



**Pew Internet**  
Pew Internet & American Life Project

a project of the  
**PewResearchCenter**

# Generations and their gadgets

By Kathryn Zickuhr, Web Coordinator

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<http://pewinternet.org/Reports/2011/Generations-and-gadgets.aspx>

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Pew Research Center's Internet & American Life Project  
1615 L St., NW – Suite 700  
Washington, D.C. 20036  
202-419-4500 | [pewinternet.org](http://pewinternet.org)

## Overview

Many devices have become popular across generations, with a majority now owning cell phones, laptops and desktop computers. Younger adults are leading the way in increased mobility, preferring laptops to desktops and using their cell phones for a variety of functions, including internet, email, music, games, and video.

Among the findings:

- **Cell phones** are by far the most popular device among American adults, especially for adults under the age of 65. Some 85% of adults own cell phones overall. Taking pictures (done by 76% of cell owners) and text messaging (done by 72% of cell owners) are the two non-voice functions that are widely popular among all cell phone users.
- **Desktop computers** are most popular with adults ages 35-65, with 69% of Gen X, 65% of Younger Boomers and 64% of Older Boomers owning these devices.
- Millennials are the only generation that is more likely to own a **laptop computer or netbook** than a desktop: 70% own a laptop, compared with 57% who own a desktop.
- While almost half of all adults own an **mp3 player** like an iPod, this device is by far the most popular with Millennials, the youngest generation—74% of adults ages 18-34 own an mp3 player, compared with 56% of the next oldest generation, Gen X (ages 35-46).
- **Game consoles** are significantly more popular with adults ages 18-46, with 63% owning these devices.
- 5% of all adults own an **e-book reader**; they are least popular with adults age 75 and older, with 2% owning this device.
- **Tablet computers**, such as the iPad, are most popular with American adults age 65 and younger. 4% of all adults own this device.

Additionally, about one in 11 (9%) adults do not own any of the devices we asked about, including 43% of adults age 75 and older.

In terms of generations, Millennials are by far the most likely group not only to own most of the devices we asked about, but also to take advantage of a wider range of functions. For instance, while cell phones have become ubiquitous in American households, most cell phone owners only use two of the main non-voice functions on their phones: taking pictures and text messaging. Among Millennials, meanwhile, a majority use their phones also for going online, sending email, playing games, listening to music, and recording videos.

However, Gen X is also very similar to Millennials in ownership of certain devices, such as game consoles. Members of Gen X are also more likely than Millennials to own a desktop computer.

e-Book readers and tablet computers so far have not seen significant differences in ownership between generations, although members of the oldest generation (adults age 75 and older) are less likely than younger generations to own these devices.

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## % of American adults in each generation who own each device

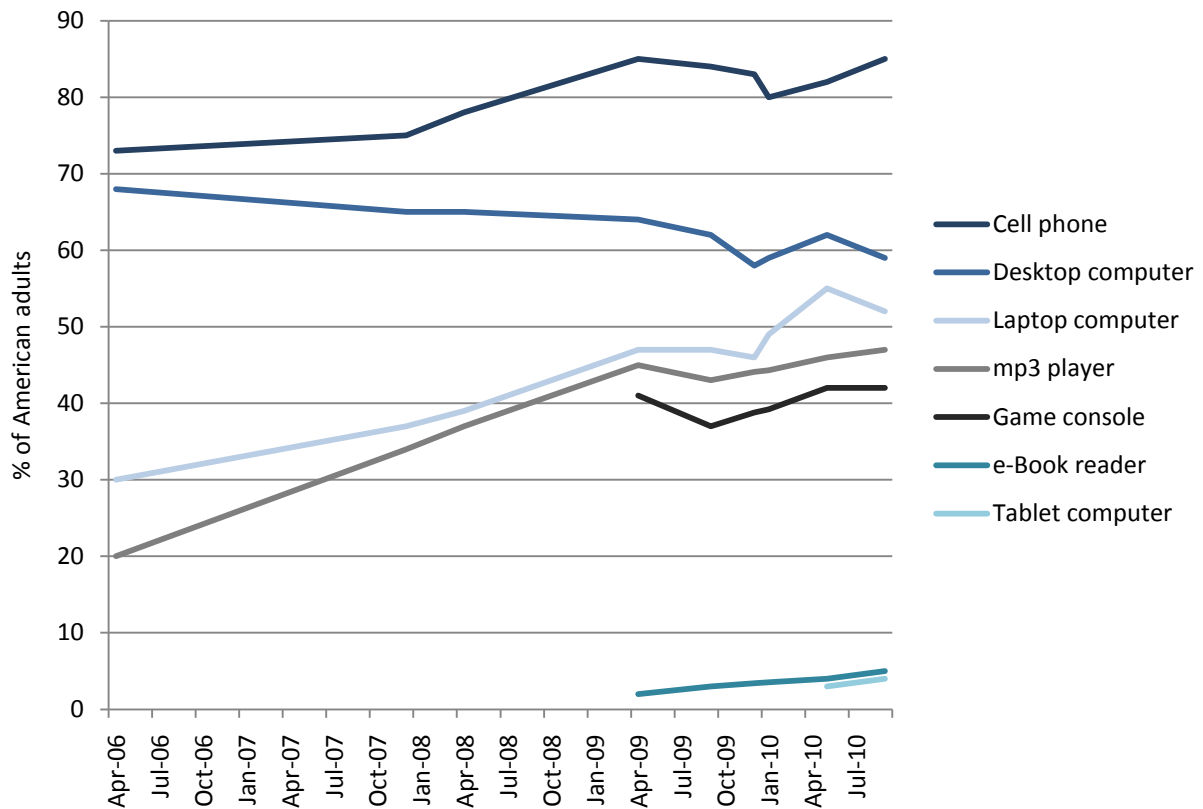
	Millennials (Ages 18-34)	Gen X (35-46)	Younger Boomers (47-56)	Older Boomers (57-65)	Silent Gen. (66-74)	G.I. Gen. (75+)	All adults (18+)
Cell phone	95	92	86	84	68	48	85
Desktop computer	57	69	65	64	48	28	59
Laptop computer	70	61	49	43	30	10	52
iPod/MP3 player	74	56	42	26	16	3	47
Game console	63	63	38	19	8	3	42
e-Book reader	5	5	7	3	6	2	5
Tablet, like iPad	5	5	4	3	1	1	4
None of these	1	3	8	8	20	43	9

