

Data Memo

**BY: John B. Horrigan, Associate Director for Research
Aaron Smith, Research Specialist**

**RE: HOME BROADBAND ADOPTION 2007
June 2007**

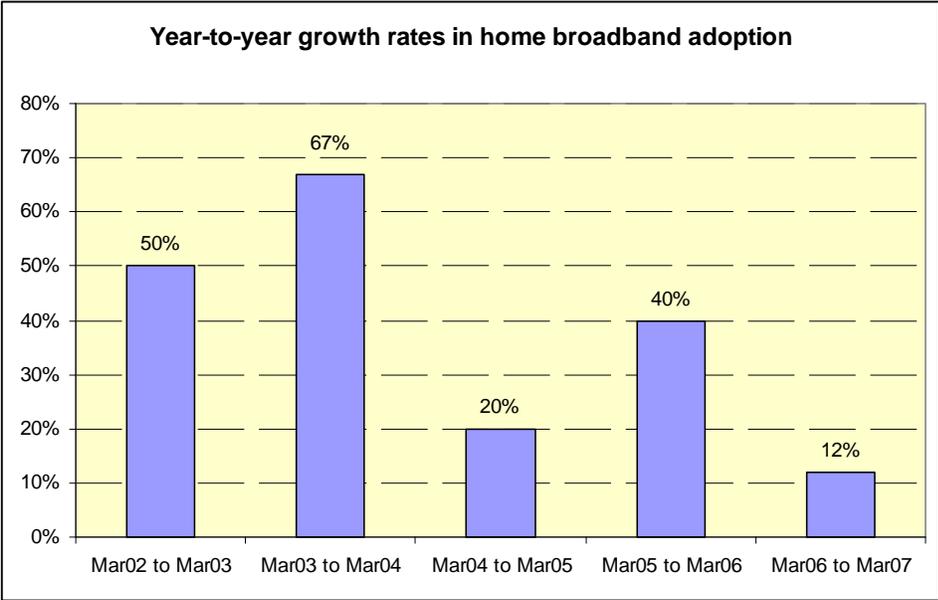
Summary of Findings

- 47% of all adult Americans have a broadband connection at home as of early 2007, a five percentage point increase from early 2006.
- Among individuals who use the internet at home, 70% have a broadband connection while 23% use dialup.
- Home broadband adoption in rural areas, now 31%, continues to lag high speed adoption in urban centers and suburbs.
 - Internet usage in rural areas also trails the national average; 60% of rural adults use the internet from any location, compared with the national average of 71%.
- 40% of African Americans now have a broadband connection at home, a nine percentage point increase from early 2006.
 - Since 2005, the percentage of African American adults with a home broadband connection has nearly tripled, from 14% in early 2005 to 40% in early 2007.

These findings come from a survey of 2,200 adult Americans conducted in February and March of 2007.

Broadband Adoption in 2007

After exhibiting relatively strong growth between early 2005 and early 2006, home broadband adoption in 2006-2007 grew at its slowest rate in recent years. As of March 2007, 47% of adult Americans say they have a high-speed connection at home, up from 42% in early 2006. This 12% year-to-year growth rate is much lower than the 40% rate in the previous period.

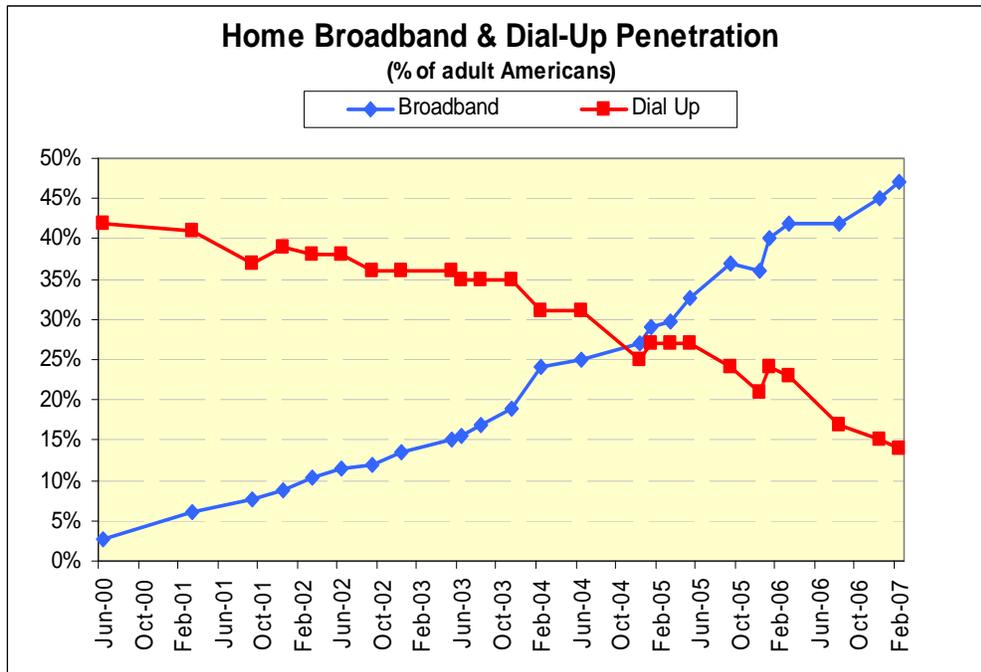


Currently, 71% of adults use the internet at least occasionally from any location; of these, 94% have an internet connection at home. Among adults with a home internet connection, 70% go online using a high-speed connection, versus 23% who use dialup.

