

Arbitron/Coleman

# The Broadband Revolution:

*How Superfast Internet Access Changes Media  
Habits in American Households*

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## Overview

Welcome to the most complete profile of broadband consumers in America today. Arbitron and Coleman have undertaken this examination of consumers who are now utilizing high-speed Internet connections at home to access the Internet.

The goal of this study is to examine how people with broadband Internet access at home use electronic media and entertainment differently from those who do not. We will examine what happens to the media habits of Americans when superfast Internet connections become available. We will specifically review how streaming and downloaded media are being used in broadband households.

This document can be found free of charge at [www.arbitron.com](http://www.arbitron.com) and [www.colemanresearch.com](http://www.colemanresearch.com). We will begin with background information on the broadband revolution, a description of the study's key findings, and Coleman and Arbitron's recommendations based on these findings.

## Significant Highlights

The following are nine major findings of the study. A subsequent section of this report, entitled “Key Findings,” will expand on these and describe some additional findings.

- People with broadband Internet access are bigger consumers of electronic media and entertainment. Compared to the average household, Americans with broadband access spend 22% more total time with electronic media.
- Broadband catapults the Internet to a media time spent position on par with television and radio. The average American spends 33% of his or her electronic media time each day with television, versus 28% with radio and 11% with the Internet. In broadband homes, the Internet’s share of media time surges to 21%, equivalent to television and radio at 24% and 21%, respectively.
- Nearly half (46%) of people in broadband homes say they are buying things online more since they got the service.
- Broadband is “hot” with American consumers. Satisfaction with broadband is extremely high, primarily because it delivers on the speed promise users signed up for. As a result, subscribers are highly likely to recommend broadband to friends.
- Broadband users are nearly twice as likely to watch or listen to downloaded or streamed content from the Internet than are people living in households with dial-up access. They are nearly three times more likely to do so on a regular basis.
- The amount of time per day that broadband users are spending with downloaded or streamed content is still relatively small. Television usage has declined even more than radio usage in broadband households, but it appears that consumers are replacing their television viewing with Internet usage in general, and not necessarily with increased usage of streaming and downloaded video.
- Most users of Internet audio perceive their usage as an addition to their AM or FM radio listening. Broadband users rate radio second highest in satisfaction behind the Internet.
- People in broadband households are twice as likely to sample Internet-only audio channels than are dial-up users. Nonetheless, listening to streams of AM or FM radio stations is more prevalent than Internet-only audio channel listening.
- Listening to Internet-only audio is not necessarily growing out of widespread dissatisfaction with radio, but due to a desire for a greater variety of music than local radio is perceived as offering.

## **How the Study Was Conducted**

A total of 3,283 people were surveyed to probe media usage, Internet and webcast activity in households with broadband and those with typical dial-up Internet connections. In preparation for this research project, focus groups were conducted in numerous markets to understand the nature of the broadband experience and the media habits, perceptions and attitude of broadband users compared to dial-up users. Findings from these focus groups helped develop the questionnaires for both online and telephone studies.

In August 2000, telephone interviews were conducted with 1,023 people in markets on the leading edge of broadband access (San Diego, Washington, Austin, Denver and Seattle). A special sample of 502 people with broadband access at home completed the interviews. An additional sample of 521 people chosen from households at random was utilized to compare against the broadband sample. In a similar fashion, 2,259 members of a national panel of Internet users completed online questionnaires. Responses were divided between the 1,093 broadband users and the 1,166 dial-up users for comparison purposes.

In this document, we will refer to the telephone sample as the “Leading Markets” sample. We will refer to online sample as the “National Sample.”

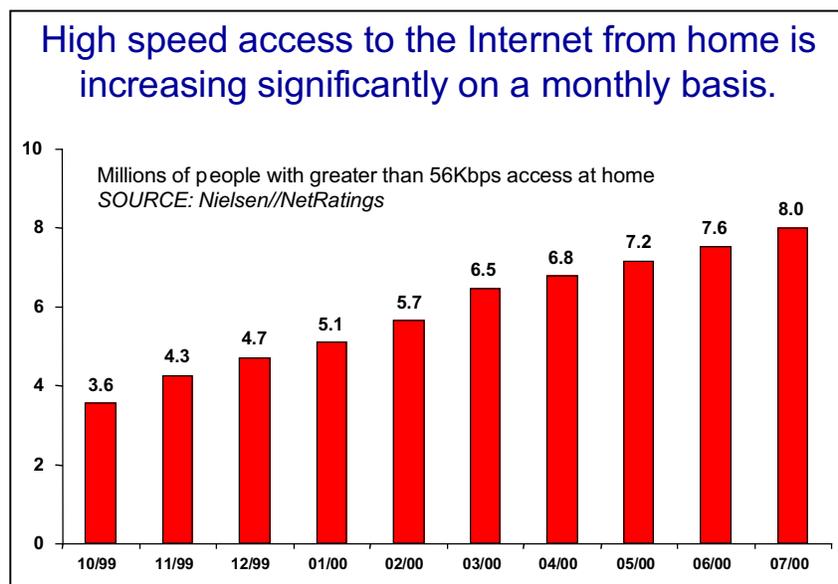
## Setting the Stage: The Broadband Revolution Is On

Broadband refers to technologies enabling Americans to access the Internet at speeds that are dramatically higher than those afforded by traditional dial-up connections. While technologies like ISDN, T1 and T3 lines have allowed many American businesses to connect at high speeds, the cost and complexity of such services have kept them out of most American homes.

Today, however, new technologies such as cable modems that are generally provided by cable television companies and digital subscriber lines (DSL) that are provided by telecommunications companies are delivering residential broadband access. In addition to the high speed of such services, they are attractive to many Americans because they provide a continuous connection to the Internet and they do not tie up users' phone lines while they are connected.

