

**Consumers and the IP Transition:**  
**Communications patterns in the midst of technological  
change**

**John B. Horrigan, PhD**  
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## Summary of Findings

Americans today have a range of communications services with a variety of features that let them stay in touch with others, access information, and share their ideas and creativity with the world. Many people embrace the new, some do not, and a lot of some of both. Even “tech shy” people will send a text on a smartphone and stream video, while even the most ardent technophile might sometimes watch broadcast TV over the air after getting off a call on a landline phone. New technologies and services alter people’s communications habits, but they do not upend them completely. And they do not necessarily change the values – universal service, reliability, and connection quality – that people and society bring to the networks that enable communication.

This report explores how people use telephone services in today’s communications market and their views on the values that accompany something that is deeply embedded in our society’s fabric. Here are the main findings:

### ***Landline phones still have a strong foothold in online Americans’ phone calling patterns.***

Even though many Americans have become “wireless only” in recent years, a majority of Americans still have landlines at home and nearly half have both a wireless phone and landline. Among those who keep both telephone plans:

- Two-thirds (65%) say their calls at home are *mostly* on their landline
  - That figure is higher (72%) for households whose annual incomes are under \$25,000.
- 82% say they keep their landline because they like its reliability
- 73% keep their landline because they like its connection quality
- 45% keep it the landline because it works when there is an electric outage

### ***Online Americans see the telephone as an anchor for household communications services and most believe that telephone service should support features such as emergency services, interconnection, and location-based services.***

- 89% of online Americans say the telephone is a very (58%) or somewhat (31%) important service for the typical household to have:
  - This compares with 78% of Americans who say this about broadband, with far fewer (34%) saying broadband is very important and 44% saying it is somewhat important.
- A strong majority of respondents said that telephone service should support certain features:
  - 96% say it is very (88%) or somewhat (8%) important that the phone be able to reach emergency services such as 911.
  - 81% say it is very (49%) or somewhat (32%) important that a phone be able to reach all other numbers in the country.
  - 59% say it is very (24%) or somewhat (35%) important that a phone be able to communicate its location.

Other features figure less prominently for people when thinking about phone service, but nonetheless 36% of respondents cited at least one of the three things listed below as a reason they keep their phone service:

- 26% say they keep their landline because they need it for a fax machine, and about one-third of respondents over the age of 45 say this.
- 24% keep their landline in order to receive medical alerts.
- 17% keep their landline because of a home security system.

## **Introduction**

American consumers of information and communications technologies (ICTs) have become navigators of a communications product climate that offers a range of choices and features. People make phone calls on home landline telephones or pocket-sized smartphones. They go online with home broadband connections, the same smartphone they use for phone calls, or portable tablet devices. Although important adoption gaps exist, it is increasingly becoming the norm that Americans have multiple ways to make phone calls and go online. Being in touch with others or finding information no longer, for a large number of Americans, requires the physical presence at a specific location like the home, office, or library. It simply requires a subscription to an information service and a portable computing device.

From the perspective of the communications network, the most efficient way for consumers to get the most out of their information services and devices is to access networks that use Internet Protocol (IP) to send information. As the National Broadband Plan stated, the transition to all-IP networks offers “extraordinary opportunities to improve American life and benefit consumers” while at the same time noting that in past communications technology transitions “government policies helped ensure that legacy regulations and services did not become a drag on the transition to a more modern and efficient use of resources, that consumers did not lose services they needed and that businesses could plan for and adjust to the new standards.”

To help policymakers understand where consumers are as this transition unfolds, this report presents findings of a national survey of American technology users that asked people about their preferences for cell versus landline for voice communication, as well as views on other dimensions of voice communication. Even though Americans increasingly rely on cell phones for making telephone calls, most homes still have a landline. Questions in the survey explored the reasons for that and probe into phone calling habits of Americans with cell phones and landlines.

## ***Methodology***

This report is based on a survey of 2,149 online Americans conducted in July 2014. The survey was conducted by GfK and, with the online frame for the survey, respondents are only those adult Americans with Internet access at home. According to the Census Bureau’s American Communities Survey, in 2013 some 79% of Americans were Internet users, with 73% having broadband at home. Results in this report, therefore, refer to online Americans. In the survey, 1,831 respondents had broadband at home and 1,977 had a cell phone; results are weighted to reflect the composition of the online population. The margin for error for results reported, for the entire sample of either cell phone or broadband users, is plus or minus 2.5 percentage points.

