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Social Media and the Cost of Caring

Frequent use of digital technologies is not directly related to higher stress. In fact, women who are heavy users of some social media report lower stress. However, social media use can increase users' awareness of stressful events in others' lives, and awareness of these events does lead to higher levels of stress. This is the "cost of caring."

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About this report

The widespread use of the internet and related digital technologies has raised concerns that technology use may be responsible for higher levels of psychological stress. This report explores that possibility as well as the possibility that these technologies increases people's awareness of stressful experiences in the lives of friends and family which in turn affect users' own stress.

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Summary of Findings

For generations, commentators have worried about the impact of technology on people's stress. Trains and industrial machinery were seen as noisy disruptors of pastoral village life that put people on edge. Telephones interrupted quiet times in homes. Watches and clocks added to the de-humanizing time pressures on factory workers to be productive. Radio and television were organized around the advertising that enabled modern consumer culture and heightened people's status anxieties.

Inevitably, the critics have shifted their focus onto digital technology. There has been considerable commentary about whether internet use in general and social media use in particular are related to higher levels of stress.² Such analysts often suggest that it is the heaviest users of these technologies that are most at risk. Critics fear that these technologies take over people's lives, creating time pressures that put people at risk for the negative physical and psychological health effects that can result from stress.

This research explores whether the use of social media, mobile phones and the internet is associated with higher levels of stress. In a Pew Research Center survey of 1,801 adults,³ we asked participants about the extent to which they felt their lives were stressful, using an established scale of stress called the Perceived Stress Scale (PSS).⁴ This scale is based on people's answers to 10 questions that assess whether they feel that their life is overloaded, unpredictable and uncontrollable. Perceived stress, as measured through the PSS, can be viewed as an assessment of the risk that people face for psychological disorders related to stress, such as anxiety and depression, as well as physical illnesses, such as cardiovascular disease and susceptibility to infectious diseases.

There are a number of well-known factors that tend to make people feel more stress, including things like the economic uncertainty of unemployment, and the absence of a spouse or a partner with whom to confide. Previous studies have even found that awareness of stressful events in others' lives is a major contributor to people's appraisal of their own stress levels. The relationship of frequent use of digital technologies to stress has been an unknown. We also explored the possibility that the social component of some digital technologies makes people more aware of stressful events in the lives of their close friends and family, as well as in the lives of more socially distant acquaintances, and that this in turn is related to higher levels of stress.

² See for instance: Dick, John (2013). [Why Do Social Networks Increase Stress?](#) Huffington Post; Maldonado, Marissa (accessed November 2014). [The Anxiety of Facebook](#), PsychCentral.

³ The survey was conducted between August 7-September 16, 2013 and has a margin of error of plus or minus 2.6 percentage points for the full sample.

⁴ Cohen, S., et al. (1983). "A global measure of perceived stress." [Journal of health and social behavior](#): 385-396.

The survey analysis produced two major findings that illustrate the complex interplay of digital technology and stress:

- **Overall, frequent internet and social media users do not have higher levels of stress.** In fact, for women, the opposite is true for at least some digital technologies. Holding other factors constant, women who use Twitter, email and cellphone picture sharing report lower levels of stress.
- At the same time, the data show **there are circumstances under which the social use of digital technology increases awareness of stressful events in the lives of others.** Especially for women, this greater awareness is tied to higher levels of stress and it has been called “the cost of caring.” Stress is not associated with the frequency of people’s technology use, or even how many friends users have on social media platforms. But there is one way that people’s use of digital technology can be linked to stress: Those users who feel more stress are those whose use of digital tech is tied to higher levels of awareness of stressful events in others’ lives. This finding about “the cost of caring” adds to the evidence that stress is contagious.⁵

How can it be that social media use is not directly associated with stress, but for some, social media use can still lead to higher levels of stress?

The answer: The relationship between stress and social media use is indirect. It is the social uses of digital technologies, and the way they increase awareness of distressing events in others’ lives, that explains how the use of social media can result in users feeling more stress.

Imagine a typical Facebook user. He or she is also likely to use other digital technologies, such as email and text messaging. All these technologies allow him or her to share information with friends and family in the form of photos, short textual messages and other contacts. As a result of this communication, he or she is aware and reminded of more activities in the lives of friends and family.

On the one hand, there are benefits from this contact. According to [previous research](#) by the Pew Research Center, compared with non-social media users and those who are not as active on Facebook, this person likely: has more close friends; has more trust in people; feels more supported; and is more politically involved. While some might assume that this typical user of Facebook and other digital technologies experiences peer pressure to participate or keep up, and a fear of missing out, if such pressures exist, our typical user does not feel more stress than what he or she would otherwise have experienced, or the social benefit of using these technologies cancels

⁵ Kessler, R. C. and J. D. McLeod (1984). "Sex Difference in Vulnerability to Undesirable Life Events." *American Sociological Review* 49: 620-631.

out those additional costs. He or she is unlikely to feel more stress than those who are not using or are less active on social media.