A snapshot of internet adoption in the United States		
Internet Users (71% of all adults)	Broadband at home	47%
	Dial-up connection	15%
	Connection type not specified	5%
	Use internet at work only	2%
	Use internet in location other than work or home	2%
Non Users (29% of all adults)	Do not use a computer at work, school, home or elsewhere	27%
	Have access to a computer, but do not use internet or email	2%

Source: Pew Internet Project February-March 2007 survey of 2,200 adults; 966 were home broadband users

Despite relatively slow growth on a percentage basis compared with previous years, the number of home broadband users in early 2007 is now roughly as large (on a percentage basis) as the entire universe of internet users in the first year of the Pew Internet Project's surveys of online use. In June 2000, 48% of respondents reported going online via *any* type of connection to check email or access the Internet, compared with the 47% who have a home broadband connection now.



Broadband Adoption Among Population Subgroups

Historically, high-speed internet adoption has been concentrated among the young, educated and relatively well-off. This trend held to form in our 2007 survey, as several historically broadband-heavy groups continue to have broadband usage adoption well above the overall average for adult Americans. In particular, broadband penetration remains high among Americans ages 18-49, those with annual household incomes over \$75,000 and college graduates.

Trends in Broadband Adoption Across Population Subgroups			
	% with broadband at home (2005)	% with broadband at home (2006)	% with broadband at home (2007)
All adult Americans	30%	42%	47%
Gender			
Male	31	45	50
Female	27	38	44
Age			
18-29	38	55	63
30-49	36	50	59
50-64	27	38	40
65+	8	13	15
Race/Ethnicity			
White (not Hispanic)	31	42	48
Black (not Hispanic)	14	31	40
Education			
Less than high school	10	17	21
High school grad	20	31	34
Some college	35	47	58
College +	47	62	70
Income			
Under \$30K	15	21	30
\$30K-50K	27	43	46
\$50K-\$75K	35	48	58
Over \$75K	57	68	76
Community Type			
Urban	31	44	52
Suburban	33	46	49
Rural	18	25	31
<p>Sources: 2005 data comes from the Pew Internet Project's combined January-March tracking survey of 4,402 adults; 1,265 were home broadband users. The margin of error for all respondents is +/- 1.6%.</p> <p>2006 data comes from the Pew Internet Project's February 15 through April 6 survey of 4,001 adults; 1,562 were home broadband users. The margin of error for all respondents is +/- 1.7%.</p> <p>2007 data comes from the Pew Internet Project's February-March survey of 2,200 adults; 966 were home broadband users. The margin of error for all respondents is +/- 2.3%.</p>			

The 2005-2006 time period witnessed strong growth in broadband adoption across numerous demographic groups. As might be expected given the comparatively modest overall growth in broadband adoption for 2006-2007, growth rates among most population subgroups during the current time period were relatively modest by comparison. However, some demographic groups exhibited rapid broadband growth in 2006-2007 when compared with the adult population as a whole (year-to-year growth rates noted in parentheses):

- Those with annual household incomes under \$30,000 (43%)
- African-Americans (29%)
- Residents of rural areas (24%)
- Those with less than a high school education (24%)
- Those who say they have attended some college, but have not graduated (23%)

Americans with annual household incomes under \$30,000 are the only major demographic group for which broadband growth rates in 2006-07 (43%) met or exceeded those seen in 2005-06 (40%). Continued strong growth in broadband penetration among low-income households is particularly important both because of the size of this segment (25% of respondents in our February 2007 survey reported annual household incomes of under \$30,000 per year) and because these lower income households have long been among the most under-represented groups in home high-speed adoption.

Several groups in particular exhibited low growth relative to the overall average. These include (year-to-year growth rates again noted in parentheses):

- The age 50-64 cohort (5%)
- Those with annual household incomes between \$30,000 and \$50,000 (7%)
- Suburbanites (7%)

Focus on African-Americans

As recently as early 2005, broadband adoption among African-Americans was just 14%, among the lowest of any major demographic group. However, the past two to three years have brought rapid adoption of broadband by African-American adults. Today 40% of African-Americans have a broadband internet connection at home, an increase from 31% in March 2006.¹ While this figure is lower than the home high-speed penetration rate for whites, it represents a 186% increase since early 2005. Put another way, African-Americans now “trail” whites by just one year with respect to broadband adoption—high

¹ The eight percentage point difference in home broadband adoption among African-Americans in the 2006-2007 timeframe is statistically significant at a 90% confidence level.

speed internet penetration among African-Americans in 2007 is now roughly equivalent to that seen for whites in 2006.

