora has grown tremendously in terms of listeners, but so have other streaming services like Apple's iTunes Radio, iHeart Radio and Spotify. iTunes Radio offers the added benefit of being the most targeted advertising platform. SiriusXM's listenership also has grown because new subscribers are added with new car sales providing free subscriptions to new listeners. However, SiriusXM has no measurable audience, its music programs are not open to ads, and many of its news and talk shows are politically too controversial for many advertisers. This, along with negotiations over Howard Stern's contract with SiriusXM, which ends in December of this year, casts a question mark on satellite radio's growth. Streaming radio will see additional growth through car infotainment units and connected devices such as smart TV's and home appliances.

Competitive Market Differentiators

- "A big part of Sirius' listenership comes from people who buy new cars, and so they become subscribers for free for the first few months or a year. They're counted as subscribers in Sirius' subscriber base. Another big part is from people who love Howard Stern. Stern's contract is up at the end of 2015, and that's put a question mark on Sirius. The last time his contract was up, negotiations went to the very last second but he signed on with them again for another five years. We assume it'll be the same this time and he'll negotiate with them till the end and sign up again for another few years, even if he might be on less frequently."
- "It would really hurt their [Sirius'] subscriber base if he ends up leaving. For now, it remains a question mark. They have a lot of other content but it will be tough if he leaves."
- "I am limited in doing business with Sirius. It doesn't take any advertisement on their music stations and it's not for every client. Despite their growing subscriber base, I can only advertise on some channels, like news, talk and sports channels, and Howard Stern. However, many of these are very politically one-sided so a lot of our advertisers won't buy those channels. Howard Stern is considered controversial by a lot of advertisers so I can't buy that either. You have to find the right type of advertiser to advertise with them."



- "Satellite radio isn't even measured by Nielsen. When you buy it, it's because of their large subscriber base and because they have shows that are popular. But you don't know how many people your ads are reaching. All you can do is make an educated guess. But satellite radio subscribers are growing too, because of new car sales."
- "Most of the dollars SiriusXM pulls in comes from subscribers. I don't think they care as much about advertising as Pandora does."
- "Pandora is still by far the biggest in internet radio. They're huge. About 80 million unique people listen to Pandora each month. That's a very big number. When I get a digital audio budget, a large portion of it goes to Pandora."
- "The other platforms that are gaining a little bit of ground are Spotify, Apple's iTunes Radio and iHeart Radio."
- "iTunes Radio is seeing a lot of growth. They have around 40 million unique listeners. A positive for Apple is that targeting is made simple with them. Pandora depends on the user's registration data and you can't know if the data is real, if the user who's streaming a certain song really is a 28-year old male who lives in New York City or even if he's moved. Apple's iTunes requires the user to update their credit card information every month, so they know exactly who the customer is. For an advertiser it's great. If I only want to advertise to males age 18 to 49, I know that every single spot they're serving to a listener is going to a male who's in that age group. There's zero waste. That makes me more confident in buying iTunes radio over any other platform. It's by far the most targeted platform, second to none."
- "iHeart Media put a lot of money into developing iHeart Radio. They also have some of the best station streams around the country, the Clear Channel stations, like Z 100. They have pure plays where you get a unique experience and also streaming stations which are just a stream of the terrestrial stations."
- "Spotify is gaining ground. Their advantage is that the user's account is connected to Facebook, so if the demographics are correct on Facebook, then the targeting works. But you can't always be 100% sure that what somebody puts on Facebook is true."

Looking Ahead

- "Location based advertising in the car is pretty cool, but for our clients, it's not that important."
- "Pandora has enough scale to be able to do location based advertising. They have enough people listening in all the markets. Spotify, and some of the other streaming platforms, are big in LA, NY, Chicago and Miami. But they're not large enough yet in some of the other markets to buy locally."
- "itunes Radio, Spotify and iHeart radio are growing, but Pandora is growing too. Pandora is now also available on new cars, built into the infotainment units. Many consumer products also have Pandora built in, Smart TVs, refrigerators, Jacuzzis. That's a big advantage for Pandora."
- "At this point, I don't expect Apple's Car Play and Android Auto to disrupt the landscape. We have yet to see how they're going to work. We don't know if they're even going to accept advertising. We don't know if they'll be paid or free. We're not considering them at this point."
- "A big part of it is who gets in with which manufacturers. SiriusXM is in almost all new cars. But Howard Stern's contract is something that bears looking at. They could lose audience over that."

"In advertising, the most important are the largest reach in audience and also being able to target down to the demographic."

5) SurveyMonkey Survey

Our SurveyMonkey poll included 157 respondents that have streamed audio in the last month, with 63 respondents that use streaming or satellite music in their vehicles and 94 respondents that do not stream or get satellite music in their vehicles. Respondents that did not use streaming or satellite music in their vehicles did so because the option was not available in their car, was too expensive, a preference for AM/FM radio, or they have all of their music on another device. SiriusXM is the most used satellite or streaming music in vehicles due to the service being already installed in cars and adoption from respondents above the age of 44. Pandora is the second most used satellite or streaming music service in vehicles due to its price and content, and is adopted by respondents 30 to 44 years old and 60 and above. Spotify is one of the top satellite or streaming music services used in vehicles, and is tied for the third most used satellite or streaming music services due to higher adoption from 18 to 29 year olds for its great content and on-demand streaming. SiriusXM, Pandora Free, and Spotify Premium are going to be used the most in the next year in vehicles. Pandora and SiriusXM are tied for having the top spot of best content, followed by Spotify. Paying for a streaming service deters approximately two-thirds of our respondents, more so



for the younger demographics than older. Satellite/streaming music in cars has increased over the past year. Streaming through a smartphone is used more than a built-in dashboard infotainment system, this trend continuing due to growth among the younger demographics.