**Source:** Pew Research Center's Internet & American Life Project, August 9-September 13, 2010 Tracking Survey. N=3,001 adults 18 and older, including 1,000 reached via cell phone. Interviews were conducted in English (n=2,804) and Spanish (n=197).

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These findings are based on a survey of 3,001 American adults (ages 18 and older) conducted between August 9 and September 13, 2010. The margin of error is +/- 3 percentage points. Interviews were conducted in English and Spanish, and the survey included 1,000 cell phone interviews.

## Gadget ownership by American adults, 2006-2010



**Source:** Pew Research Center's Internet & American Life Project surveys, April 2006-September 2010.

In this chart, the dips in tech ownership registered in the September 2010 survey are mostly a result of the fact that Spanish interviews were added to the survey. Most of the Pew Internet surveys before 2010 were only conducted in English. The Project has added Spanish to this survey and that knocked down the overall tech-ownership numbers in some instances because respondents who wanted to be interviewed in Spanish were somewhat less likely than others to be tech non-users.

## Background: Generations defined

This is part of a series of report by the Pew Research Center's Internet & American Life Project exploring how different generations use technology. All the generation labels used in these reports, with the exceptions of "Younger Boomers" and "Older Boomers," are the names conventionalized by William Strauss and Neil Howe in their book, *Generations: The History of America's Future, 1584 to 2069* (Perennial, 1992). The Pew Internet Project's "Generations" reports make the distinction between Younger Boomers and Older Boomers because enough research has been done to suggest that the two decades of Baby Boomers are different enough to merit being divided into distinct generational groups.

Generation name	Birth years	Ages in 2011
Millennials	Born 1977-1993	Ages 18-34
Gen X	Born 1965-1976	Ages 35-46
Younger Boomers	Born 1955-1964	Ages 47-56
Older Boomers	Born 1946-1954	Ages 57-65
Silent Generation	Born 1937-1945	Ages 66-74
G.I. Generation	Born before 1936	Age 75+

The Pew Research Center recently published a series of reports that more closely examined the values, attitudes and experiences of the Millennial generation.<sup>1</sup> These reports are available in full at [pewresearch.org/millennials](http://pewresearch.org/millennials). Many of these reports also compare this younger generation to older cohorts.

The primary adult data in this report come from a Pew Internet Project survey conducted from August 9-September 13, 2010, with some data from a survey conducted April 29 to May 30, 2010. For more information about these surveys, please see the [Methodology](#) section at the end of this report.