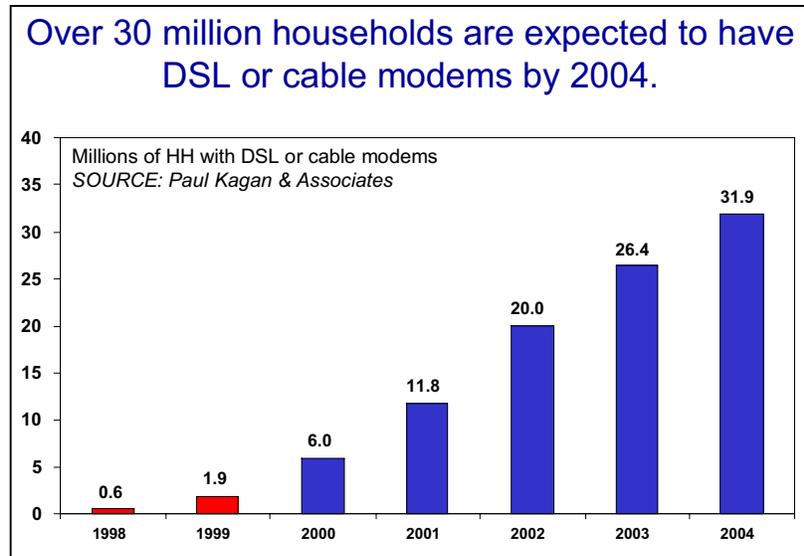
While definitions vary, most classify Internet connection speeds of 100 kilobytes per second (Kbps) or higher as broadband. By comparison, dial-up connections are generally limited to speeds of no greater than 56Kbps. Technologies like cable modems and DSL actually provide connections at speeds much greater than the 100Kbps threshold, allowing providers of such services to tout downloading speeds that can be up to 100 times faster than dial-up access.

As of today, the vast majority of American households with Internet access are using dial-up connections. The number of people with Internet access at speeds in excess of 56Kbps at home, however, is increasing at a dramatic pace. As of July 2000, 8 million people had this capability.



What is most striking about this figure is that it has more than doubled in nine months. Nielsen//NetRatings estimates that only 3.6 million people could access the Internet at speeds in excess of 56Kbps at home as of October 1999.

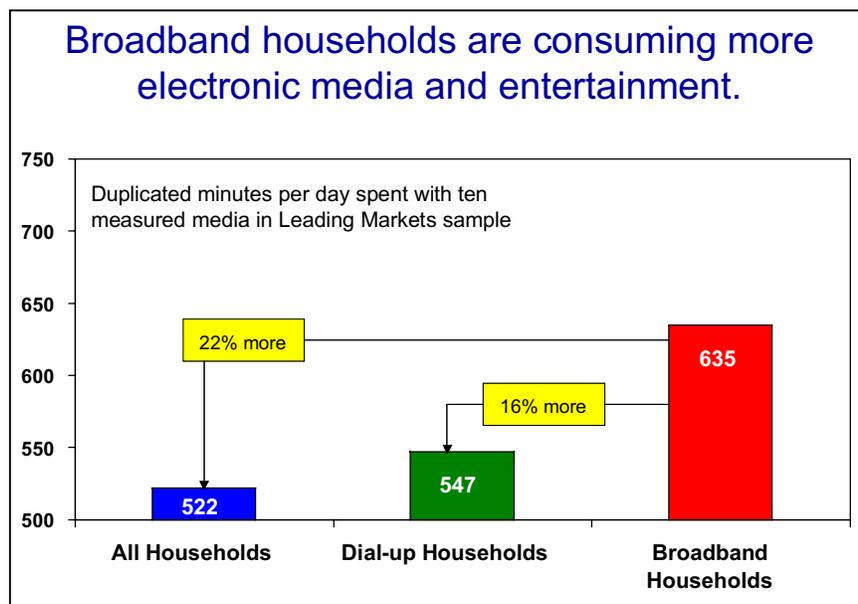
Paul Kagan & Associates projects residential broadband access to continue growing at even more impressive rates. Kagan estimates that by the end of this year, 6 million American households will have access to the Internet through either cable modems or DSL. By 2004, Kagan projects this number to more than quintuple, with 31.9 million households subscribing to one of these services.



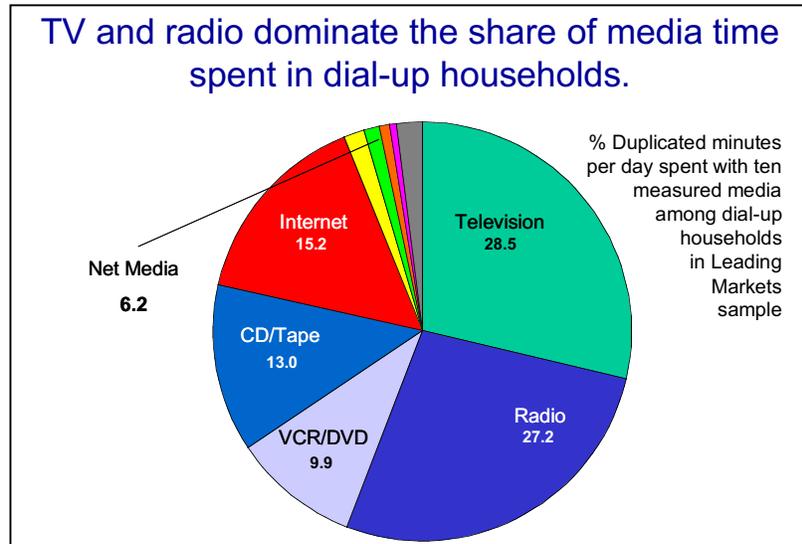
Scarborough Research, which measures consumer behavior in 66 of the nation's largest markets, reports that 8.9% of Americans in these markets expect to get cable modems or DSL within the next 12 months. This is equivalent to roughly 11.4 million new broadband consumers in these markets. While Scarborough reports that the nation's largest markets will see the most significant increases in the number of residential broadband subscribers—more than 500,000 people each in New York, Los Angeles, Chicago and San Francisco expect to get cable modems or DSL in the next year—the highest growth rates will be in Western markets like Austin, Denver, Phoenix, San Francisco and San Diego. (A complete listing of expected broadband adoption by market is included in an appendix to this report.)