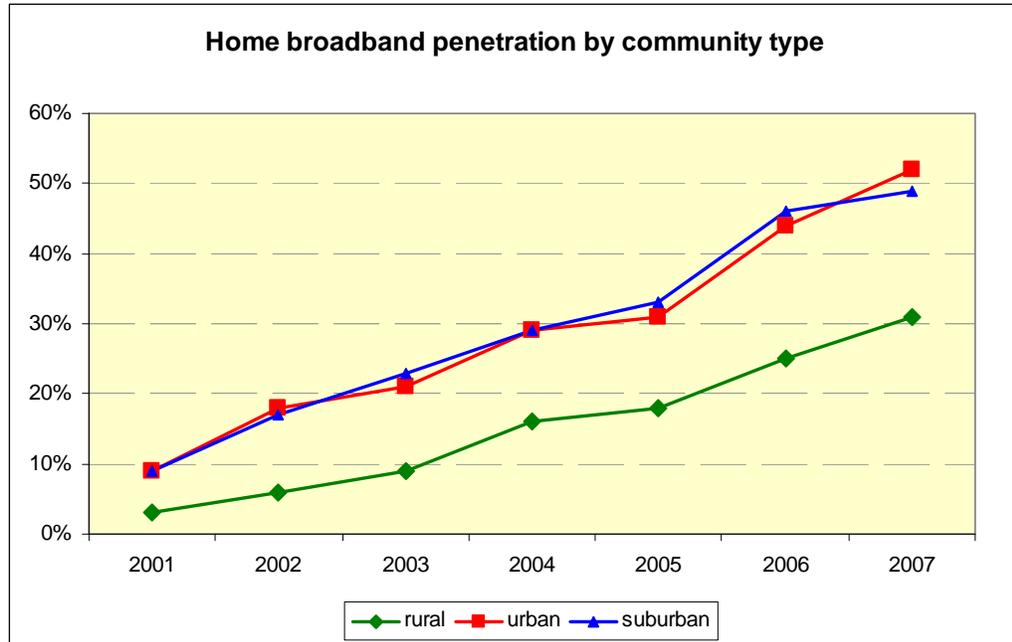
The difference in broadband adoption between African-Americans and whites is due primarily to lower internet usage among African-Americans. Overall, 73% of whites use the internet at least occasionally from any location, compared with 62% of African-Americans. The relatively lower incomes and relatively lower average levels of educational attainment for African-Americans contribute greatly to this gap in internet usage, since individuals with low incomes and education levels (regardless of race) are generally much less likely to use the internet.² When whites and blacks who use the internet at home are compared side by side, rates of broadband adoption are similar: 70% of African-Americans who use the internet at home have broadband compared with 69% of whites.³

Rural Broadband Adoption

Rural residents have long trailed their counterparts in the cities and suburbs in both internet usage and broadband adoption. As noted above, 31% of rural Americans have home broadband connections, compared with 49% of suburban residents and 52% of urban Americans. Rural broadband penetration still lags considerably behind the levels in non-rural America, but rural broadband continues to experience strong growth rates (albeit from a smaller base of users). Between 2006 and 2007, high-speed internet usage among rural adults grew by 24%, versus 18% for urban residents and just 7% for suburbanites. In the same way that African-Americans “trail” whites in broadband adoption by roughly one year, broadband penetration among rural residents in early 2007 is now roughly equal to broadband penetration among urban/suburban residents in early 2005.

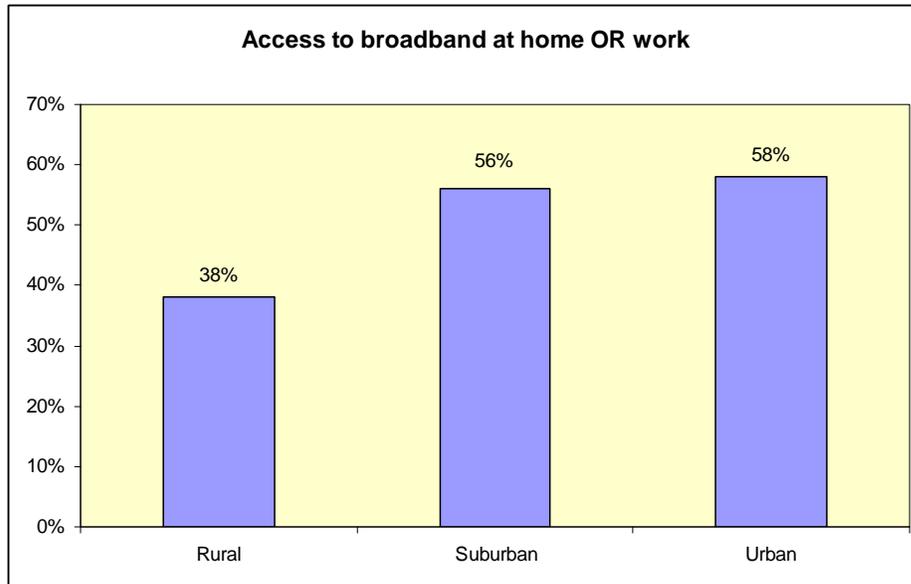
² Some 46% of African Americans reported having a household income under \$30,000 annually in the February 2007 survey, against the average of 25%. Some 13% of African Americans have earned college degrees versus 27% of all adult Americans.