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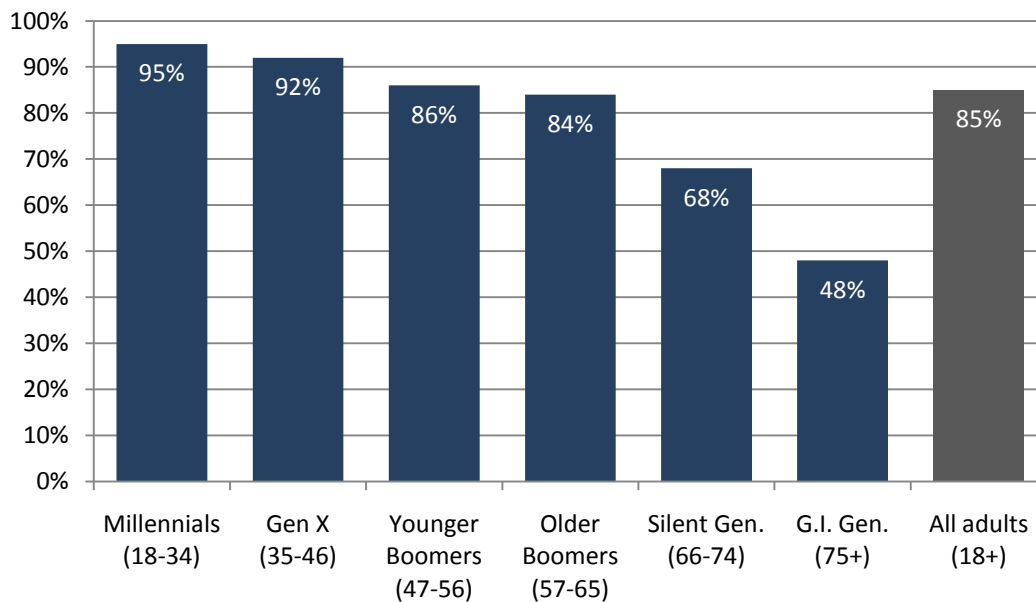
<sup>1</sup> Scott Keeter and Paul Taylor, "The Millennials." Pew Research Center, December 11, 2009. <http://pewresearch.org/pubs/1437/millennials-profile>

## Cell phones

Eighty-five percent of Americans age 18 and older own a cell phone, making it by far the most popular device among adults. Mobile phones are especially popular with adults under the age of 66, although the largest drop-off is for adults in the oldest generation (those age 75 and older), of whom 48% own a cell phone.

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### Do you have a cell phone, or a Blackberry or iPhone or other device that is also a cell phone?



**Source:** Pew Research Center's Internet & American Life Project, August 9-September 13, 2010 Tracking Survey. N=3,001 adults 18 and older, including 1,000 reached via cell phone. Interviews were conducted in English (n=2,804) and Spanish (n=197).

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When asked further about the presence of mobile phones in their households, one-third (33%) of those who do not own a cell phone live in a household with at least one working mobile phone. This means that overall, 90% of all adults—including 62% of those age 75 and older—live in a household with at least one working cell phone.

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## Cell phone households

	Millennials (Ages 18-34)	Gen X (35-46)	Younger Boomers (47-56)	Older Boomers (57-65)	Silent Gen. (66-74)	G.I. Gen. (75+)	All adults (18+)
% of adults who have a cell phone	95	92	86	84	68	48	85
% of non-cell users who live in a household with a working cell phone	49	51	29	42	24	27	33
Total % of adults who live in a household with a working cell phone	97	96	90	90	76	62	90

**Source:** Pew Research Center's Internet & American Life Project, August 9-September 13, 2010 Tracking Survey. N=3,001 adults 18 and older, including 1,000 reached via cell phone. Interviews were conducted in English (n=2,804) and Spanish (n=197).

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As the proportion of households with at least one working cell phone rises, many are doing without a landline phone connection at all. In the first half of 2010, roughly one in four (25%) American adults lived in households that were “wireless only” in that they had at least one cell phone, but no landline. This includes more than half (51%) of young adults ages 25-29.<sup>2</sup>

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<sup>2</sup> Stephen J. Blumberg and Julian V Luke, “Wireless Substitution: Early Release of Estimates from the National health Interview Survey, January-June 2010.” National Center for Health Statistics, December 2010. <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201012.htm>

## Do you ever use your phone to... (% of cell phone users)

	Millennials (Ages 18-34)	Gen X (35-46)	Younger Boomers (47-56)	Older Boomers (57-65)	Silent Gen. (66-74)	G.I. Gen. (75+)	All adults (18+)
Take a picture	91	83	78	60	50	16	76
Send or receive text messages	94	83	68	49	27	9	72
Access the internet	63	42	25	15	17	2	38
Play a game	57	37	25	11	10	7	34
Record a video	57	39	23	11	7	4	34
Send or receive email	52	35	26	22	14	7	34
Play music	61	36	18	10	7	5	33
Send or receive instant messages	46	35	22	15	13	6	30

**Source:** Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey. N=2,252 adults 18 and older.

Though cell phones are now ubiquitous in American homes, the level of engagement with the phones does vary widely between generations. As shown in the above table, our May 2010 survey found that while roughly the same proportion of adults in the Millennial generation and Generation X own cell phones, Millennials are significantly more likely to use their phones for a variety of purposes. A majority of Millennials use their phones for taking photos, texting, going online, sending email, playing games, listening to music, and recording videos—making them significantly more likely than any other generation to engage in all of these activities.