## Key Findings

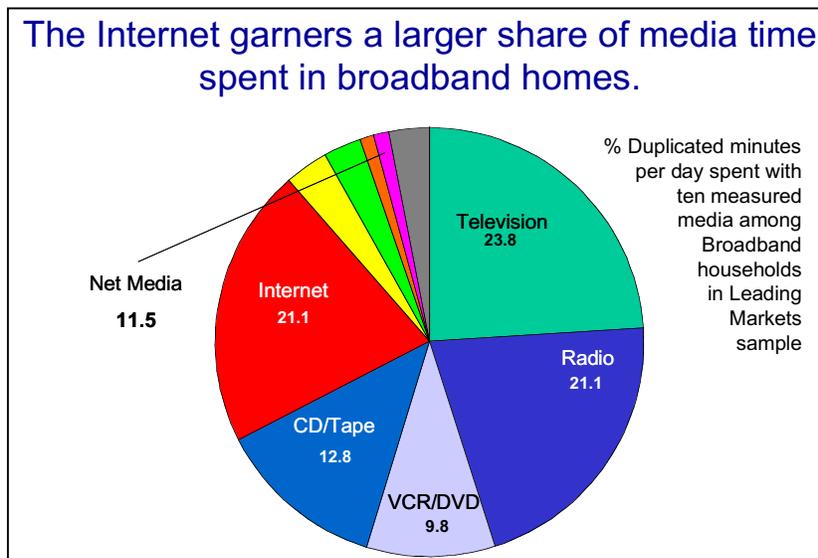
- Broadband users spend more time with media overall compared to the average American.** Respondents in the Leading Markets sample were asked to estimate the amount of time in a typical day they spend listening to the radio, watching television, listening to music on CDs, tapes and records, watching videotapes and DVDs, using the Internet, listening to streaming audio, listening to downloaded audio files, watching streaming video, watching downloaded video files and playing Internet games. Including duplication (which accounts for the fact that consumers can utilize more than one of these media simultaneously), people in broadband households consume an average of 635 minutes of electronic media and entertainment in a typical day. This represents a 16% increase over the amount of time reported by people in dial-up households, and 22% more than the average consumer.



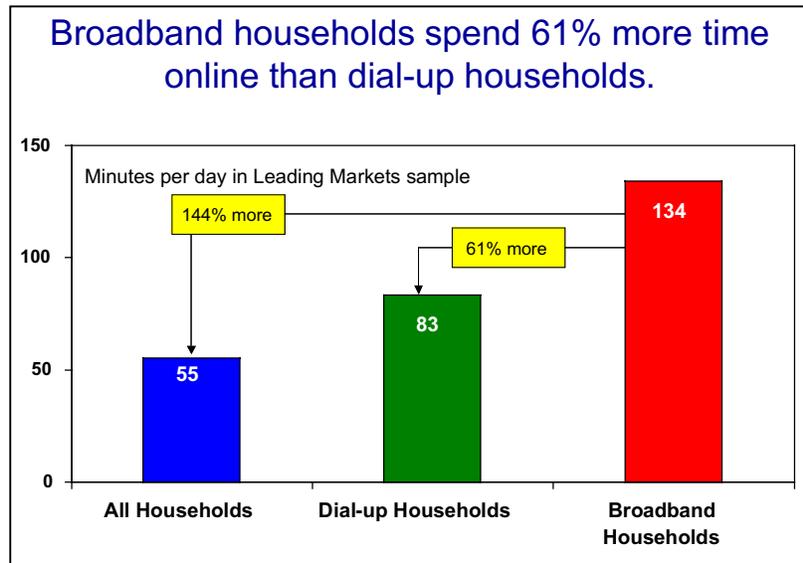
- 2. Broadband catapults the Internet to a media time spent position on par with television and radio.** The average American spends 33% of his or her electronic media time each day with television, versus 28% with radio and 11% with the Internet. In households with dial-up access, the Internet’s share of media time stands at 15%, significantly lower than radio and television’s position.



In broadband homes, however, the Internet’s share of media time surges to 21%, equivalent to television and radio at 24% and 21%, respectively.

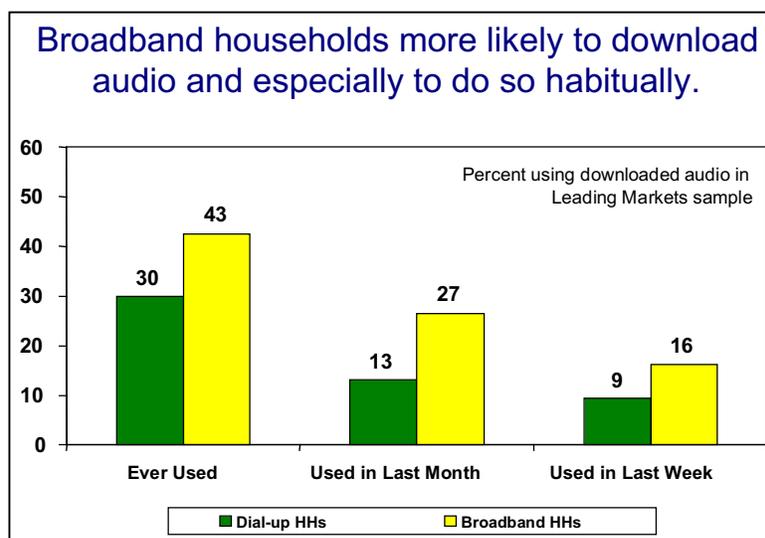


3. **The growth of media consumption in broadband households can mostly be attributed to increased usage of the Internet.** People in broadband homes spend an average of 134 minutes per day on the Internet, 61% more than the 83 minutes per day spent by people in dial-up households.