## I. Phone calling habits and attitudes

The means by which Americans make phone calls has changed dramatically in the past decade as more and more Americans have adopted cell phones. Fewer households have a landline telephone, which for years was a staple in the majority of American homes. According to the Federal Communications Commission, the number of mobile wireless connections increased from 45 per 100 people in 2001 to 102 per 100 people by 2011.<sup>1</sup> The Pew Research Center shows a similar increase, with 53% of adults having a cell phone in 2000 and 90% having them by early 2014.<sup>2</sup>

These trends have given rise to the “wireless substitution” phenomenon by which households do away with landline phones and rely solely on cell phones for their calls. The latest data from the Centers for Disease Control (CDC), which run through December 2013, show that 41.0% of households are “wireless only,” up from 38.2% the year before.<sup>3</sup> This is double the rate compared with 2008, when 20.2% of homes were “wireless only.”<sup>4</sup>

It is worth noting that the growth in wireless substitution has been slowing in the past several years. As the table below shows, taken from CDC statistics, the semi-annual growth rate in wireless substitution has steadily fallen in the past several years. In fact, the average growth in wireless substitution from mid-year to end of year between 2006 and 2009 was 13%. For the period starting in mid-2010 to the end of 2013, that figure was 6%, or about half the 2006-2009 growth rate.

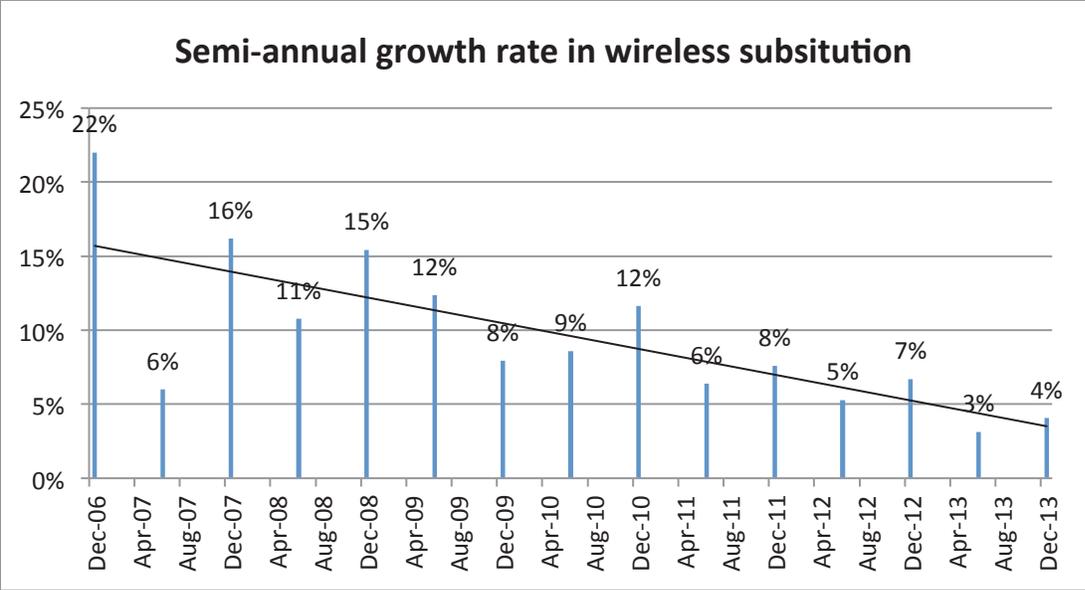
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<sup>1</sup> FCC 16<sup>th</sup> Mobile Competition Report, March 2013, p. 10. Available online at: <http://www.fcc.gov/document/16th-mobile-competition-report>

<sup>2</sup> Pew Research Center, “Device Ownership Over Time.” Available online at: <http://www.pewinternet.org/data-trend/mobile/device-ownership/>.

<sup>3</sup> Centers for Disease Control, “Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July–December 2013. Available online at: <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201407.pdf>

<sup>4</sup> Centers for Disease Control, “Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July–December 2009.” Available online at: <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201005.pdf>



The “wireless only” phenomenon is led by several (not mutually exclusive) demographic groups, namely young people, African Americans, Latinos, and poor Americans. According to the CDC, the percentage of wireless only adults plays out as follows when looking at these characteristics.

**Table 1**

	% Wireless only
Age 25-29	65.7%
Age 30-34	59.7
Poor	56.2
Hispanic	53.1
Age 18-24	53.0
African American	42.7

Even with the rise of “wireless only” households, a majority of American households – 56.3% – have a landline phone, with 47.7% having both a cell and landline and 8.6% having a landline only.