The 94 respondents who do not stream or get satellite music in their vehicle decline to do so because they do not have the option available in their vehicle (34.8%), it's too expensive (33.7%), they would rather listen to AM/FM radio (22.8%), or all of their music is already on their phone, iPod or mp3 player (21.7%). (Q2)

SiriusXM is the most used streaming/satellite service in respondent's vehicles, but when combining Pandora's tiered platforms it shows that more respondents use that service.

- SiriusXM (51.6%), Pandora Free (43.5%), YouTube (12.9%), iHeartRadio (12.9%), Pandora One (9.7%), and Spotify Premium (8.1%) are the top used streaming/satellite music services respondents use in their vehicle. (Q3)
 - Pandora is used the most by respondents between the age of 30 to 44 and 60 and above. (Q3, filtered by age)
 - Spotify is used the most by respondents between the age of 18 and 29. (Q3, filtered by age)
 - SiriusXM is used the most by respondents above the age of 44. (Q3, filtered by age)
- SiriusXM (43.5%), Pandora Free (22.6%), Pandora One (6.5%), and Spotify Premium (6.5%) are the most used streaming/satellite music services in respondent's vehicles. (Q4)

Content, price and whether the service came installed in the vehicle are the top reasons respondents used their most-used music streaming/satellite service. SiriusXM is used due to it coming with the vehicle; Pandora is used due to price and content, while Spotify is used due to its content and on-demand streaming.

- Content (42.6%), Price (37.7%), and coming with the vehicle (27.9%) are the top three reasons respondents are using their most-used music streaming/satellite service over another streaming service. (05)
 - SiriusXM users choose to use the service due to it coming with the vehicle (59.3%), and content (25.9%). (05, filtered by 04)
 - o Pandora users choose to use the service due to price (76.5%) and content (52.9%). (Q5, filtered by Q4)
 - Spotify users choose to use the service due to content (100%) and to have on-demand streaming (33.3%). (Q5, filtered by Q4)
 - 18 to 29 year olds choose their streaming service based off of content. (Q5, filtered by age)
 - 30 to 44 year olds choose their streaming service based off of price. (05, filtered by age)
 - Respondents age 45 and above choose their streaming service based off of if it came with the vehicle and content. (Q5, filtered by age)

SiriusXM, Pandora Free, and Spotify Premium are going to be used the most in the next year in vehicles.

- Respondents believe that they will be using SiriusXM (37.7%), Pandora Free (24.6%), and Spotify Premium (8.2%) the most in their vehicles in the next year. (Q10)
 - 18 to 29 year old respondents plan to use Pandora Free, Spotify Premium, and SiriusXM the most in the next year. (Q10, filtered by age)
 - 30 to 44 year old respondents plan to use Pandora Free, and SiriusXM the most in the next year. (Q10, filtered by age)
 - Respondents age 45 and above plan to use SiriusXM the most in the next year. (Q10, filtered by age)

Pandora, SiriusXM are tied for having the top spot of best content, followed by Spotify.

- Pandora (27.9%), SiriusXM (27.9%), and Spotify (18%) are believed to have the best content. (Q11)
 - o Respondents between the ages of 18 and 29 believe Spotify has the best content. (Q11, filtered by age)
 - Respondents between the ages of 30 to 44 believe Pandora and SiriusXM have the best content. (Q11,
 - Respondents age 60 and above believe Pandora has the best content. (Q11, filtered by age)

Paying for streaming/satellite music services deters roughly two thirds of respondents, and deters younger respondents more than older users.



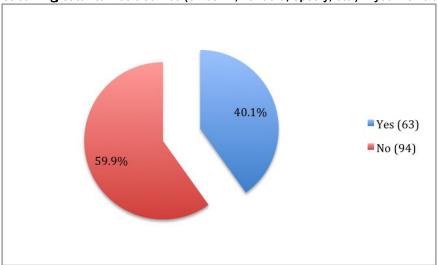
- Subscription rates for streaming/satellite music services deter 63.9% of respondents from using that specific streaming service. (Q6)
- 36.1% of respondents pay for a streaming/satellite music service. (Q7)
 - o 37.7% of respondents are not at all willing to pay for a streaming/satellite music service. (Q7)
 - Younger demographics were the most not willing to pay for a streaming/satellite service when compared to the other age groups (Q7, filtered by age)

Approximately a third of respondents have increased their listening habits of streaming/satellite music in their vehicle, with respondents under the age of 44 increasing their use the most.