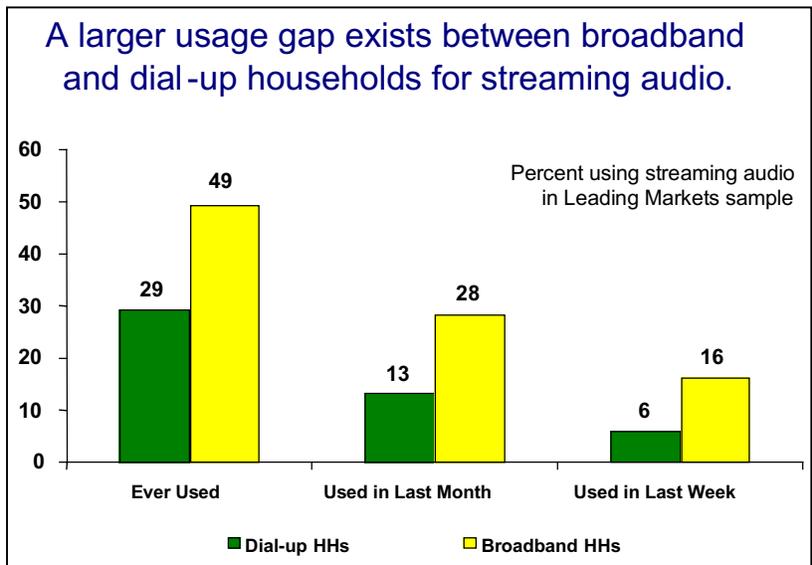


Furthermore, these consumers link their increased Net usage to their broadband access. Seventy-seven percent (77%) of broadband users say they are using the Internet “more often” since they got broadband access at home.

4. **People in broadband households are more likely to use streamed and downloaded content.** While 30% of people in dial-up households have tried downloading and listening to audio files from the Internet, this figure increases to 43% among broadband users. Perhaps more importantly, people in broadband households are more likely to be habitual audio downloaders, as 16% of them have done so in the past week versus 9% of dial-up users.

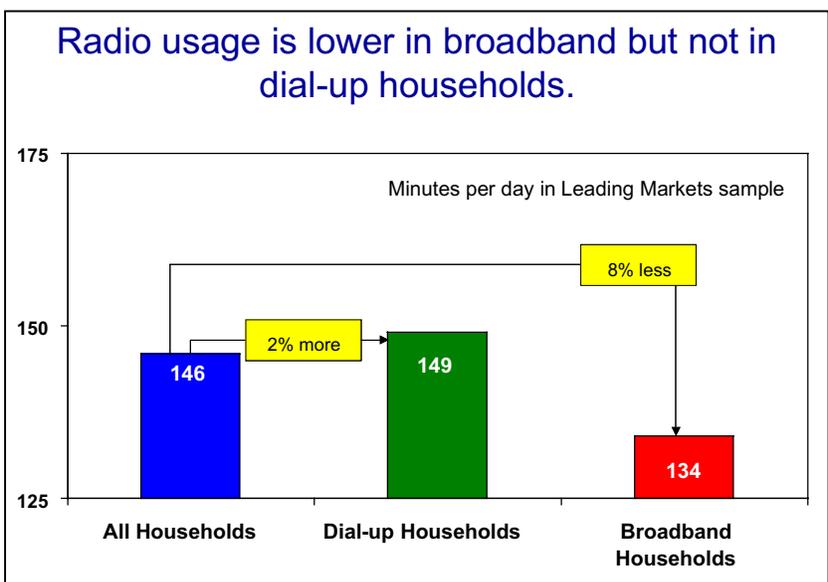


The “usage” gap between people in dial-up versus broadband households is even more pronounced when it comes to streaming audio. Not only have almost half of all people in broadband households ever used streaming audio, the 16% who have done so in the past week is almost three times as high as the 6% of people in dial-up households who have done so.



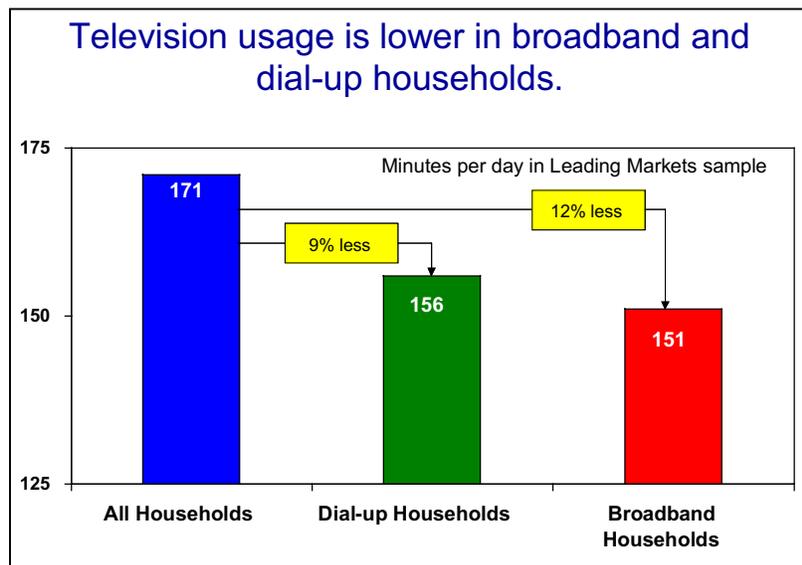
The increased use of downloaded and streaming audio in broadband households is directly related to the introduction of high-speed Internet access. Thirty-one percent (31%) of broadband users say they are downloading audio “more often” since they got the service. The comparable figure for streaming audio is 29%.

- 5. Radio usage levels are slightly lower in broadband households.** People in dial-up households use radio in roughly the same quantity as the overall population. Broadband users, however, spend an average of 134 minutes per day listening to the radio, which represents an 8% drop relative to dial-up users.



**6. People in broadband households perceive that their high-speed access has reduced the amount of time they spend watching television.** Twenty-eight percent (28%) of broadband users say that their television viewing is “much less” or “somewhat less” today than before they got broadband access. By comparison, only 13% of broadband users say their radio listening has declined since getting the service.

In reality, however, the biggest impact on television viewing levels appears to be when people start accessing the Internet through dial-up connections. Dial-up users spend 9% less time watching television during a typical day than does the overall population. Television viewing is even lower in broadband households, but the difference between viewing levels in broadband and dial-up households is not as great as between all households and dial-up households.



The finding further supports this conclusion that—even in broadband homes—usage of streaming and downloaded video content is very low in terms of minutes spent. The table below shows that the number of people using video content is comparable to audio, but even in broadband households, the average user is spending only seven minutes per day each using streaming and downloaded video. Thus, it appears that general Net “surfing”—for which dial-up connections are adequate—is having more of an effect on television viewing than is streaming and downloaded video content.