³ The share of internet users who say they have access at home are roughly the same for whites and African-Americans in our February 2007 survey. Some 95% of white internet users go online from home, and 93% of African-American internet users do.



The gap in broadband penetration between rural and urban/suburban residents is comprised of two elements. As with African-Americans and whites, the first element is the low level of overall internet usage among rural residents—73% of urban and suburban residents use the internet at least occasionally, while 60% of rural adults are internet users.

The second element of the rural broadband gap is the relatively low level of broadband adoption among rural residents who do use the internet. Just over half (55%) of rural internet users have a broadband connection at home; among urban/suburban adults, broadband adoption among internet users is 73%. Suburban and urban residents are also more likely to have access to a broadband connection at their place of employment; just over two thirds of rural adults (38%) have access to a broadband connection either at home or at work, versus more than 55% for urban and suburban residents.



Statistical analysis of the survey data controlling for factors such as income, education and age shows that both race and geography are significant factors in predicting overall internet usage. In predicting broadband adoption among internet users, however, the impact of race is negligible—African-Americans and whites with similar demographic characteristics show similar levels of broadband usage.

At the same time, the impact on broadband usage of living in a rural area is negative and significant. While our 2007 survey did not specifically ask respondents whether broadband was available in their area, previous studies have pointed to the lack of infrastructure in rural areas as a contributing factor in the slow growth in adoption of rural broadband, a theory that is consistent with the above findings.⁴

⁴ Pew Internet and American Life Project, Rural Broadband Internet Use, February 2006. Available online at: http://www.pewinternet.org/pdfs/PIP_Rural_Broadband.pdf

Latinos and Broadband

From June through October 2006, the Pew Internet Project and Pew Hispanic Center surveyed 6,016 Hispanic adults in order to gauge internet usage habits among Latinos.⁵ Respondents were allowed to complete this survey in either English or Spanish, thus painting a more comprehensive portrait of the Latino community than our traditional English-only tracking survey. As a result, this report uses findings from our 2006 Latinos survey in lieu of data collected from “English-only” Latinos in our February-March 2007 survey. Key findings relating to broadband usage among Latinos include:

- 56% of Latinos go online from any location. This is slightly lower than the rate of internet usage among African-Americans (62%) and rural adults (60%).
- 29% of Hispanic adults have a home broadband connection, compared with 31% for rural dwellers, 40% for African-Americans and 47% for the adult population as a whole. As with African-Americans and rural residents, low broadband penetration among Hispanics is influenced heavily by low internet usage within this group.
- Among Latinos with home internet access, 66% have a broadband connection; this is comparable to the overall percentage for all internet users (70%).

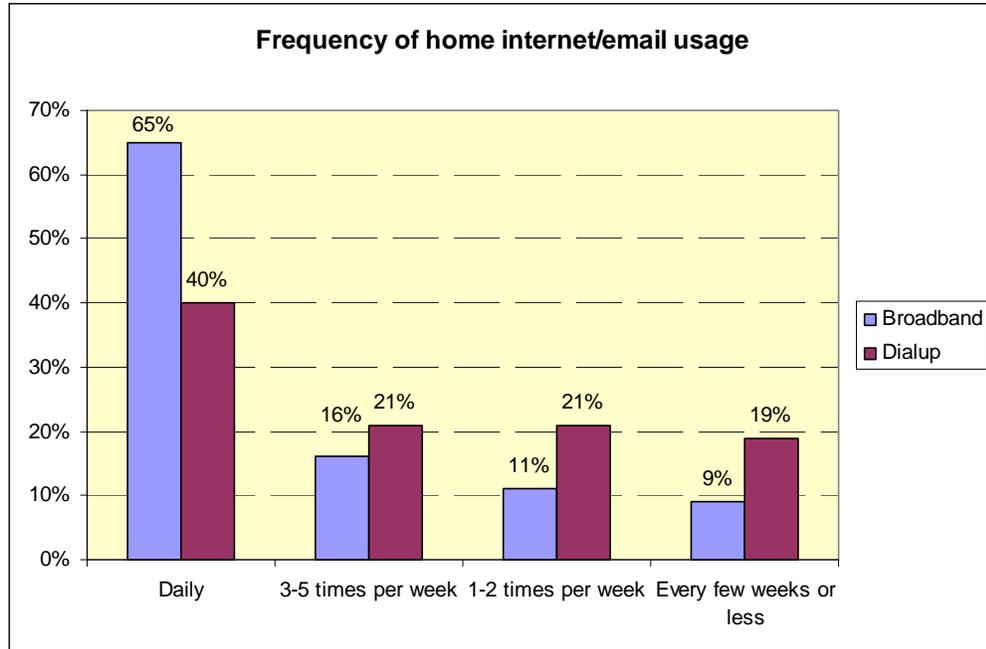
Broadband Adoption and Internet Usage Patterns

Previous Pew Internet Project research has highlighted the strong relationship between high-speed internet access and the richness and intensity of the online experience. Compared with individuals with a dialup internet connection, broadband users use the internet more regularly and engage more frequently in a variety of online activities.⁶

Our February-March 2007 survey shows this phenomenon proceeding apace. As the table below indicates, 65% of home broadband users go online from home at least once per day to use the internet or check email, compared with 40% for dialup users.