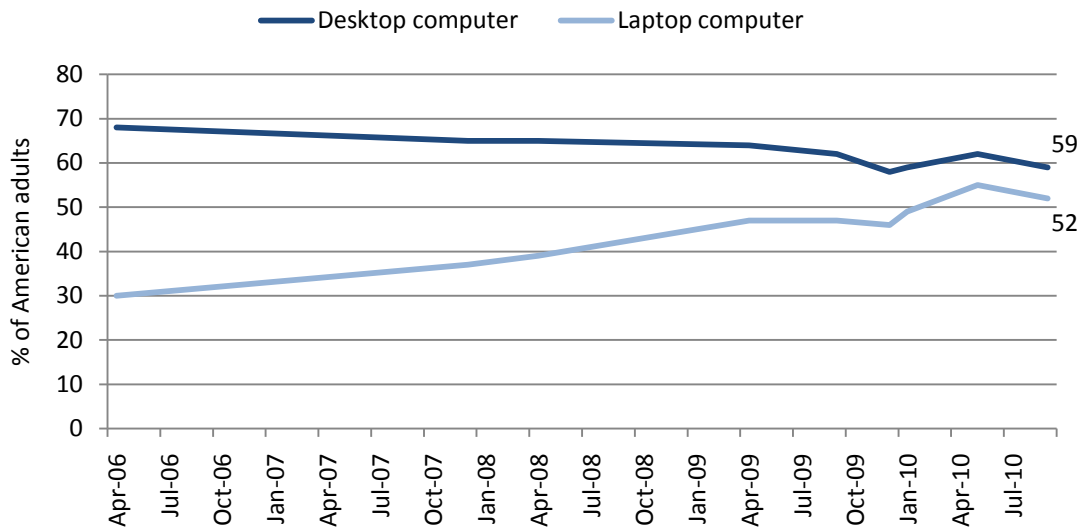
In fact, the only two activities that are widely popular for all cell phone owners are taking pictures and sending text messages. Taking pictures is the most popular function on Americans' phones, with more than half of all cell phone owners under the age of 75 using their phones for this purpose (only 16% of adults age 75 and older take photos with their phones). Text messaging, though also widely adopted, is less popular with adults over age 56.



## Desktop and laptop computers

As noted in previous reports, desktop computer ownership has fallen slightly since 2006, as laptops have gained in popularity.<sup>3</sup> Currently 59% of all adults own a desktop computer, and 52% own a laptop (76% own a computer overall).

### Desktop vs laptop ownership over time



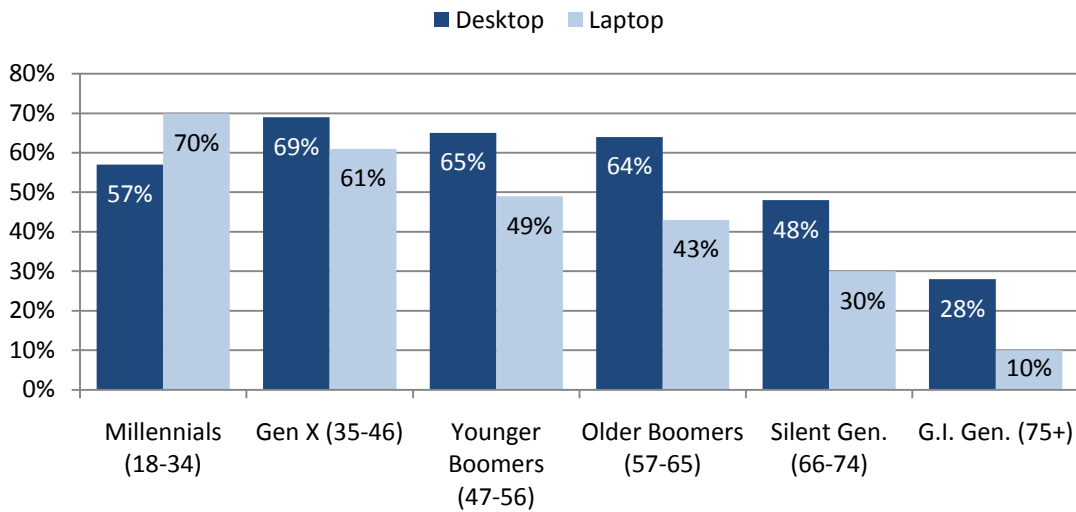
**Source:** Pew Research Center's Internet & American Life Project, August 9-September 13, 2010 Tracking Survey. N=3,001 adults 18 and older, including 1,000 reached via cell phone. Interviews were conducted in English (n=2,804) and Spanish (n=197).

Millennials are the only generation that is more likely to own a laptop or netbook (70%) than a desktop computer (57%). While 69% of adults in Generation X own a desktop, a close 61% own a laptop. While roughly six in ten adults ages 47-65 own a desktop, only 49% of Younger Boomers and 43% of Older Boomers own a laptop.