Streaming Audio

	Dial-up	Broadband
Ever	29	49
Last month	13	28
Last week	6	16

Audio Download

	Dial-up	Broadband
Ever	30	43
Last month	13	27
Last week	9	16

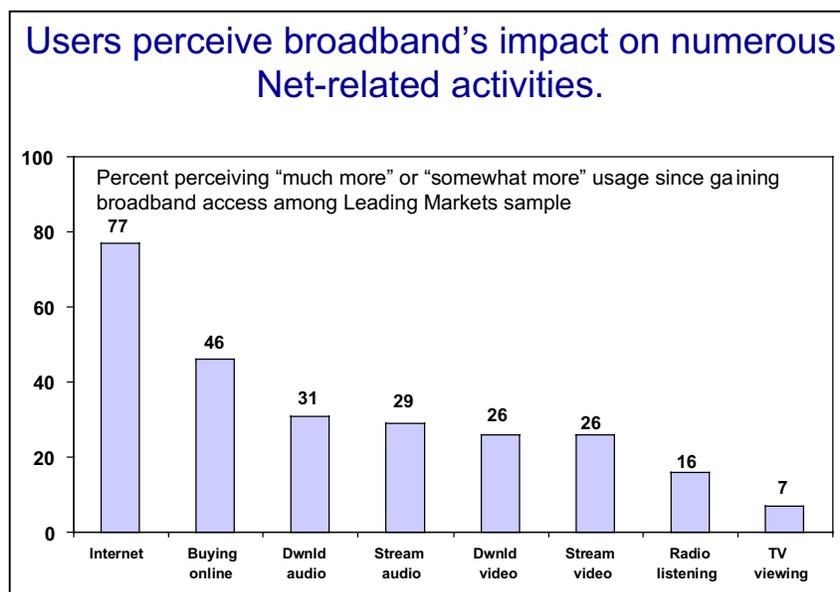
Streaming Video

	Dial-up	Broadband
Ever	24	41
Last month	9	21
Last week	4	12

Video Download

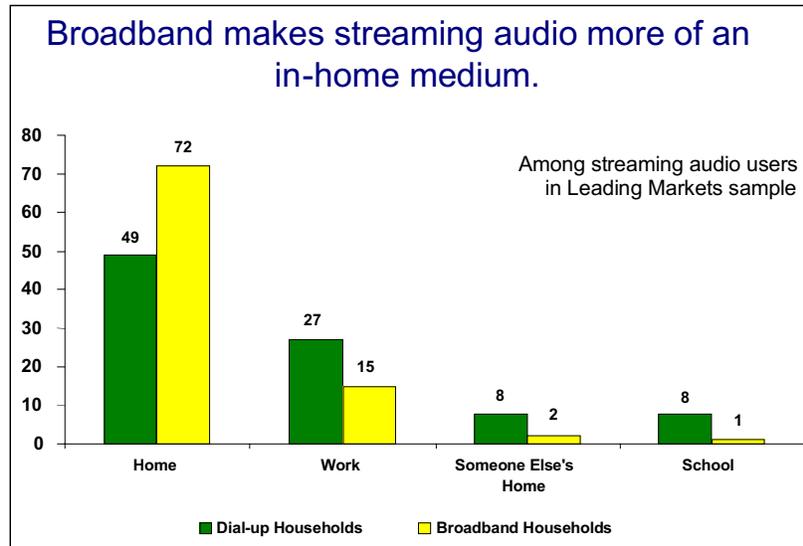
	Dial-up	Broadband
Ever	23	40
Last month	8	17
Last week	3	9

**7. Broadband users represent a significant source of e-commerce. Broadband users perceive significant increases in their Internet usage, online purchasing and downloaded and streaming content usage since getting the service.** As mentioned previously, 77% say they are using the Internet “much more often” or “somewhat more often” since getting broadband. In addition, 46% perceive that they are buying things online at least “somewhat more often.”



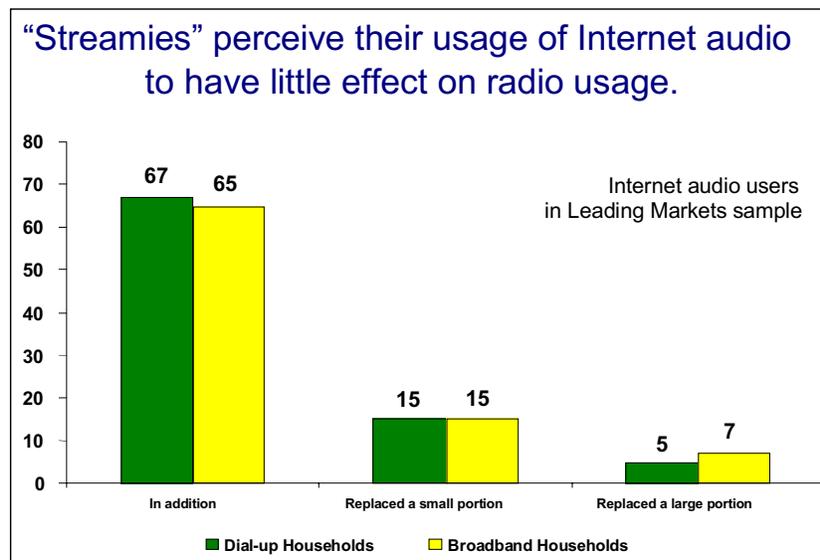
Somewhat fewer perceive that their usage of streaming and downloaded content has increased since they got broadband. These figures—which range from 26% for streaming video to 31% for downloaded audio—are much higher than comparable estimates for radio and TV.

- 8. Broadband makes streaming audio more of an in-home medium.** Home is where streaming audio users are most likely to say they use the medium the most. Roughly half of all “streamies” in dial-up households say this is the case, while 27% cite work as their most frequent place for using streaming audio.



Seventy-two percent (72%) of people in broadband households, however, say the home is the place where they use streaming audio the most. This is nearly five times the percentage that say work is their most frequent streaming audio location.

- 9. “Streamies” perceive their usage of Internet audio to have little impact on radio usage.** The overwhelming majority of those who listen to streaming audio say that such listening is in addition to their listening to local AM or FM stations.