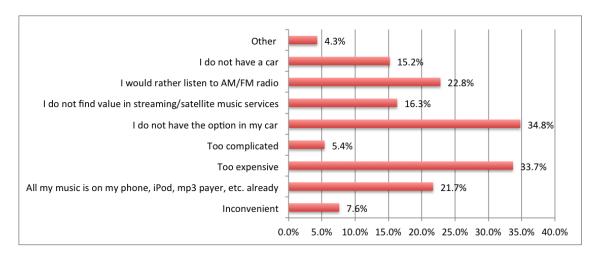
- 32.8% of respondents have increased their listening habits of streaming/satellite music services in their car over the last year. (Q8)
 - 13.1% of respondents have decreased their listening habits of streaming/satellite music services in their car over the last year. (Q8)
 - o Respondents under the age of 44 are increasing their listening habits of streaming/satellite music services the most in cars compared with the other age groups. (Q8, filtered by age)

Streaming through a smartphone is used more than a built-in dashboard infotainment system, and this trend is being increased by respondents comprising the younger demographics.

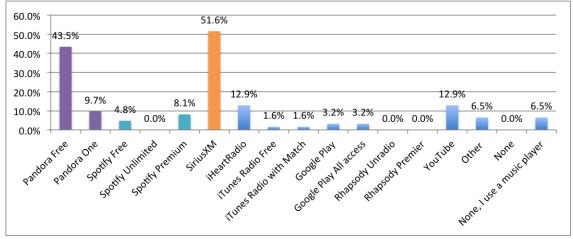
- 49.2% of respondents stream their music through a smartphone. (Q9)
 - o 44.3% of respondents stream their music through a built-in dashboard infotainment system. (Q9)
 - Younger demographics are more likely to stream their music through a smartphone, whereas older demographics are more likely to use a built-in dashboard infotainment system to stream music. (Q9, filtered by age)
- 1. Do you use a streaming/satellite music service (SiriusXM, Pandora, Spotify, etc.) in your vehicle?



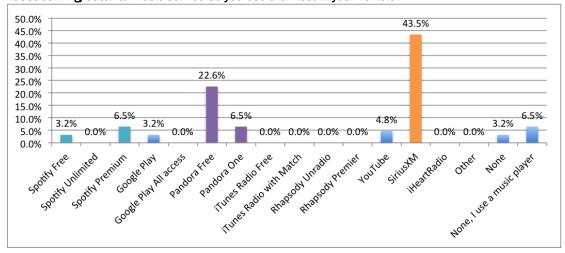
2. Why don't you use a music streaming/satellite service in your vehicle? (select all that apply)



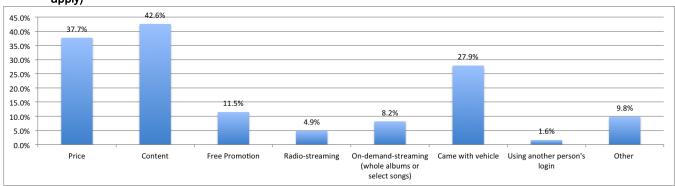
3. What streaming/satellite music services do you use in your vehicle? (select all that apply)



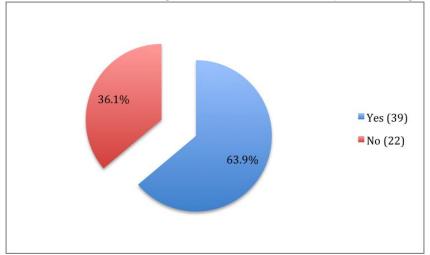
4. What streaming/satellite music service do you use the most in your vehicle?



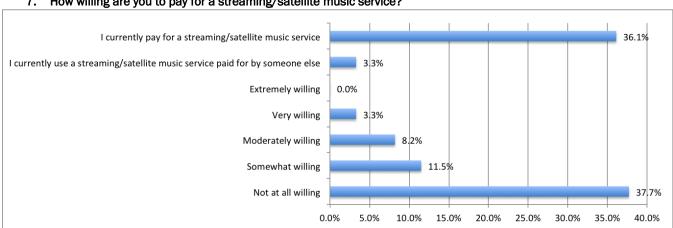
Why are you using your most-used music streaming/satellite service over other streaming services? (select all that apply)



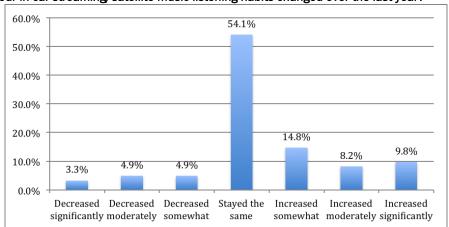
Do the subscription rates (costs) of streaming/satellite music services deter you from using that service?



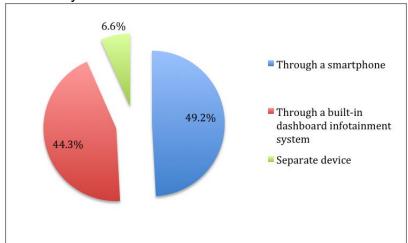
How willing are you to pay for a streaming/satellite music service?



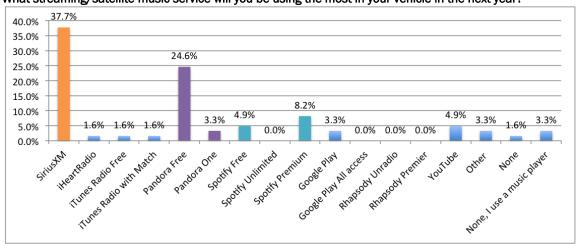
8. How have your in-car streaming/satellite music listening habits changed over the last year?