⁵ Pew Internet and American Life Project and Pew Hispanic Center, Latinos Online, March 14, 2007. Available online at: http://www.pewinternet.org/pdfs/Latinos_Online_March_14_2007.pdf

⁶ Pew Internet and American Life Project, Home Broadband Adoption 2006, May 28, 2006. Available online at: http://www.pewinternet.org/pdfs/PIP_Broadband_trends2006.pdf



In addition to using the internet more frequently than individuals with dialup access, broadband users also participate in a wider range of online activities. It is perhaps not surprising that broadband users exhibit greater rates of participation in bandwidth-intensive activities, such as internet telephony, that are cumbersome and time consuming at dialup speeds. What is particularly notable is that broadband users are also more likely than dialup users to take part in several comparatively low tech (i.e. less bandwidth-intensive) online activities such as searching for information on Wikipedia or reading online news sites.

Percent of internet users who <u>ever</u> engage in the following online activities (from any location)			
	All Internet Users	Home Dialup	Home Broadband
Send or read email	91%	90%	95%
Look for information about a hobby or interest	83	78	89
Get news	72	61	79
Do any type of research for your job	51	42	57
Look for information on Wikipedia	36	26	42
Look for religious or spiritual information	35	34	37
Read someone else's online journal or blog	29	21	34
Take material you find online and remix it into your own artistic creation	17	11	19
Create or work on your own online journal or blog	12	12	13
Make a phone call online	9	3	11
Create an avatar or online graphic representation of yourself	9	5	11

Source: Pew Internet Project February-March 2007 survey of 2,200 adults; 966 were home broadband users

This broadband effect does not hold true across all of the online activities studied in our March 2007 survey. For instance, demographically similar broadband and dialup users exhibit little difference with respect to ever having looked up religious or spiritual information, or ever having worked on their own online journal or blog. For most activities, however, the presence of a home broadband connection is a key explanatory variable (controlling for demographic and socio-economic factors) in predicting whether a given individual has ever engaged in that activity.⁷ This analysis does not necessarily imply that broadband “causes” increased online engagement; those interested in doing certain activities may get broadband in order to pursue those interests. However, a high-speed, “always on” connection clearly allows users to engage frequently in a wider range of online activities than dialup users.

Because broadband users are more likely to go online on a daily basis than dialup users, this tendency among broadband users is particularly pronounced when looking at the activities broadband and dialup users engage in on a typical day.

⁷ Multivariate regression analysis shows that the presence of a home broadband connection has a significant positive impact on the likelihood that an individual has ever engaged in numerous online activities, controlling for demographic and socio-economic characteristics such as age, income, race and education (the exceptions being looking up religious or spiritual information, working on a personal journal or blog, and doing job-related research or work).

Percent of internet users who report doing the following activities <u>yesterday</u> (from any location)			
	All Internet Users	Home Dialup	Home Broadband
Send or read email	56%	43%	65%
Get news	37	24	45
Look for information about a hobby or interest	29	21	34
Do any type of research for your job	23	15	27
Read someone else's online journal or blog	10	5	12
Look for information on Wikipedia	8	9	5
Look for religious or spiritual information	6	4	7
Create or work on your own online journal or blog	5	5	5
Take material you find online and remix it into your own artistic creation	3	3	3
Make a phone call online	2	<1	3

Source: Pew Internet Project February-March 2007 survey of 2,200 adults; 966 were home broadband users

Methodology and data

The findings in this data memo are based on the findings of our daily tracking survey on Americans' use of the Internet conducted by Princeton Survey Research Associates. Most of the data in this report is drawn from the Project's February-March 2007 survey of 2,200 adult Americans. Of these, 1,492 were internet users and 966 were home broadband users. The margin of error for results based on all such respondents is +/-2.3 percentage points; for internet users it is +/-2.8 percentage points; for home broadband users it is +/-3.5 percentage points.

The number of African-Americans surveyed in February-March 2007 came to 190; 111 were internet users, and 71 were home broadband users. For whites, 1,740 respondents were interviewed, with 1,199 internet users and 767 home broadband users.

For **African-Americans**, the margin of error for results based on all such respondents is +/-7.8 percentage points; for internet users it is +/-10.2 percentage points; for home broadband users it is +/-12.8 percentage points.

For **white** Americans, the margin of error for results based on all such respondents is +/-2.5 percentage points; for internet users it is +/-3.1 percentage points; for home broadband users it is +/-3.9 percentage points.

The number of rural Americans surveyed in February-March 2007 came to 447, with 258 rural internet users and 133 rural home broadband users. For residents of urban America, 597 respondents were interviewed, with 422 internet users and 297 home broadband users. The total number of suburban Americans interviewed was 1,156, with 812 internet users and 536 home broadband users.

For **rural** Americans, the margin of error for results based on all such respondents is +/-5.1 percentage points; for internet users it is +/-6.7 percentage points; for home broadband users it is +/-9.3 percentage points.

For **urban** Americans, the margin of error for results based on all such respondents is +/-4.4 percentage points; for internet users it is +/-5.2 percentage points; for home broadband users it is +/-6.3 percentage points.