<sup>3</sup> See "Americans and their gadgets" (2010): <http://pewinternet.org/Reports/2010/Gadgets/Report/Desktop-and-Laptop-Computers.aspx>

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## Percentage of American adults who own a desktop or laptop computer



**Source:** Pew Research Center's Internet & American Life Project, August 9-September 13, 2010 Tracking Survey. N=3,001 adults 18 and older, including 1,000 reached via cell phone. Interviews were conducted in English (n=2,804) and Spanish (n=197).

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Only 45% of adults over age 65 have a computer of any kind<sup>4</sup> (40% of adults in that age group use the internet), and they are increasingly likely to use a desktop: 28% of adults age 75 and older use a desktop, and 10% use a laptop.

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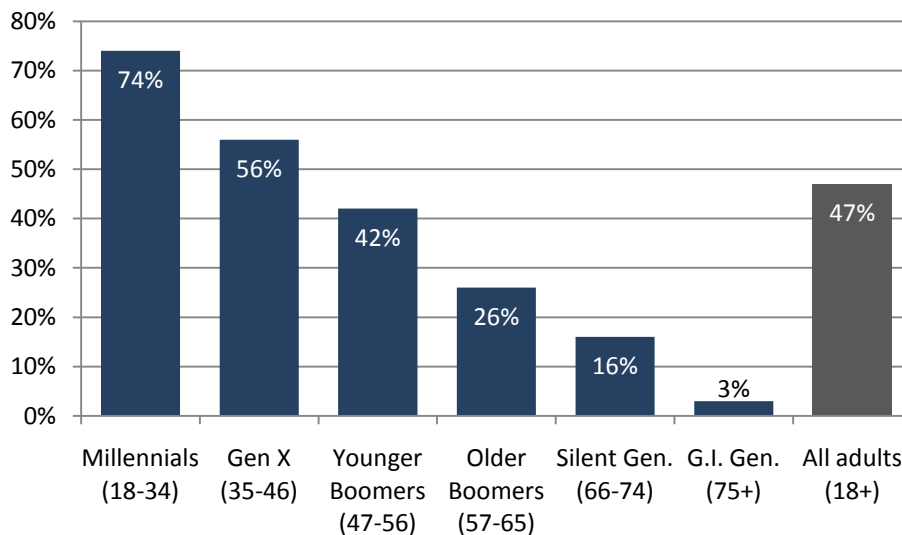
<sup>4</sup> See "Americans and their gadgets" (2010): <http://pewinternet.org/Reports/2010/Gadgets/Report/Desktop-and-Laptop-Computers.aspx>

## Mp3 players

Almost half—47%—of adults own an iPod or other mp3 player. However, among the devices examined in this report, mp3 players saw the widest range in ownership rates between generations. While 74% of Millennials own an mp3 player, only 56% of members of Gen X do—and adoption rates continue to drop for each of the older generations. Only 3% of adults age 75 and older own this type of device.

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### Do you own an iPod or other mp3 player?



**Source:** Pew Research Center's Internet & American Life Project, August 9-September 13, 2010 Tracking Survey. N=3,001 adults 18 and older, including 1,000 reached via cell phone. Interviews were conducted in English (n=2,804) and Spanish (n=197).

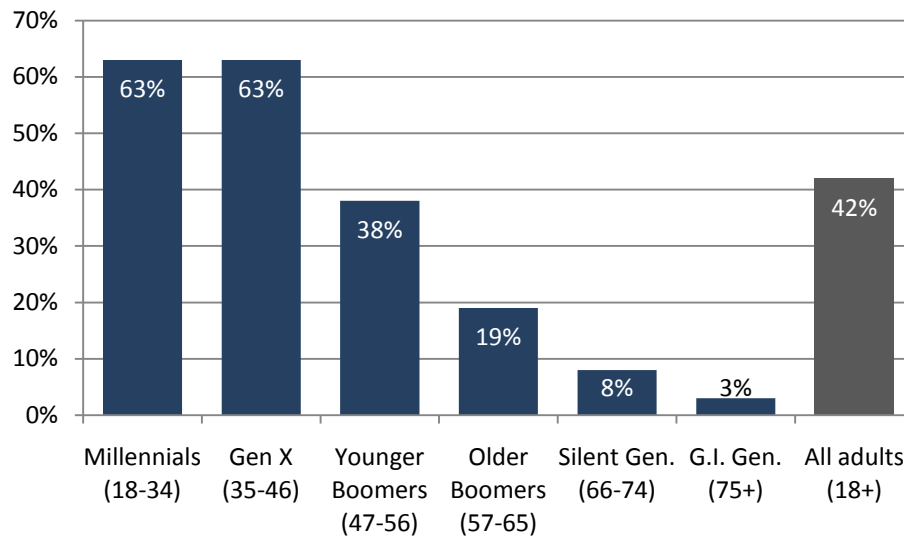
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## Game consoles

Overall, 42% percent of all adults age 18 and older own a game console, and it is especially popular with members of the Millennial Generation and Generation X. Sixty-three percent of all adults ages 18-46 own a game console like an Xbox or Play Station, as well as 38% of those ages 47-56. Ownership rates continue to drop off, to 19% of Older Boomers (ages 56-64), 8% of the Silent Generation (ages 66-74), and only 3% of the G.I. Generation (age 75 and older).