9. How do you stream music in your vehicle?



10. What streaming/satellite music service will you be using the most in your vehicle in the next year?



27.9% 27.9% 30.0% 25.0% 18 0% 20.0% 15.0% 9.8% 10.0% 4.9% 4.9% 4.9% 5.0% 1.6% Google Ray Unradio 0.0% 0.0% YouTube

11. Which streaming/satellite music service has the best content?

Secondary Sources

The following six sources discuss SiriusXM developments, in particular the future of Howard Stern, and Pandora and SiriusXM competitors. Analysts see iOS—which is hoping to undercut Spotify and Rdio's subscription rates—Android, and MirrorLink as the primary nervous systems in the connected car in 2020.

Competitor Developments

Apple hires <u>Trent Reznor</u> to lead its new streaming music application. Jay Z purchases Tidal and is promoting its artist-owned and premium sound attributes. Some lesser-famous artists criticize the platform as not supporting up-and-coming artists. Analysts see iOS, Android and MirrorLink as the primary nervous systems in the connected car in 2020. SiriusXM's unique programming may not be enough to compete with the abundant free comedy and sports options available through streaming. <u>Bose Corp.</u> has decided to enter the streaming music fray as well.

March 25 Cultofmac.com article

Apple hires Beats Music chief creative officer Trent Reznor to head up Apple's streaming music service. Apple hopes to undercut Spotify and Rdio's \$10 per month price tag at \$8 per month. Some see the price undercutting as a sign of weakness. Users give mixed opinions about Reznor heading the project, and one claims a \$1 per month difference is trivial when considering the company's superior user experience.

- "Apple is planning to unveil a hot new redesign of Beats Music at WWDC. The new streaming service is aimed at killing rivals like Spotify and Pandora, but rather than relying on an Apple software veteran to redesign Beats Music, Nine Inch Nail's front man has been tapped to lead the redesign."
- "Nearly a year after acquiring Beats for \$3 billion, Apple plans to overhaul its music strategy behind the Beats Music redesign, reports the New York Times. Reznor, who was the chief creative officer for Beats, has been made the point man for overhauling the iOS music service to include the streaming service.
- "Early rumors claimed the biggest selling point of Apple's music service could be the price tag. While Spotify and Rdio cost \$10 per month, Apple was aiming to sell its service for \$8 per month, but the company has been unable to convince label executives to go along with their pricing."



- "Apple's inability to secure a lower price than rivals is a sign that the company's leverage has weakened in the music industry. Toni Sacconaghi, a financial analyst for Sanford C. Bernstein, told the New York Times the labels are happy Apple is trying to play catchup for once. 'They're used to being a shaper rather than a responder,' Sacconaghi said. 'This is one of the few times where Apple is playing catch-up and not necessarily coming from a position of strength.""
- "The new app, code named 'Copper,' is being made in collaboration with Reznor, Jimmy lovine, and other Beats and Apple employees. The new service could include some of Beats features like curated playlists, and more visual appeal. Full details are expected to be revealed at WWDC in June.
- User comments:
 - "Letting Trent Reznor design software is as good idea as letting Homer Simpson design cars."
 - "Trent apparently did a great job with the current Beats offering, so no worries there. I am a beats subscriber and I love the UI of the app. Sure, there are some things that need a cleanup but overall, I hope the redesign follows some of the design principles that make the current app a pleasure to use. Second, as far as 'killing Spotify,' Apple doesn't need to kill anything. That being said, being built into iOS and having integration features (i.e. Siri, etc.) not offered by any other service will bring folks in droves."
 - "Right. But asking Siri 'What is playing' used to include links directly to Beats music as well as Spotify to that particular song, and of course iTunes. How nice would it be to tell Siri as a subsequent command, 'add to my playlist' which should absolutely be possible."
 - "Seriously?? ... 'Early rumors claimed the biggest selling point of Apple's music service could be the price tag.' This is the dumbest crap I've read in a while. Like people give a damn over a price differential of twopacks-of-gum-a-month. What happened to Apple's biggest selling point being a seamless and fully integrated experience? Two-bucks ... pffft."

April 20 Allhiphop.com article

Jay Z purchases streaming service Tidal, inserts a new CEO, and is promoting the brand's premium audio quality and artist ownership, which is made up of top-grossing stars. Other artists are not impressed with the line-up and believe it's a ploy to make rich artists richer while developing artists will continue to struggle.