In this survey, when asked how they or others in your household generally make or receive phone calls, 45% of cell-using respondents said that all or most of the calls are on a cell phone, 33% said some were on a cell phone and some on a regular home phone, and 21% said almost all calls are on a regular home phone. This question on how people make their calls suggests, that in this sample, 45% of respondents are “cell only” households while 54% have a landline (2% did not give a response). These figures are in line with the CDC figures reported above on the proportion of homes that are cell only or have landlines.

Although the “wireless only” trends are well documented, less scrutinized is the phone calling patterns of Americans – the millions of Americans with cell phones and landlines in addition to those of the “wireless only.” In fact, even the cell phone-using public with landlines is heavily reliant on the landline telephone. For those with both landline and cell phones – a majority of American

homes – phone calls at home generally rely on the landline. Among those with cell phones and home landlines:

- 65% say their calls at home are mostly on the landline
- 23% say it is a mix of cell and landline calls
- Just 12% say their calls at home (even with a landline available) are mostly on their cell phones

Among homes where the annual income is \$25,000 or less *and* both landline and cell phones, nearly three-quarters (72%) say their calls at home are mostly on the landline.

The survey also asked why people with cell phones and landlines keep both, when one – the cell phone – would be the cheaper option. The responses show that those who keep both value the landline’s reliability, call quality, and the fact that most people in their social network know to contact them using their landline number. This is especially true for older adults – those who are 60 or older, who make up 18.5% of the entire population.

**Table 2**

Which of the following is a reason you keep your landline phone at home, given that you also have a cell phone?					
	All	Age 18-29	Age 30-44	Age 45-59	Age 60+
It is reliable	82%	74%	77%	83%	92%
Family and friends use landline to call me	75	61	66	80	89
Like connection quality	73	59	70	76	85
Landline works when there’s an electric outage	45	47	44	41	49

Less important are specific features that users rely upon using their landline. Still, 36% of those with a cell and landline keep it for at least one of the three reasons cited below that relate to features.

**Table 3**

Which of the following is a reason you keep your landline phone at home, given that you also have a cell phone?					
	All	Age 18-29	Age 30-44	Age 45-59	Age 60+
Need it for fax machine	26%	16%	23%	30%	31%
Medical alerts	24	28	25	19	27
Security system	17	10	21	23	12

Call quality is not a huge worry for most Americans. A minority of Americans – 24% – say that they sometimes have difficulty completing calls or have calls end unexpectedly during a conversation

(3% say this happens often and 21% say sometimes). These patterns do not vary significantly by geographical location, with 4% of rural Americans saying they often have problems with call completion or unexpected termination and 21% saying this happens sometime.

As to other phone calling services, only 17% of respondents said that they use Voice over Internet Protocol (VoIP) services such as Skype or Vonage to make phone calls using their home Internet connection. Younger broadband users are more likely to do this, with 21% of those ages 18 to 29 having used VoIP and 20% of those age 30-44 having done so. The most prevalent reason for using VoIP services is video calls (71% of VoIP users cited this), followed by international calling (44%), and work calls (20%).

Respondents also received questions on how their telephone service is billed to them. Knowing this, to some extent at least, sheds light on the kind of technology they have for their home phone calling. Respondents said that:

- 50% receive a single telephone bill for telephone service
- 30% receive a bill that includes telephone, cable, and Internet service
- 18% receive a bill that includes telephone and Internet service

Many of these respondents are “cell only” consumers. When the results focus only on respondents who have a landline at home (55% of the sample), the numbers are different.

- 34% receive a single telephone bill for telephone service
- 43% receive a bill that includes telephone, cable, and Internet service
- 22% receive a bill that includes telephone and Internet service

The results suggests that, for American homes still with a landline phone, four in ten (43%) have a telephone service that runs over networks that use the Internet Protocol to transmit data. Some of the 22% with bundled Internet and phone bills may have phone service running on IP, some may have phone service that runs on legacy networks. Landline users who have a single telephone bill – 34% of that group – are likely to have service that runs on legacy networks.

Bundled billing – for the portion of the sample with either a two-way or three-way bundle – is overwhelming seen as convenient. Some 94% say the bundled bill is convenient (55% believe this strongly and 39% somewhat). At the same time, one-third of this group say having a bundle makes it difficult to understand the monthly cost of each service; 8% strongly agreed with the notion that a bundle makes it hard to understand the cost of each service and 25% somewhat agreed with this.