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### Do you own a game console, like an Xbox or Play Station?



**Source:** Pew Research Center's Internet & American Life Project, August 9-September 13, 2010 Tracking Survey. N=3,001 adults 18 and older, including 1,000 reached via cell phone. Interviews were conducted in English (n=2,804) and Spanish (n=197).

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Additionally, as previously reported in “Americans and Their Gadgets,” parents with children living at home are nearly twice as likely as non-parents to own a game console—64% of parents own one, vs 33% of non-parents.<sup>5</sup>

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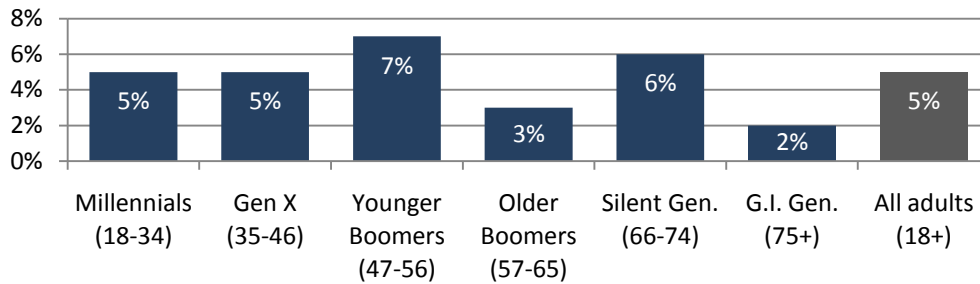
<sup>5</sup> See “Americans and their gadgets” (2010): <http://pewinternet.org/Reports/2010/Gadgets/Report/Game-consoles.aspx>

## e-Book Readers and Tablet Computers

As of September 2010, 5% of American adults own an electronic book reader such as a Kindle or Sony Digital Book, up from 2% of adults the first time the question was asked in April 2009.

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### Do you own an electronic book device or e-Book reader, such as a Kindle or Sony Digital Book?



**Source:** Pew Research Center's Internet & American Life Project, August 9-September 13, 2010 Tracking Survey. N=3,001 adults 18 and older, including 1,000 reached via cell phone. Interviews were conducted in English (n=2,804) and Spanish (n=197).

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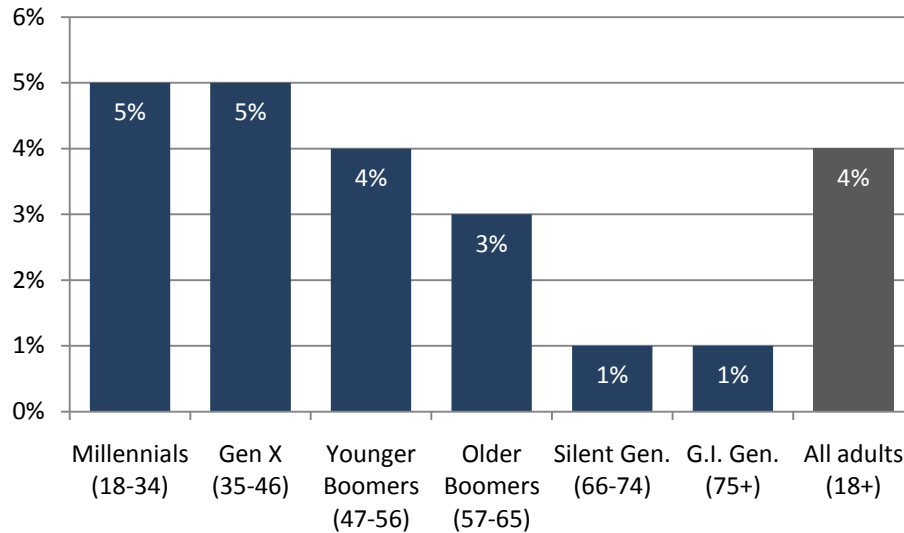
Statistically, there is very little variation between the different generations, although the G.I. Generation is slightly less likely than younger generations to own such a device. Though age is not a strong predictor of e-book use, our previous “Gadgets” report noted that ownership is more likely among college graduates and those with relatively high household incomes.<sup>6</sup>

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<sup>6</sup> See “Americans and their gadgets” (2010): <http://pewinternet.org/Reports/2010/Gadgets/Report/eBook-Readers-and-Tablet-Computers.aspx>

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## Do you own a tablet computer, like an iPad?



**Source:** Pew Research Center's Internet & American Life Project, August 9-September 13, 2010 Tracking Survey. N=3,001 adults 18 and older, including 1,000 reached via cell phone. Interviews were conducted in English (n=2,804) and Spanish (n=197).