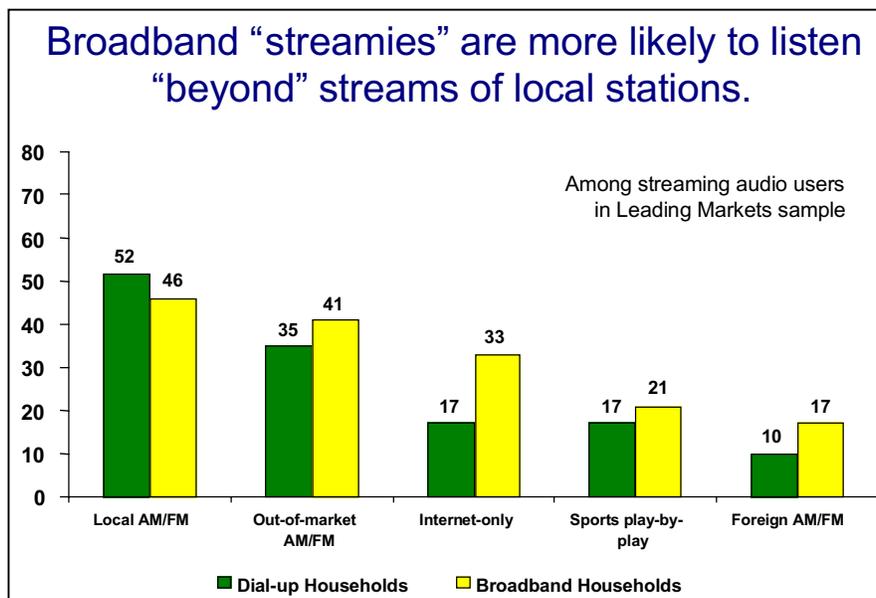


**10. Most consumers are not dissatisfied with radio, even in broadband homes.** In fact, radio is one of the best electronic media according to consumers. Therefore, despite the issues "streamies" have with radio, there is no evidence that the consumer is ready to leave radio en masse for the Internet.

**11. Broadband users are more satisfied with the Internet, downloaded audio/video content and streaming audio/video than those with dial-up access.** Consumers rate their satisfaction with each medium on a 1-to-10 scale. Among average users, radio has the highest satisfaction scores, followed by the Internet. Among broadband users, the Internet receives the highest satisfaction rating, followed by radio. Satisfaction with downloading and streaming of audio and video also grows substantially among broadband users compared to those with dial-up access.

Satisfaction Evaluation of Media Options (Rated on a 1-to-10 scale)		
	Broadband	Average
Internet	7.8	7.0
Radio	7.0	7.3
TV	6.1	6.4
Download Audio	5.8	5.0
Web Games	5.8	5.2
Streaming Audio	5.2	4.4
Download Video	5.0	4.5
Streaming Video	4.9	4.2

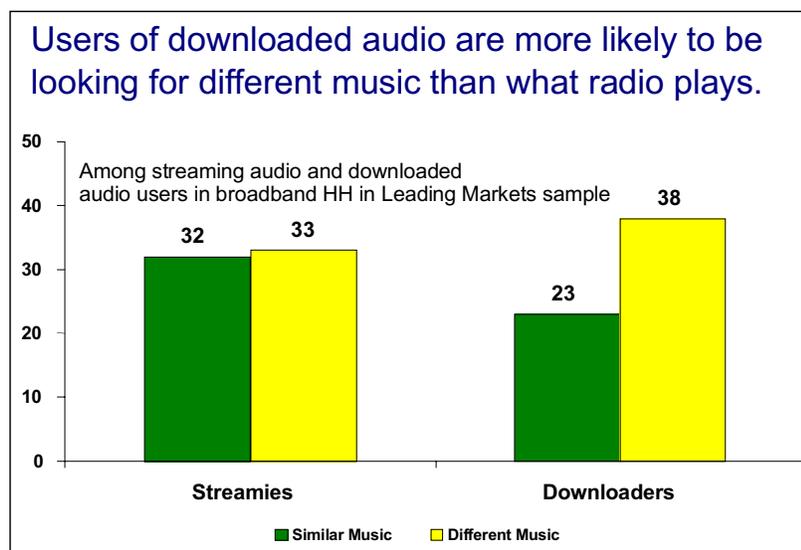
**12. Broadband users who listen to audio over the Internet are more likely to tune to local radio, followed by stations from around the country and Internet audio.** Nearly one out of two broadband audio streamers say they listen to local radio (46%), followed by radio stations from around the U.S. (41%), Internet-only audio (33%), play-by-play sports (21%) and radio from other countries (17%).



**13. Broadband users are far more likely to listen to Internet-only audio.** Among those with dial-up connections, 17% say they listen to Internet-only audio channels. Nearly twice that

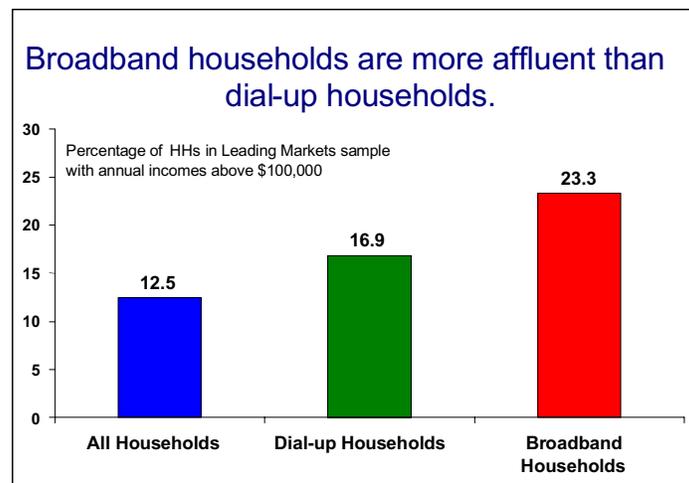
number of broadband users (33%) say they consume Internet-only audio channels. As the proportion of Americans using broadband Internet access grows, the fortunes of Internet-only webcasters will certainly grow as well.