- "Even with the huge roll-out and focus on hi-fi sound, Jay Z's new Tidal streaming service has taken some hits. Almost immediately after its launch, music listeners complained that the \$20 cost for the premium service was too expensive and some artists even denounced the brand altogether."
- "There are now reports Tidal's staff is facing major upheaval as well. Andy Chen has been replaced as CEO and other positions are being reduced. Peter Tonstad, former chief executive of Tidal's parent company Aspiro, has returned as
- "Tidal's new CEO is Peter Tonstad, a former CEO of its parent Aspiro Group. He has a better understanding of the industry and a clear vision for how the company will change the status quo. He's streamlining resources to ensure talent is maximized to enhance the customer experience. We've eliminated a handful of positions and refocused our company-wide talent to address departments that need support and cut redundancies. Tidal's offices globally will remain and grow: we are already hiring for several new positions. We're excited about our future and what's in-store for fans who want the best listening experience."
- "While stars like Beyoncé, Madonna, Kanye West, Rihanna, Nicki Minaj, Alicia Keys, and J. Cole have signed on as part owners of Tidal, there are also musicians that are not supportive of the 'artist-owned' platform. Rock band Mumford & Sons criticized the streaming payout for independent acts."
- "I think smaller bands should get paid more for it, too. Bigger bands have other ways of making money, so I don't think you can complain,' said front man Marcus Mumford, 'A band of our size shouldn't be complaining, And when they say it's artist-owned, it's owned by those rich, wealthy artists."
- "British singer Lily Allen also blasted Tidal's potential unfair treatment of rising artists. 'People are going to swarm back to pirate sites in droves, sending traffic to torrent sites. Up-and-coming (not yet millionaires) artists are going to suffer as a result. ... [M]y concern is that Tidal may set emerging artists back."

Dec. 10, 2014 The Motley Fool article

An analyst believes that the connected car will center on Android Auto or Apple CarPlay by 2020. Another predicts Apple's iOS or MirrorLink, which works with Samsung phones, will power the majority of connected cars at that time. Although



SiriusXM employs a lineup of signature comedic personalities and sportscasters, streaming providers and podcasts provide hundreds of those options for free.

- "By 2020 nearly all cars will be connected to the Internet, according to Gartner, ComputerWorld reported. At that time, roughly five years from now 'about 150 million vehicles will be connected via Wi-Fi, and 60% to 75% of them will be capable of consuming, creating and sharing Web-based data,' the report states."
- "To facilitate that kind of shift, connected-vehicle leaders in automotive organizations need to partner with existing ecosystems like Android Auto or Apple CarPlay that can simplify access to and integration of general mobile applications into the vehicle,' Gartner analyst Thilo Koslowski said in the report."
- "That appears to be happening and another firm, ABI Research, predicted that Apple's iOS in the Car would power about half of them with the bulk of the rest of going to MirrorLink, which works with Samsung's smartphones and tablets. Basically, connected cars are not only coming, but half of them will integrate with the wildly popular iOS and another 40% or so will use software familiar to another swatch of people."
- "Connected cars take away many of the reasons why people subscribed to satellite radio in the first place. Music services like Pandora and Apple's iTunes Radio offer an essentially infinite amount of personally customized radio stations, while Spotify and other similar services put huge libraries of music in front of people on an on-demand basis."
- "Satellite still has a few signature talk personalities including Stern along with Opie, but there are literally hundreds of comedians and other personalities offering high-quality podcasts for free. I followed Stern to satellite, enjoy Opie's new show with comedian Jim Norton, and [I] listen to much of the talk lineup on Sirius's 'Mad Dog Sports Radio,' including flagship host Chris 'Mad Dog' Russo. But my podcast inbox is clogged with new episodes of 'Nerdist,' Bill Simmons' 'B.S. Report,' and the Motley Fool's own podcasts among others, more than I have time to listen to and more than enough to replace the time I spend listening to Sirius while driving."
- "Some will argue that sports content is a difference-maker for satellite, but it's becoming increasingly easier to find local broadcasts of out-of-market games over the Internet. I still need satellite radio for one of the teams I follow-the New York Rangers—as my Connecticut home falls in the Boston Bruins market. But it's easy enough to listen to the games over the Internet with the only remaining hurdle being car connectivity (not a problem in my case as I have unlimited streaming data over Sprint and even my 2010 Hyundai has multiple ports for connecting my phone)."

Dec. 19, 2014 TechTimes article

Bose is entering the streaming music business. Given Bose's history and reputation for high quality, it might be able to effectively compete against Apple's streaming service.

- "While there are plenty of music-streaming services already in play, high-end audio device vendor Bose believes it can do a little better than the others. The company is reportedly planning on entering the streaming market, with the news breaking after a job posting from the company was found on job marketing website ZipRecruiter."
- "There is a parallel to be drawn between Apple's Beats and a streaming service that is already getting support from Bose. Both companies are large electronics companies that have the money to fund a streaming service that may not be as popular as they would hope right away. Not only that, but both Beats and Bose were, at least at a consumer level, headphone companies. While Apple is certainly much larger than Bose, Bose is still doing well for itself with its professional audio products."
- "Which leads to another point. Given Bose's history of creating professional audio products, both for the consumer and the professional audio world, can Bose give consumers something competing services cannot? The ability to stream lossless audio, perhaps? As Internet capabilities continually improve, it is becoming easier to stream larger files, which would not only be great for the audio nerds among us, but would also be in keeping with Bose's aura of
- "It is important to note that Deezer does offer lossless audio streaming, as does a service called Tidal, suggesting Bose will need to offer something more on top of high-quality audio."
- "There is a debate in the music industry about music streaming. While there's no doubt music streaming is great for the consumer, these services are being offered at such low rates that it ends up affecting musicians and labels. Despite this, if Bose were to offer high-quality streaming at a lower rate than either of its two competitors, then it's likely that it would be a hit."