## II. Communications services in the household and society

Information and communications services have been a part of American homes for nearly a century. Telephone penetration first topped 33% of American homes in 1920, cable TV reached that threshold in 1982, and home Internet access topped one-third threshold in 1999. Broadband has been a fixture in a majority of American homes since 2007 and people have had ample time to develop views on how broadband matters to their homes and society, relative to other services such as the telephone.

To explore those views, the survey asked respondents to think about communications services relative to other services that most people take for granted as part of American households. Not surprisingly, vast majorities see water, electricity, and heat as crucial for the typical household, with 95%, 93%, and 85% respectively citing these as *very important* to American homes. Some 59% cite air conditioning as very important, with another 30% saying it is somewhat important.

When it comes to video or communications, respondents see the telephone as the most important service of the ones in the video and communications category, followed by broadband and cable TV.

**Table 4**

Most homes have different services that make them function in ways that people generally regard as commonplace. How important are the following services to the functioning of the typical household in America?					
	All	Age 18-29	Age 30-44	Age 45-59	Age 60+
Telephone					
Very important	58%	45%	49%	61%	73%
Somewhat important	31	37	37	27	23
High-speed Internet					
Very important	34%	39%	31%	34%	31%
Somewhat important	44	40	44	44	49
Cable television					
Very important	23%	21%	19%	22%	29%
Somewhat important	34	30	32	37	39

There are some differences in responses across racial categories. In particular, African Americans are more likely to see the telephone and cable TV as very important to the typical household. They are also, relative to white Americans and the national average, significantly more likely to see home high-speed service as very important to the typical home.

**Table 5**

Most homes have different services that make them function in ways that people generally regard as commonplace. How important are the following services to the functioning of the typical household in America?			
	White	African American	Hispanic
Telephone			
Very important	57%	63%	51%
Somewhat important	31	27	33
High-speed Internet			
Very important	29%	44%	41%
Somewhat important	48	36	37
Cable television			
Very important	21%	34%	24%
Somewhat important	36	34	32

The survey asked not just how people viewed the importance of services, but it also delved into specific features that often come along with voice service. Strong majorities agreed that it is important that their telephone service be able to reach emergency services, reach all other telephone numbers in the country, and communicate their location so they can use services such as maps. Overall:

- 96% said that it is either very (88%) or somewhat (8%) important that their phone be able to reach emergency services such as 911.
- 81% said it is either very (49%) or somewhat (32%) that their phone service reaches all other telephone numbers in the country.
- 59% said it is either very (24%) or somewhat (35%) important that their phone have the capability to communicate their location.

Just a quarter (23%) said it was important to be able to send or receive faxes, with just 8% saying this is very important and 15% saying it is somewhat important.

### III. Implications & Conclusions

Roy Amara famously said that: “We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run.” The cultural influence of early technology adopters creates an image of instant adaptation to technology brought about by the latest innovation. Yet technology adoption is a more uneven process and ensuing behavioral changes are less predictable than early adopters assume. Markets are excellent mechanisms to sort out the inherent unpredictability of technological change for private goods. They reward those who understand how to exploit pervasive connectivity to attract advertising dollars (Google) and penalize those who fail to realize how consumer demands for on-the-go connectivity can reshape the mobile market (Blackberry).

For policymakers, the challenge is different when new technologies – such as the telephone, mobile devices, and the Internet – rely on public assets and reach deeply into our social fabric. The task for policymakers is to understand where consumers are and balance the need to facilitate the changes new technology supports while recognizing that many consumers may be content with a leisurely pace on the adoption path. And, as noted at the outset, changes in technology and changes in the accompanying societal values may be two very different things.

So what does the survey tell us about where consumers are in the midst of change in ICTs?

- “Old school” phone calling patterns are prevalent for many Americans. The landline telephone, notwithstanding the advent of wireless substitution, occupies a privileged place in the communication habits for many households. Of Americans with a landline and cell phone – over half of all homes – phone-calling at home is mostly about the landline.
- Important values about the place of communications in society endure – universal service, end-to-end connectivity, network reliability, and emergency services. By strong majorities, respondents said it was important that their telephone reach everyone else in the country, and reach emergency services.
- Different population segments exhibit tech usage patterns that warrant special attention for policymakers. In particular, older adults are tech traditionalists who are heavily reliant on the landline phone. Low-income households with landlines and cell phones also report heavy reliance on the landline for home phone calling.