- 14. Users of downloaded audio are more likely to be looking for “something different” than are streaming audio users.** Thirty-eight percent (38%) of audio downloaders say they are more likely to download music that is different from what they can hear on AM or FM radio, while 23% download similar music to what’s on the radio. “Streamies,” however, are more divided on this issue.

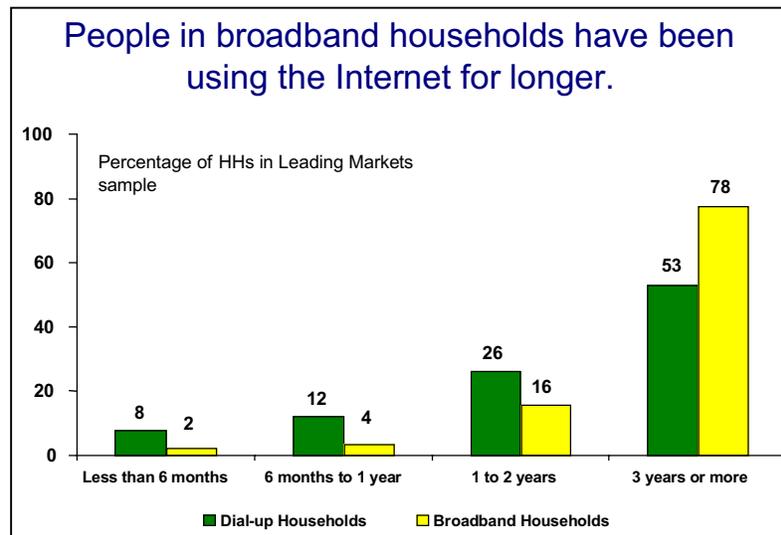


- 15. In focus groups with consumers, “niche” musical channels are often touted as the best part of streaming audio.** Listeners talk about the diversity of "genre" selections and the unlimited number of choices. This suggests that the variety they seek on the Internet may be a cumulative perception of many Internet channels, rather than the benefit of one channel.
- 16. Music variety is perceived as the primary benefit of Internet-only audio channels.** Listeners find this aspect of Internet audio to be more compelling than the lack of commercials and the absence of disc jockeys.
- 17. Brand awareness of Internet-only audio channels trails awareness of the Internet streams of AM and FM radio stations.** This is not surprising considering radio stations’ long-term efforts to build offline brands. In a “flash poll” conducted separately from the Leading Markets and National samples employed in this study, listeners can more readily recall streamed AM or FM stations than the Internet-only stations they have listened to online. The names of broadcast radio brands are mentioned more than Internet-only brands by a margin of more than ten-to-one among those who are aware that Internet-only stations exist and who have used Internet audio. This is not surprising, as traditional radio stations benefit from their existing imagery and branding.

- 18. Word of mouth and self-motivated searches are seen as the best sources of information about Internet audio and video.** Streamers who consume webcasting say they rely on suggestions from friends and others (26%), followed by random surfing on the Internet (18%) and search engines (13%). Few cite advertising or PR as the best source of webcast information.
- 19. According to broadband consumers, the technology enhances the quality of streamed audio content and reduces the difficulty of listening.** Fifty-seven percent of those with broadband “strongly agree/agree” that the quality of the audio on the Internet is “good enough” (57%) compared to 48% of those among dial-up homes. Forty percent of dial-up users “strongly agree/agree” with the statement that “listening to streaming audio on the Internet requires too much work.” Among broadband users this “too much work” image drops to 27%.
- 20. While broadband users indicate the quality of streaming audio is better, consumers feel the technical quality of streaming video has opportunity for growth.** When dial-up and broadband subscribers are asked to rate quality of streaming video on a scale of good, acceptable, not very good and unacceptable, the number who rate streaming video quality as “good/acceptable” is higher among broadband users (54%) compared to dial-up users (42%). The proportion of those who rate streaming video quality as “not very good/unacceptable” is 34% among broadband users and 45% among dial-up users. Among the national sample, the number of those who say “the quality of the video on the Internet is good enough” is 42% of broadband users and 32% among dial-up users. Broadband improves the quality of video, but there is still opportunity for improvement.
- 21. People in broadband households make more money, have been using the Internet longer and are more likely to have kids.** The gender distribution, household size and median age of people in broadband homes differ little from those in dial-up households. Much like in dial-up households, broadband households tend to be younger, larger and more likely to include males than the overall population.
- People in broadband households are, however, further distinguished from dial-up households by two additional factors: income and Internet experience. Twenty-three percent (23%) of people in broadband households report annual household incomes of \$100,000 or more. By comparison, 17% of those in dial-up households report six-figure incomes.



The dial-up population is almost equally split between those who have been using the Internet for less than three years and those who have done so for three years or more. People in broadband households, however, have significantly more experience on the Internet, as 78% of them say they have been using it from more than three years.



Finally, 36% of broadband households have children aged 12 and under. This compares to 28% in dial-up households.

- 22. Currently, cable modem broadband users outnumber DSL users by approximately a 3-to-1 margin.** Among the broadband households in the Leading Markets sample, cable modems outnumber DSL by a 66% to 34% margin. In the National sample, 67% of broadband households have cable modems, followed by DSL at 24% and a very small proportion with other broadband services such as ISDN, T1, satellite, etc.
- 23. The “need for speed” is by far the primary reason for subscribing to broadband.** Sixty-three percent (63%) of broadband users in the National sample say speed is their primary reason for getting the broadband connection at home. This is well ahead of the 23% who cite not having their telephone line tied up while they are online and the 9% who cite the uninterrupted connection as their primary reason for getting broadband.
- 24. Broadband delivers on its promise with the vast majority of subscribers being extremely satisfied with the service.** Eighty-nine percent say they are extremely/very satisfied with “being able to get online when I want to.” Eighty-two percent are extremely/very satisfied with “the speed of connection,” followed by the installation process (69%), “value for the money” (61%) and “customer service” (55%). If we examine only those who are “extremely satisfied,” we see the true passion toward broadband. Sixty-three percent are extremely satisfied with “being able to get online when I want to” followed by “speed of connection” (47%).