"Bose has some power in the audio industry. It sells millions of headphones per year and provides professional audio in both live and studio situations. If the company is going to start a streaming service, it may start small, but it's sure to be a hit."

SiriusXM Advantages

Now that Howard Stern's contract with SiriusXM is nearly up, he is entertaining other offers and considering retirement. SiriusXM wants to retain Stern at the right price, but will continue to profit if he leaves. An Albany, NY blogger quit his SiriusXM subscription, but one week later rejoined after discovering terrestrial radio was still a terrible experience that had not changed in ten years.

March 11, Bloomberg article

Howard Stern ridiculed SiriusXM on the air after it tried to game him into signing a contract. Although the issue has been resolved, Stern is entertaining other offers and considering retirement. SiriusXM CEO Jim Meyer wants to retain Stern at the right price, but recognizes the company will survive without him. Only five percent of SiriusXM subscribers would consider leaving if Stern departed the service.

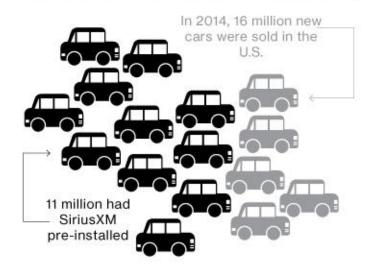
- "Stern told his listeners that his bosses had recently asked him if he'd like to move the start of his show an hour later, to 7 a.m. That way everybody would get an extra hour of sleep. It seemed like a generous offer; Stern thought it over and accepted. It was then that management balked, insisting he'd misunderstood. He could start his show at 7 a.m., they informed him, if and when he renewed his contract with SiriusXM, which is set to expire in December 2015. Stern said he was enraged by what he felt was a strategic bait-and-switch. For the next several minutes, he vented. 'It's not even clear to me who works for who,' Stern said. 'I'm pretty sure if I left, it would be very bad for the company."
- "He's the top rainmaker in American radio, capable of generating hundreds of millions of dollars a year in revenue for whomever employs him and his entourage of baroque sideshow performers known as the Wack Pack. Since 2005. Stern's show has appeared on SiriusXM, the nation's sole satellite radio service, which charges subscribers for access to some 175 channels of curated music, live sports, and talk shows."
- "'On paper, the marriage between Stern and SiriusXM has never been better. Yet its future remains in limbo. Stern hasn't said if he intends to extend his contract. The Howard Stern Show is still the single most important piece of content that SiriusXM has-and the most expensive,' says Barton Crockett, an analyst with FBR Capital Markets. He estimates that Stern's contract costs his employer about \$80 million a year. 'I think he's worth every penny. It would be great for them if they can keep Howard Stern."
- "In the past, Stern has always let his contract decisions go down to the wire. He has nine months to entertain offers and let the drama play out on his show. 'Never think of me as a disc jockey,' he said on-air last July. 'Because the one thing that matters to me more than anything after all these years in radio is that you treat me with respect. I'm sick and tired of how management speaks to talent. Talent is what drives this world. There is no Sirius without talent. Doesn't matter how many satellites you f---ing stick in the air."
- "Stern's looming free agency comes at a time of upheaval in the radio business. Many Internet radio and streaming music companies, such as Spotify and Pandora, are competing with Apple and Google to further disrupt the marketplace. The coming battle, whether in the car or on a computer or smartphone, promises to be fierce. In this unsettled territory, an exclusive deal with Stern could be a fearsome weapon. In theory, he could do for somebody in Internet radio what he did for Sirius in satellite radio."
- "SiriusXM enjoys a unique advantage in the American automobile. Satellite radio is the only premium audio service widely integrated into cars. As their software systems become increasingly Internet-connected via internal modems, dashboard systems are expected to become more like mobile devices. Once that happens, the same crush of companies currently fighting it out on consumers' computers and smartphones will likely extend the battle lines into the car."
- "Already, Silicon Valley is eyeing the dashboard lustily. In March 2014, Apple announced a product called CarPlay that allows drivers to project their iPhone menus onto the dashboard screens of certain vehicles, such as the 2015 Hyundai Sonata. In June, Google countered with a similar product called Android Auto. Later this year, Google will roll out a premium subscription audio service called YouTube Music Key."
- "On message boards, Stern's fans are tossing out ideas. He should move to the Internet. Or sign with Apple. Or start a podcast. The breakout popularity of Serial, a 12-episode podcast from the makers of This American Life, inspired more than one trend spotter to declare 2015 'the year of the podcast.' In February a caller asked Stern what he