The key lesson for policymakers from all this is that the issues explored in this report do not lend themselves to “either/or” judgments about the virtues of new information and communications technologies. Different people will adapt to new technology at different paces. Technological change can best serve *all* segments of society if stakeholders create a climate that takes into account the preferences of late adopters and the values that all Americans place on communications services.

## Appendix:

### Topline results from the survey

Question numbers are not sequential because not all questions used in the survey were used for analysis in this report.

Q1. Do you have a cell phone?

Yes	92%
No	7%

Q17 Of all the telephone calls that you and other people in your household make or receive, are...

All or almost all calls on a cell phone	45%
Some on a cell phone and some on a regular home phone	33%
All or almost all calls on a regular home phone	21%
Don't know	2%

Q18 In thinking about the phone you use for most of your calls, how would you rate the quality of the reception it has for your telephone conversations?

Excellent	35%
Good	50%
Fair	11%
Poor	2%
Don't know	1%

Q19 In thinking about the phone calls you make, how often do you have trouble making phone calls, either difficulty completing calls or calls ending unexpectedly during conversations?

Often	3%
Sometimes	21%
Infrequently	44%
Never	29%
Don't know	2%

Q20 In thinking about the bill you get for your telephone service, do you receive ...?

A single bill for your telephone service	50%
A bill that includes BOTH telephone and Internet service	18%
A bill that includes BOTH telephone, cable, and Internet service	30%

Q20a You said you received a “bundled bill” for some of your services. Please indicate whether you agree or disagree with the following statements about your bill.

a. Having several services in one bill is convenient

Strongly agree	55%
Somewhat agree	39%
Somewhat disagree	4%
Strongly disagree	2%

b. Having several services in one bill makes it difficult to understand the monthly cost for each individual service

Strongly agree	8%
Somewhat agree	25%
Somewhat disagree	36%
Strongly disagree	28%

Q21 When you make phone calls at home, do you mostly use your landline phone or cell phone?

Mostly landline	65%
Mostly cell phone	12%
A mix of cell phone and landline	23%

Q22 Which of the following is a reason that you keep your landline telephone at home, given that you also have a cell phone?

a. It is reliable

Yes	82%
No	11%
Don't know	5%

b. I like the quality of the connection for phone conversations

Yes	73%
No	19%
Don't know	6%

c. Many family and friends use the landline phone number to call me

Yes	75%
No	18%
Don't know	7%

d. My home security system runs over my landline

Yes	17%
No	69%
Don't know	14%

e. I need it for my fax machine

Yes	26%
No	64%
Don't know	10%

f. Medical alerts

Yes	24%
No	63%
Don't know	13%

g. It works when there is an electric outage in my house

Yes	45%
No	40%
Don't know	14%

Q23 When making phone calls, do you ever use services such as Vonage or Skype that require a home Internet connection?

Yes	17%
No	80%
Don't know	3%

[if q23=1]

Q23a Why do you use these services for phone calls?

a. For work calls

Yes	20%
No	75%
Don't know	5%

b. For video capability

Yes	71%
No	26%
Don't know	3%

c. International phone calls

Yes	44%
No	52%
Don't know	4%

Finally, we have some questions about communications services and their place in society.

Q24 Most homes have different services that make them function in ways that people generally regard as commonplace. How important are the following services to the functioning of a typical household in America?

a. Electricity

Very important	93%
Somewhat important	5%
Not too important	1%
Not at all important	1%

b. Water

Very important	95%
Somewhat important	3%
Not too important	1%
Not at all important	1%

c. Cable television

Very important	23%
Somewhat important	34%
Not too important	26%
Not at all important	16%

d. Heating

Very important	85%
Somewhat important	11%
Not too important	3%
Not at all important	1%

e. Air conditioning

Very important	59%
Somewhat important	30%
Not too important	8%
Not at all important	3%

f. Telephone

Very important	58%
Somewhat important	31%
Not too important	9%
Not at all important	3%

g. High speed Internet

Very important	34%
Somewhat important	44%
Not too important	17%
Not at all important	5%

Q26 When thinking about your telephone service, how important is it for your telephone to be able to...?

a. Reach everyone else in the country that has a telephone number

Very important	49%
Somewhat important	32%
Not too important	12%
Not at all important	5%

b. Reach emergency services, such as 911

Very important	88%
Somewhat important	8%
Not too important	2%
Not at all important	1%

c. Send or receive faxes

Very important	8%
Somewhat important	15%
Not too important	34%
Not at all important	41%

d. Communicate your location so that you can use certain services, such as maps

Very important	24%
Somewhat important	35%
Not too important	27%
Not at all important	13%