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Though there have been several incarnations of tablet-like computers over the years,<sup>7</sup> they had not gained widespread attention until Apple introduced the iPad in early 2010.<sup>8</sup>

As of September 2010, 4% of American adults own a tablet computer such as an iPad. Though education and household income are high predictors for owning a tablet computer, as with e-book readers, they are also more popular with adults age 56 and under (who are significantly more likely to own a tablet computer than adults age 66 and older).

In a previous May 2010 survey, when 3% of all adults said they owned a tablet computer, roughly six in ten of tablet owners said they use their device to access the internet. However, given the small number of tablet owners these findings are not reported in detail here.<sup>9</sup>

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<sup>7</sup> Brad Stone and Ashlee Vance, "Just a Touch Away, the Elusive Tablet PC." *The New York Times*, October 4, 2009. <http://www.nytimes.com/2009/10/05/technology/05tablet.html>

<sup>8</sup> The iPad was introduced in January 27, 2010 and went on sale April 3.

<sup>9</sup> See "Mobile Access" (2010): <http://pewinternet.org/Reports/2010/Mobile-Access-2010/Part-3/Mobile-access-using-laptops-and-other-devices.aspx>

## Methodology

This majority of report is based on the findings of a daily tracking survey on Americans' use of the Internet. The results in this report are based on data from telephone interviews conducted by Princeton Survey Research Associates International between August 9 and September 13, 2010, among a sample of 3,001 adults, age 18 and older. Interviews were conducted in English and Spanish. For results based on the total sample, one can say with 95% confidence that the error attributable to sampling is plus or minus 2.5 percentage points. For results based Internet users (n=2,065), the margin of sampling error is plus or minus 2.9 percentage points. In addition to sampling error, question wording and practical difficulties in conducting telephone surveys may introduce some error or bias into the findings of opinion polls.

The margin of error for each generational subgroup, however, can be considerably higher than that for the sample of all internet users. Below is a list of the average margins of error for each age group:

Generation name	MOE for % of internet users
Millennials (ages 18-34)	±4%
Gen X (ages 35-46)	±4.8%
Younger Boomers (ages 47-56)	±4.7%
Older Boomers (ages 57-65)	±4.8%
Silent Generation (ages 66-74)	±5.7%
G.I. Generation (age 75+)	±5.7%

A combination of landline and cellular random digit dial (RDD) samples was used to represent all adults in the continental United States who have access to either a landline or cellular telephone. Both samples were provided by Survey Sampling International, LLC (SSI) according to PSRAI specifications. The landline sample for this survey was designed to generalize to the U.S. adult population and to oversample African-Americans and Hispanics. To achieve these objectives in a cost effective manner, the design uses standard list-assisted random digit dialing (RDD) methodology, but telephone numbers are drawn disproportionately from telephone exchanges with higher than average density of African-American and/or Hispanic households. The cellular sample was not list-assisted, but was drawn through a systematic sampling from dedicated wireless 100-blocks and shared service 100-blocks with no directory-listed landline numbers.

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 7 attempts were made to complete an interview at a sampled telephone number. 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 number received at least one daytime call in an attempt to find someone available. For the landline sample, half of the time interviewers first asked to speak with the youngest adult male currently at home. If no male was at home at the time of the call, interviewers asked to speak with the youngest adult female. For the other

half of the contacts interviewers first asked to speak with the youngest adult female currently at home. If no female was available, interviewers asked to speak with the youngest adult male at home. For the cellular sample, interviews were conducted with the person who answered the phone. Interviewers verified that the person was an adult and in a safe place before administering the survey. Cellular sample respondents were offered a post-paid cash incentive for their participation. All interviews completed on any given day were considered to be the final sample for that day.

Disproportionate sampling and non-response in telephone interviews can produce biases in survey-derived estimates. The dataset was weighted in two stages. The first stage of weighting corrected for the disproportionate landline sample design and also accounted for the overlapping landline and cellular sample frames as well as different probabilities of selection associated with the number of adults in the household. The second stage of weighting matched overall sample demographics to population parameters. The demographic weighting parameters are derived from a special analysis of the most recently available Census Bureau's March 2009 Annual Social and Economic Supplement. This analysis produces population parameters for the demographic characteristics of adults age 18 or older. 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.