For **suburban** Americans, the margin of error for results based on all such respondents is +/-3.2 percentage points; for internet users it is +/-3.8 percentage points; for home broadband users it is +/-4.7 percentage points.

For the definition of **community type**, we follow the Census Bureau definition whereby respondents are categorized as "rural" if they reside in a non-metropolitan statistical area (MSA) county. Respondents are categorized as "suburban" if they reside in any portion of an MSA county that is not in a central city. Respondents are categorized as "urban" if they reside within a central city of an MSA.

The sample for this survey is a random digit sample of telephone numbers selected from telephone exchanges in the continental United States. The random digit aspect of the sample is used to avoid “listing” bias and provides representation of both listed and unlisted numbers (including not-yet-listed numbers). The design of the sample achieves this representation by random generation of the last two digits of telephone numbers selected on the basis of their area code, telephone exchange, and bank number.

New sample was released daily and was kept in the field for at least five days. The sample was released in replicates, which are representative subsamples of the larger population. This ensures that complete call procedures were followed for the entire sample. At least 10 attempts were made to complete an interview at sampled households. The calls were staggered over times of day and days of the week to maximize the chances of making contact with a potential respondent. Each household received at least one daytime call in an attempt to find someone at home. In each contacted household, interviewers asked to speak with the youngest male currently at home. If no male was available, interviewers asked to speak with the youngest female at home. This systematic respondent selection technique has been shown to produce samples that closely mirror the population in terms of age and gender. All interviews completed on any given day were considered to be the final sample for that day.

PSRAI calculates a response rate as the product of three individual rates: the contact rate, the cooperation rate, and the completion rate. Of the residential numbers in the sample, 76% were contacted by an interviewer and 41% agreed to participate in the survey. Eighty-seven percent were found eligible for the interview. Furthermore, 94% of eligible respondents completed the interview. Therefore, the final response rate is 29%.

Non-response in telephone interviews produces some known biases in survey-derived estimates because participation tends to vary for different subgroups of the population, and these subgroups are likely to vary also on questions of substantive interest. In order to compensate for these known biases, the sample data are weighted in analysis. The demographic weighting parameters are derived from a special analysis of the most recently available Census Bureau’s March 2006 Annual Social and Economic Supplement. This analysis produces population parameters for the demographic characteristics of adults age 18 or older, living in households that contain a telephone. These parameters are then compared with the sample characteristics to construct sample weights. The weights are derived using an iterative technique that simultaneously balances the distribution of all weighting parameters.



IP and Broadband: Transforming the Communications Landscape

1



Presentation Summary

- SBC Overview
- Description of the Converging Competitive Communications Marketplace.
- SBC's Response: Project Lightspeed initiative to build fiber-rich, IP-based integrated services network.
- Regulatory Response: Will regulation adapt to match the changes in technology and the marketplace?

2



SBC Current Overview

- Over 53 million access lines in U.S.
- Largest DSL provider in U.S. with almost 5 million subscribers
- 2nd Largest long distance provider in U.S. with almost 20 million subscribers
- 60 percent ownership in Cingular, which, with newly acquired AT&T Wireless, will be largest wireless provider in U.S with over 45 million subscribers.
- Partnership with DISH to sell satellite TV – over 200,00 subscribers since launching service in March '04

3



Converging Competitive Communications Marketplace

- Description of the Converging Competitive Communications Marketplace

4



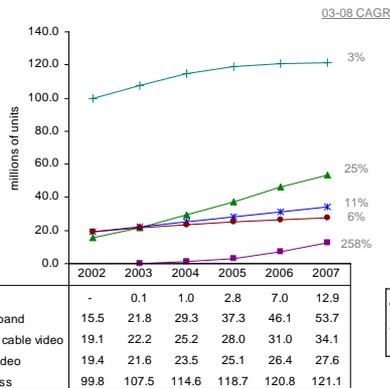
Changing Market Dynamics

1. Changing consumer behavior: Consumers increasingly use multiple forms of devices, networks, connections and applications to communicate with one another. Relative to 2000 levels, usage of POTS has dropped by more than 20% while the usage of other communications media (wireless and text) more than doubled.
2. Changing revenue shares: Consumers continue to spend more on new communications services at the expense of POTS; this increased consumer spending occurs across a broader array of providers.