**25. The level of satisfaction with the broadband installation process is higher among those with cable modems than among those with DSL service.** More cable modem subscribers say they are “extremely/very satisfied” (74%) with the install process than DSL users (“extremely/very satisfied” – 58%). One out of five DSL users (19%) say they are “not very satisfied/extremely unsatisfied” with the installation process compared to only 7% for cable modem subscribers.

The scores for overall customer service for cable modem and DSL are closer, yet DSL shows somewhat higher negatives. Fifty-nine percent of those with cable modems say they are “extremely/very satisfied” with the customer service and 14% say they are “not very satisfied /extremely unsatisfied.” Fifty-one percent of DSL users say they are “extremely/very satisfied” and 22% say they are “not very satisfied /extremely unsatisfied.”

**26. The vast majority of broadband users have had the service for less than a year.** Thirty-seven percent of broadband users nationally have had the service less than 6 months, and 31% have had the service from six months to slightly less than a year. One out of four (26%) have had the service from one to two years.

**27. Consumers have great passion for broadband. The vast majority says broadband has met or exceeded expectations, their overall level of satisfaction is high and most would recommend broadband to friends.** Thirty-five percent say their broadband Internet connection at home is better than they expected while 57% say it is about what they expected. Only 8% say it is worse than they expected. When asked to indicate their overall level of satisfaction with broadband, 45% say “extremely satisfied” and 86% say they are extremely/somewhat satisfied. Clearly, broadband delivers what it promises, and the American consumer is very happy with the high-speed Internet access service. The vast majority says that they would be “extremely likely” to recommend a broadband Internet connection to a friend or family member (57%). Eighty-eight percent say it would be “extremely/somewhat likely” that they would recommend broadband to someone else.

## Recommendations

- 1. Broadcasters, webcasters and Internet content providers must develop a broadband strategy now as the impact of fast Internet connections is substantial.** People with broadband service spend far more time on the Internet and are far more likely to download and stream audio and video content. While the proportion of the total U.S. population with broadband is currently low, analysts predict broadband will be in one-third of American households by 2005. Planning must begin now to understand the best application of broadcast and webcast content in a broadband environment. Programmers should create “broadband focus groups or user groups” to test new implementations of broadband content for consumer feedback.
- 2. Media organizations must understand the definition of their brand and work to strengthen it in the context of broadband.** Broadband users are far more likely to search out and use different audio and video content from around the world. The “sheltered garden” of a local broadcast market will transform in a broadband world. In a world of unlimited choice, rapidly growing adoption of broadband, and the fierce battle for the consumer’s time, the value and power of branding become paramount. Broadcasters and webcasters must understand what their brand stands for and develop a strategy to capitalize on it. Therefore, brand images should be identified through research and strengthened continually through marketing.
- 3. Broadcasters should avoid making changes to their product in reaction to the threat of broadband.** Traditional broadcasters will always be criticized for their lack of new music, song repetition or too many commercials. The key is to understand the existing brand rather than attempting to make changes to the product that would serve to further diminish the brand.
- 4. Broadcasters should explore the opportunity provided by broadband to stream subchannels presenting content within the definition of the brand.** Local radio and television stations have built images over the years for key services such as traffic, weather, community events, etc. Broadband provides the opportunity to stream subchannels continuously playing these well-branded elements of the over-the-air broadcasts. Radio stations can stream segments of their format with streamed subchannels. For example, Oldies radio stations consist of music blended from the late 50’s, early 60’s, late 60’s and early 70’s. Thus, each unique era could become its own streamed subchannel within a station’s overall blend. There is evidence that teenagers turn more to similar songs that they hear on the radio versus being interested in variety. Thus, younger-targeted stations should emphasize hits within their streamed subchannels.
- 5. Within broadcast groups, users could be directed to co-owned streaming channels that provide content beyond the local entities.** For example, a group might have a cluster of stations programming music formats but be able to direct Sports/Talk listeners to sites containing compelling content from co-owned properties around the country.

- 6. Broadband users are far more likely to download. Programmers should challenge themselves to create content that is “downloading worthy.”** While only 3% of those with dial-up have downloaded video in the past week, 9% with broadband have. Far more broadband users have downloaded audio content in the past week (16%) compared to those with dial-up (9%). Therefore, coming up with interesting and compelling content to download on a regular basis will be another reason for consumers to “stick” with a media Web site. Also, in a world where young Americans (Generation “I”) are far more likely to listen to or watch downloaded content, broadcasters and webcasters must compete by making their steaming content itself “download worthy.”
- 7. Develop content specifically tailored to broadband users.** Many sites are now developing a multi-tier approach where consumers with broadband access can click on an entirely different Web site experience compared to the typical dial-up users. While those with broadband are relatively small in number, the amount of time spent online by broadband users is significant. Since broadband enables a far richer consumer experience, the bar will be constantly rising for compelling content that attracts and keeps broadband users. Thus, this strategy will seek to tantalize and attract those broadband users who spend a tremendous amount of time online. Developing this broadband content strategy will serve to attract future broadband subscribers to your content.
- 8. Broadband providers will represent a significant source of advertising dollars for traditional media outlets.** Traditional media have proven to be exceptionally effective at generating results for Internet advertisers. Arbitron studies have indicated that a significant proportion of Web users have visited Web sites directly as a result of advertising from television, radio and print ads. Broadband providers must seek to develop identity and awareness among future prospects. Traditional media outlets would be smart to appoint a “broadband specialist” whose sole purpose is to form relationships and develop marketing strategies to generate results for broadband suppliers.
- 9. Content providers should consider co-branding with traditional media to take advantage of existing brands.** Media outlets have developed established brands for content that is consistent across many markets. Web content providers can co-brand with these media outlets and take advantage of the tremendous marketing platform and strong brand equity offered by the traditional media.

As an example, one media outlet in a market developed a relationship with an ISP and branded the Internet service with its media brands. It is possible that broadband providers would be very successful in forming alliances with traditional media to brand and promote their broadband service.
- 10. Content providers should focus on branding specific channels as opposed to bundles of channels.** Numerous focus groups and flash polls that were conducted in preparation for this study revealed that consumers were less likely to recall an aggregate streaming brand and were more likely to recall a brand of a specific or unique channel. This is similar to the early days of cable when consumers were less likely to remember the name of the cable system and more likely to recall the name of the most compelling channels.