Following is the full disposition of all sampled telephone numbers:



**Table 1: Sample Disposition**

Landline	Cell	
53,160	17,075	Total Numbers Dialed
2,613	441	Non-residential
2,430	32	Computer/Fax
21	---	Cell phone
27,936	6,428	Other not working
4,308	311	Additional projected not working
15,852	9,863	Working numbers
29.8%	57.8%	Working Rate
1,436	104	No Answer / Busy
2,734	2,370	Voice Mail
84	17	Other Non-Contact
11,598	7,372	Contacted numbers
73.2%	74.7%	Contact Rate
1,020	1,027	Callback
8,303	4,597	Refusal
2,275	1,748	Cooperating numbers
19.6%	23.7%	Cooperation Rate
158	60	Language Barrier
---	646	Child's cell phone
2,117	1,042	Eligible numbers
93.1%	59.6%	Eligibility Rate
116	42	Break-off
2,001	1,000	Completes
94.5%	96.0%	Completion Rate
13.6%	17.0%	Response Rate

The disposition reports all of the sampled telephone numbers ever dialed from the original telephone number samples. The response rate estimates the fraction of all eligible respondents in the sample that were ultimately interviewed. At PSRAI it is calculated by taking the product of three component rates:

- **Contact rate** – the proportion of working numbers where a request for interview was made
- **Cooperation rate** – the proportion of contacted numbers where a consent for interview was at least initially obtained, versus those refused
- **Completion rate** – the proportion of initially cooperating and eligible interviews that were completed

Thus the response rate for the landline sample was 13.6 percent. The response rate for the cellular sample was 17.0 percent.

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**August Health Tracking Survey 2010**

Final Topline

9/17/10

Data for August 9 – September 13, 2010

Princeton Survey Research Associates International  
for the Pew Research Center's Internet & American Life ProjectSample: n= 3,001 national adults, age 18 and older, including 1,000 cell phone interviews  
Interviewing dates: 08.09.10 – 09.13.10Margin of error is plus or minus 3 percentage points for results based on Total [n=3,001]  
Margin of error is plus or minus 3 percentage points for results based on internet users [n=2,065]  
Margin of error is plus or minus 3 percentage points for results based on cell phone users [n=2,485]  
Margin of error is plus or minus 3 percentage points for results based on online health seekers [n=1,655]

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**Q10** As I read the following list of items, please tell me if you happen to have each one, or not. Do you have... [INSERT ITEMS IN ORDER]?

	YES	NO	DON'T KNOW	REFUSED
a. A desktop computer				
Current	59	40	*	*
May 2010	62	38	*	*
January 2010	59	41	0	*
December 2009	58	42	*	*
September 2009	62	37	0	*
April 2009	64	36	*	*
April 2008	65	34	*	--
Dec 2007	65	35	*	--
April 2006	68	32	*	--
b. A laptop computer or netbook <sup>10</sup>				
Current	52	48	*	*
May 2010	55	45	*	0
January 2010	49	51	*	*
December 2009	46	53	*	*
September 2009	47	53	*	*
April 2009	47	53	*	*
April 2008	39	61	*	--
Dec 2007	37	63	*	--
April 2006	30	69	*	--

**Q10 continued...**

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<sup>10</sup> Through January 2010, item wording was "A laptop computer [IF NECESSARY: includes a netbook]."

	YES	NO	DON'T KNOW	REFUSED
c. A cell phone or a Blackberry or iPhone or other device that is also a cell phone <sup>11</sup>				
Current	85	15	*	*
May 2010	82	18	*	0
January 2010 <sup>12</sup>	80	20	0	*
December 2009	83	17	0	*
September 2009	84	15	*	*
April 2009	85	15	*	*
April 2008	78	22	*	--
Dec 2007	75	25	*	--
Sept 2007	78	22	*	--
April 2006	73	27	*	--
January 2005 <sup>13</sup>	66	34	*	--
November 23-30, 2004	65	35	*	--
d. An electronic book device or e-Book reader, such as a Kindle or Sony Digital Book				
Current	5	95	*	*
May 2010	4	96	*	*
September 2009	3	97	*	*
April 2009	2	98	*	*
e. An iPod or other MP3 player <sup>14</sup>				
Current	47	53	*	*
May 2010	46	54	*	0
September 2009	43	57	*	0
April 2009	45	55	*	*
December 2007	34	66	*	--
April 2006	20	79	*	--
February 2005	11	88	1	--
January 2005	11	88	1	--

**Q10 continued...**

**Q10 continued...**

<sup>11</sup> Prior to April 2009, item wording was "A cell phone." From April 2009 thru December 2009, item wording was "A cell phone or a Blackberry or iPhone or other device that is also a cell phone." Beginning December 2007, this item was not asked of the cell phone sample, but results shown here reflect Total combined Landline and cell phone sample.

<sup>12</sup> In January 2010, item wording was "A cell phone or a Blackberry or iPhone or other handheld device that is also a cell phone."

<sup>13</sup> Through January 2005, question was not asked as part of a series. Question wording as follows: "Do you happen to have a cell phone, or not?"

<sup>14</sup> Through February 2005, question was not asked as part of a series. Question wording as follows: "Do you have an iPod or other MP3 player that stores and plays music files, or do you not have one of these?"

	YES	NO	DON'T KNOW	REFUSED
f. A game console like Xbox or Play Station				
Current	42	57	*	*
May 2010	42	58	*	*
September 2009	37	63	*	*
April 2009	41	59	*	*
g. A tablet computer like an iPad				
Current	4	96	*	*
May 2010	3	97	*	0