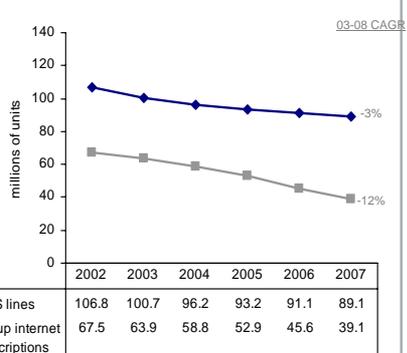


Changing consumer behavior: Growing and declining services projection

US units in service, growing services



US units in service, declining services



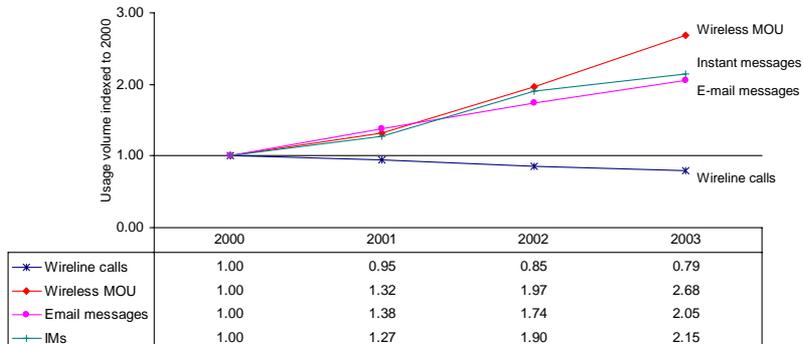
Consumers are expected to continue increasing their demand for new services, such as broadband and VoIP, as demand for older technologies (POTS and dial-up internet) continues to decline.

Source: IDC, Yankee Group.



Changing consumer behavior: Indexed usage trends

US usage trend of two-way communications applications



Relative to 2000 levels, usage of traditional wireline products has dropped by more than 20% while the usage of other communications media has more than doubled.

Source: FCC, IDC, Wachovia Securities.

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Revenue shares: SBC region average household spend on communications services

Average household spend by service



Compound Annual Growth Rate (CAGR)

The growth in household communications spend over the past three years is the result of increasing purchases of wireless, video and internet products more than offsetting declining spend for wireline voice products.

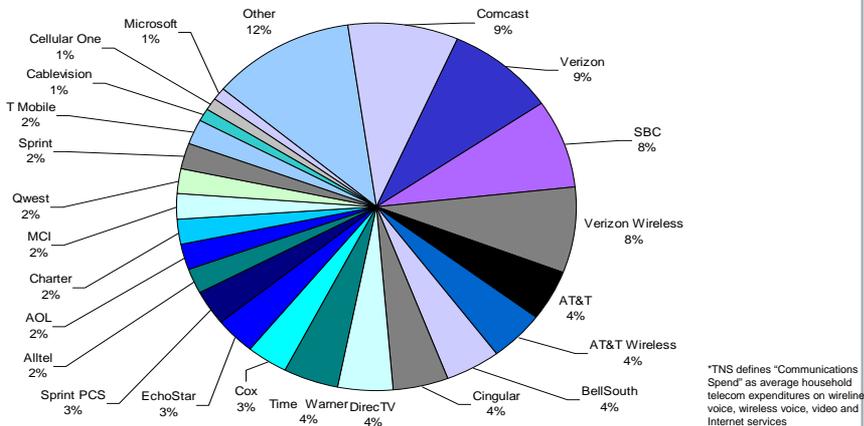
Source: TNS Telecoms bill harvesting data of SBC region households.

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Revenue shares: Overall national distribution of household communications spend

Distribution of US voice, data and video household communications spend*, 1Q04



At the national level, 22 providers have a revenue share of the consumer market of greater than 1%; no service provider has more than 9% of the revenue in the market.

Source: Analysis of TNS Telecoms bill harvesting data, national 1Q04 survey results; "Other" is adjusted from the TNS reported summary by removing from the TNS reported figure of 21% "Other" an estimated 10% of total spend across all categories for which the provider is not identified (i.e., adjusting Other to represent true "Other" and to exclude Unidentified; the 10% is estimated from analysis of revenue attributed to Unidentified providers within the detailed SBC-region portion of TNS bill harvest data).