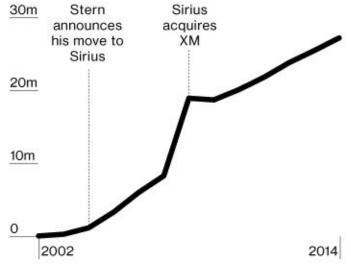
- thought of the medium. 'It's stupid. It's a waste of time,' he said. 'If you want to be in radio, forget a podcast. Podcasts are for losers."
- "[SiriusXM CEO Jim Meyer] has been making sure Stern feels appreciated. Six months after the dispute with his bosses, Stern got his wish: The show now starts at 7 a.m. 'On his show, he always talks about how happy he is," Meyer says. But 'just like your 12-year-old, he's always happy until something else comes along."
- "SiriusXM has proven that people will pay for radio if you offer them something easy to use and more enticing than what's available free, Meyer says. What most satellite radio customers pay for, he says, is the variety. 'It's not one piece of content,' he says. 'And please don't print that Howard Stern is only one piece of content. He'll call me the next day.""
- "SiriusXM is constantly making additions to its programming bundle of curated music channels, talk radio shows, and live sports. It added shows from Ellen DeGeneres, Jenny McCarthy, and Hoda Kotb designed to woo female car buyers. In 2013, in a bid to attract more Hispanic subscribers, it launched a channel anchored by Eddie 'Piolín' Sotelo, one of the top Spanish-language radio personalities in the U.S. Less than a year later, SiriusXM dropped the channel. 'Approximately nobody would pay for him,' Meyer says. 'That's the cool thing about Howard. People are willing to pay,' The company isn't giving up on the demographic. It will soon introduce a channel curated by Pitbull. the bilingual pop star to whom big U.S. brands frequently turn when trying to reach Latino customers."
- "Meyer says that over the years, SiriusXM has grown adept at converting new-car owners into paying subscribers using free trial subscriptions. The company is working to get better at targeting purchasers of used vehicles, which are now more likely to have satellite radio capabilities baked in."



WITH A LOCK ON NEW CARS ...



... SUBSCRIPTIONS ARE UP



DATA: COMPANY REPORTS

- "Internet companies have been trying to colonize the car for years. Meyer recalls a colleague coming into his office in 2004 in a panic because BMW was adding a jack allowing a driver to plug an iPod directly into a car's stereo system and operate it from the steering wheel. 'Every automaker said, 'We gotta do this!' So today there's not a car made that doesn't have that jack,' Meyer says. 'We haven't come a hell of a lot farther since then. Yeah, there's no wire anymore. Yeah, that device is a gazillion times more powerful than the iPod was. But you're still trying to accomplish the same thing. Hasn't had any impact on our business.'"
- "Meyer says that though someday all cars will be fully Internet-connected, the change will take place glacially. That's
 in part because car manufacturers tend to err on the side of caution when rolling out technology—if something goes

awry, customers' lives are at stake—and, because people hold on to cars for much longer than, say, smartphones. As a result, new features typically take several years to become commonplace. 'So when people say, "Oh, I'm going to put my technology in the car"-good luck,' Meyer says. 'We've spent billions of dollars and lots of time to do this. This is not going to change in three years."

- "Meyer says he's positioning the company for that future, when all cars are Internet-enabled. In 2013, SiriusXM paid \$530 million to automotive services company Agero for its connected-vehicle division, which makes software embedded in cars to provide constantly updated roadside assistance or stolen-vehicle tracking, for example. 'Being on the inside, it protects our position in the vehicle,' Meyer says."
- "Neither Stern nor Meyer knows exactly how much of a hit SiriusXM would take if Stern left. Satellite radio is a oneway signal, making its audiences more difficult to measure than, say, Internet radio. There's no Nielsen for SiriusXM. Meyer says subscribers who originally signed up just to hear Stern now, after nine years, listen to other things, too. 'So if Howard goes, will all of them go?' Meyer asks. 'I don't know.'"
- "In January 2014, Macquarie surveyed 800 SiriusXM subscribers and found that while SiriusXM is available on the go for premium subscribers via Web and mobile apps, 84 percent of listening takes place in cars. Of the respondents, 12 percent said they listen to Stern-the equivalent of about 3.2 million listeners. Five percent said they'd consider leaving SiriusXM if Stern departed. A rough estimate suggests it could cost the company about \$240 million in lost revenue annually if he left. For a company that generated \$4.2 billion in revenue last year, that would be a substantial blow-but hardly crippling."
- "Stern and SiriusXM might both be better off sticking together, analysts say. Amy Yong, who follows the company for Macquarie, says there's speculation that Stern could launch his own direct-to-consumer product. But she's skeptical. 'There's more than just the dollar amount that goes into these decisions,' she says. 'SiriusXM makes it very nice for him to work. Why disturb that?""
- "Crockett says SiriusXM is 'highly likely' to keep Stern. He points out that Stern's alternatives come with short steps backward in compensation, reach, or prestige. If Stern returned to terrestrial radio, he'd find himself wrestling with government regulators. If he launched a direct-to-consumer product, he'd have to spend significant time and money building the infrastructure. And if he went to Google or Apple, his show would be less accessible for U.S. drivers. By 2017, according to estimates from IHS Automotive, Apple CarPlay and Android Auto will be available in only 3 million vehicles in the U.S. and Canada. By then, SiriusXM estimates that more than 100 million American cars will be satellite-radio-enabled."
- "Crockett doubts music-oriented services such as Spotify or Pandora would have enough money to poach Stern even if they wanted to. 'I don't know that anyone else can give him as good a combination of lifestyle and money as he can get at SiriusXM,' Crockett says. 'If you go to one of these emerging things, it's not going to be at the same level. SiriusXM has finally become a big platform."
- "Bob Lefsetz, a music industry analyst, says Stern, having spent a decade building SiriusXM into a major audio platform, is reaping the benefits. These days, he's getting A-list celebrity guests-Larry David, Gwyneth Paltrow, Bradley Cooper-who would have been unthinkable not long ago, when sex workers, weirdos, and marginal celebrities typically jockeyed for attention. The Hollywood publicists who used to snub Stern's show are scrambling to get their clients a piece of his coveted airtime. 'Howard now has the cultural impact and level of acceptance that he's always desired and had never reached previously,' Lefsetz says."
- "In January, when a caller asked about his plans, Stern called Meyer a 'very sweet man' and praised SiriusXM's strategy. 'It's a great place to be,' Stern said. 'If I'm going to do some more radio, he's the first guy I'd talk to.' He then revealed cryptically that he'd recently gotten an intriguing job offer. To do what and for whom, he didn't say. The problem, he lamented, is that there are only so many hours in the day. Maybe he'll just retire. 'It would be interesting, not to do anything,' Stern said. 'I think I'd really be good at that.'"
- "If he walks away at the end of 2015, Stern will be in good company. In May, David Letterman will host his final Late Show on CBS. And at some unspecified date later this year, Jon Stewart will anchor his final night of The Daily Show on Comedy Central. 'I always think, 'Wow, I need the radio, and I need to have an audience,' 'Stern told his listeners. 'Maybe I don't.'"