Changing consumer behavior: Provider and services competitive landscape

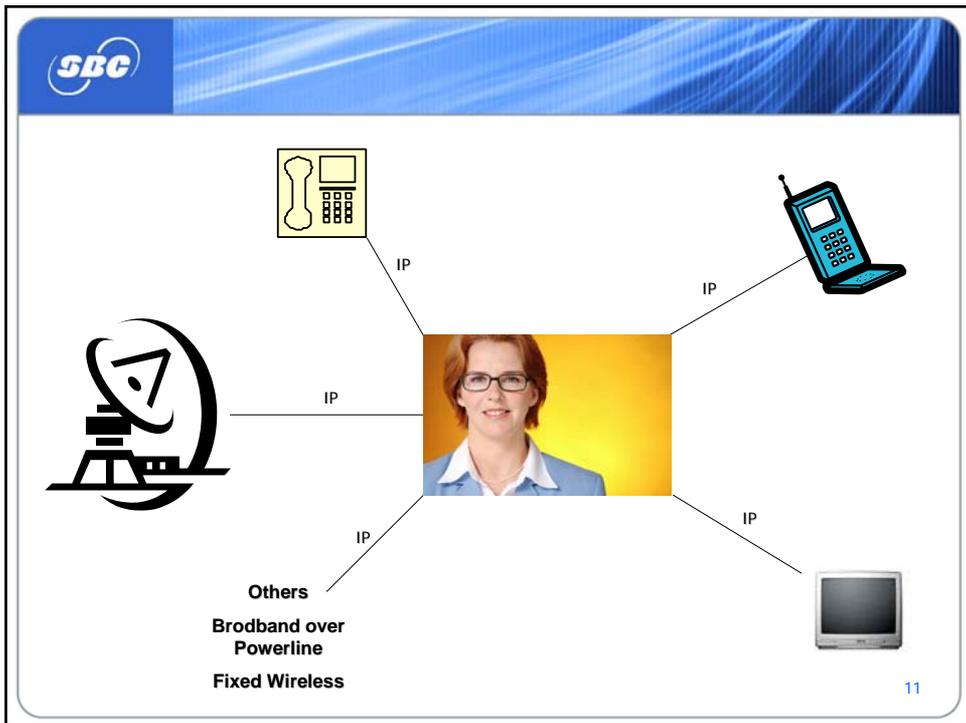
Services

Providers	Wireline voice		Wireless voice	Internet access (e.g., e-mail, IM & SMS)	Video and entertainment	
	Established POTS	VoIP plans	Bundled offerings through affiliates		DBS resale	Video over fiber
ILECs	Established POTS	VoIP plans	Bundled offerings through affiliates		DBS resale	Video over fiber
CLECs	Established POTS	VoIP plans				
IXCs	Established POTS	VoIP deployment	Bundled offerings through affiliates			
Cable MSOs	Established POTS	VoIP deployment	MVNO arrangements to offer wireless-wireline bundles			
Wireless carriers				Web access and internet messaging over 2.5/3G ¹		Adding gaming features and streaming video
ISPs						Games and other content (e.g. AOL)
Pureplay VoIP providers	Fast growth among broadband users					
Satellite video providers				DirectPC		

¹ 3G services are currently offered by Sprint and Verizon Wireless using CDMA; 3G service roll-out will likely accelerate following the Cingular/AT&T Wireless merger using the combined companies' spectrum and scale.

Established
Emerging

Consumers have become more sophisticated in looking to different products to fulfill the functionalities they need, with the features they value most, from the providers offering the best price and convenience.



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- SBC's Response: Project Lightspeed initiative to build fiber-rich, IP-based integrated services network.
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Project Lightspeed

Project Lightspeed

We will provide high-speed, high-bandwidth, IP-based connections to 18 million households in the SBC territory

The Method

Push fiber to within 3,000 to 5,000 feet of many existing neighborhoods and, to the premises, in many new developments

The Investment

\$4B to \$6B over the next 2-3 years

The Benefits

15-25 Mbps for IPTV, super high-speed Internet access, and IP Voice

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IP is our future

High-Speed Internet Access

2-7 Mbps

IP Voice

Full-feature offering

IPTV

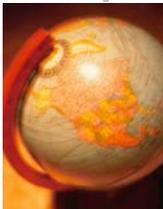
4 high-quality TV streams
1 HDTV and 3 SDTV

14



Aggressive network build

38,800 miles of fiber *or enough to*



Around
The
Earth
1.5
Times



From
Hartford
To
Los Angeles
15
Times

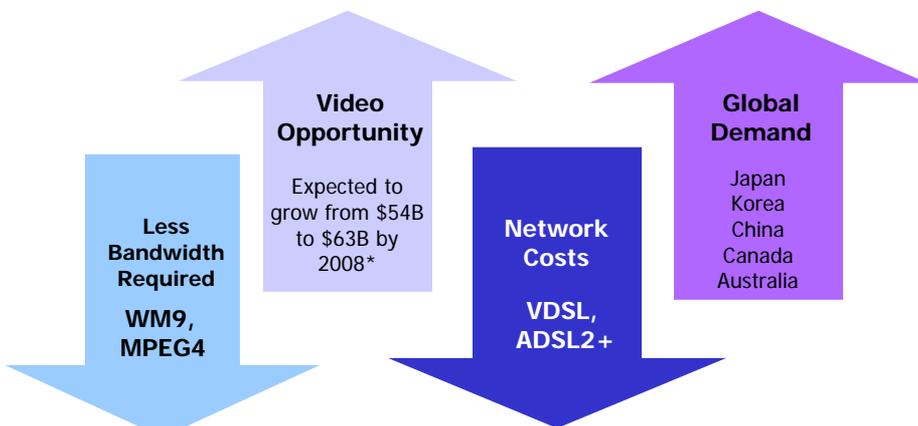
to reach

18 Million Households By Year-End 2007

15



The Time is Right



* Source: PWC Global Entertainment & Media Outlook, 2004-2008

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Future Regulatory Landscape

- Regulation needs to adapt to recognize fundamental changes in technology and the marketplace
 - Convergence – no longer can be technology or service specific
 - Competition – no longer can assume single provider environment
 - Investment – must facilitate, not deter, investment in new technology
 - Speed – time is of the essence

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Current U.S. Regulatory Assessment

- Convergence
 - Current Assessment: Minimal progress
 - U.S. regulation still, at its core, based on regulatory “silos” not converged services
- Competition
 - Current Assessment: Minimal/Moderate progress
 - Still significant amounts of “economic” regulation, especially for wireline platform
- Investment
 - Current Assessment: Moderate progress
 - Some positive directional changes so far, mainly at FCC
- Speed
 - Current Assessment: Minimal progress
 - Process at all levels moving at glacial speed when compared to speed of change in market and technology deployment
- Key Questions going forward
 - Will FCC continue its deregulatory course?
 - What about the courts?
 - What about the states?
 - New legislation forthcoming?

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