April 13 Timesunion.com blog

An Albany, New York blogger grows weary of paying SiriusXM \$16 per month and decides to end his subscription after ten years with the service. He reports that the SiriusXM sales people aggressively tried to convince him to stay. The blogger resorts to listening to terrestrial radio, and after only a week of enduring terrible programming and an abundance of commercials, gladly rejoins SiriusXM the next time its sales reps called on him.



- "After ten years I made the tough choice to discontinue my SiriusXM. I love the content and have always been a fan of Howard Stern, but the \$16-a-month bill was feeling a bit like robbery. Trying to finish things with the Sirius people is like trying to fight your arm out of a Great White's mouth. They offered all their one-time offers. But I stayed strong. And last Friday the signal from the Sirius mothership was lost."
- "For the first time since my mid-twenties I was back on terrestrial radio. The lack of FM selection originally motivated me to move to satellite in '05. But how bad could it still be? I'm sure Albany Broadcasting and Clear Channel have upped the ante. After 'scanning the ban' a few dozen times in my first five minutes back on the local wavelength, I was quickly reminded how unbelievably bad FM radio is around here."
- "While the rest of the world's entertainment mediums have made titanic advancements the last ten years, Albanyarea radio has not done an iota of updating. Shortly after my return to terrestrial I was transformed back in time to my senior year in high school, when I had the Ford Tempo with a cassette deck and JL Audio speakers in the trunk. Absolutely nothing has changed. It's the same voice saying, '88.3 the Saint.' Fly 92 is still today's hits; good for the kids, bad for me. B95.5 and The River 99.5 = the same six songs over and over. 98.3 is your source for the same aggressively-generic oldies. 'Build me up, buttercup' anyone? 102.3: a poor-man's 92.3. 103.5 & 103.9 continue their reign as the most horrible station(s) on earth. That buffoon Uncle Vito is still on PYX 106. Classic rock ... here comes 'Start me up' and 'More than a feeling.' Never heard them before. Then there's Country 107.7. I'll pass, partner."
- "The morning talk teams are nails down a chalkboard, on every channel. They all have that same gimmicky delivery and that overacting to sell bits and who-cares news stories. It's like Albany morning DJs are actually mocking morning DJs. It's so bad it's good. And by good I mean God-awful. The other day B95.5 interviewed Uncle Vito on their wake-up show. He's lost a hundred pounds since St. Pat's 2014. That qualifies as celeb interviews around
- "Don't get me started on the commercials. I drove from Clifton Park to Latham THEN back to CP, and got to hear (maybe) four songs. And I was working that radio so hard smoke was coming off the dial. I couldn't touch a song to save my life. Every station runs the same spots. The endless whip of Billy Fuccillo almost made me steer my car off the Thad (that's the Twin Bridges to the layman). Maybe I've been spoiled by Sirius, but the commercials just went on and on. When I finally settled on 'Livin la vida loca' on 105.7, my wife told me that station was far worse about a month back. Apparently, to be funny, 105.7 played Christmas music 24/7 in March. Hilarious, guys."
- "It's kinda cliché to say local radio is the worst, I get that, but I'm just blown away at HOW bad. And not just bad, but frozen in time from ten years ago. There're a slew of new country stations, I came across those. Unfortunately I don't give a damn about country. I live in New York. Not Nashville. Since discontinuing my relationship with SiriusXM, I've been a perpetually-enraged radio listener. Wrestling with these Albany stations boils my blood in ways I can't rightly explain."
- "This past Saturday, when the SiriusXM people phoned me with a last-chance offer to sign back on, I didn't even let the telemarketer finish his pitch. He had me at 'SiriusXM calling.' I enthusiastically OK'd a reconnection and the deal was done. In the end I lasted roughly one week with local radio. It was a frustrating detour down musical memory lane (by that I mean no music and nonstop HUGE!!!). Only \$16 a month? Feels a bit like stealing."

Additional research by Seth Agulnick and Eva Cahen.

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