On the other hand, there is the common exception to this relatively positive situation. Sometimes, a social media user's awareness of events in others' lives includes knowledge about *undesirable* events, a friend or family member getting fired or losing someone close to them. Learning of such events in the life of a friend or family member can result in higher feelings of stress.

In sum, social media users are not any more likely to feel stress than others, but there is a subgroup of social media users who are more aware of stressful events in their friends' lives and this subgroup of social media users does feel more stress.

Gender differences are a major part of this story. Women and men have different levels of stress; their use of digital technologies varies; and the impact of their technology use is different.

The broad patterns are:

- Overall, women tend to report more stress than men. But, those women who use a number of digital technologies to communicate with others tend to report less stress than women who do not use these technologies.
- Women are more aware of stressful events in the lives of their closest friends and family.
- Social media use is related to even higher levels of awareness of the stressful events that unfold in the lives of people they know.
- Awareness of stressful events in others' lives is a significant contributor to people's own stress. It is the only factor that we found that is common to both social media use and psychological stress. The number of undesirable events associated with stress is greater for women than for men.

Elaborating on the Major Findings

Overall, women tend to report more stress than men. But, women who use a number of digital technologies to communicate with others report less stress than women who are non-users.

In this survey, women report an average score of 10.5 out of 30 on the Perceived Stress Scale (PSS). Men reported an average score of 9.8 — a figure that is 7% lower than women.

Because men and women tend to experience stress differently, we ran each of our analyses separately for men and for women. We did statistical modeling allowing us to more fully understand the relationship between stress and the use of different technologies. The use of regression analysis allowed us to control for such things as age, unemployment, education levels

and marital status — all of which are related to how much stress people tend to report in their lives independent of whether they use technologies or not.⁶

When it comes to stress, there was no statistical difference in stress levels between men who use social media, cellphones, or the internet and men who do not use these technologies. However, some tech activities were linked to *less stress* among women — Twitter use, email use and photo sharing via cellphones. Compared with a woman who does not use these technologies, a woman who uses Twitter several times per day, sends or receives 25 emails per day, and shares two digital pictures through her mobile phone per day, scores 21% lower on our stress measure than a woman who does not use these technologies at all.

We do not know what it is about these specific technology uses that are associated with lower stress. However, existing studies have found that social sharing of both positive and negative events can be associated with emotional well-being and that women tend to share their emotional experiences with a wider range of people than do men.⁷ Sharing through email, sending text messages of pictures of events shortly after they happen and expressing oneself through the small snippets of activity allowed by Twitter may provide women with a low-demand and easily accessible coping mechanism that is not experienced or taken advantage of by men. It is also possible that the use of these media replaces activities or allows women to reorganize activities that would otherwise be more stressful.

Women are more aware of stressful events in the lives of their closest friends and family.

In the survey we asked people if they were aware of whether any of a list of 12 stressful events had happened to someone close to them, an acquaintance, or both in the past year. The events were selected from a list of major life events that are known social stressors.⁸ Our list ranged from relatively common to less common events: hospitalization, death in the family, divorce or marriage, being fired/laid off, being accused of a crime, starting a job, demotion/pay cut, being a victim of a crime, having a child move away or return home, pregnancy or child birth, and moving to a new house.

⁶ For our analysis we used linear regression with stepwise forward selection. As part of our survey, participants could report on their use of a large number of different technologies related to social media, cellphones, and the internet more broadly. We did not have a specific expectation as to which of these uses might be related to stress or awareness of stressful events. Stepwise forward regression is a procedure that allows you to test the possible relationships between a large number of measures and an outcome such as stress. We entered a series of demographic variables into our regression equation (age, education, race, marital status, employment status) and then used stepwise forward regression to test each of the reported measures of technology use. For each analysis, we removed independent variables for technology use at each step that were not statistically significant.

⁷ Pennebaker, J. W., et al. (2001). Disclosing and sharing emotion: Psychological, social, and health consequences. *Handbook of bereavement research: Consequences, coping, and care*. M. S. Stroebe, R. O. Hansson, W. Stroebe and H. Schut. Washington, DC, American Psychological Association: 517-543.

⁸ Turner, R. J., et al. (1995). "The Epidemiology of Social Stress." *American Sociological Review* 60(1): 104-125.

Of the 12 stressful events that we studied, on average, women were aware of a larger number of events that had occurred among people they knew. On average, men were aware of 7% fewer stressful events among their closest social ties.

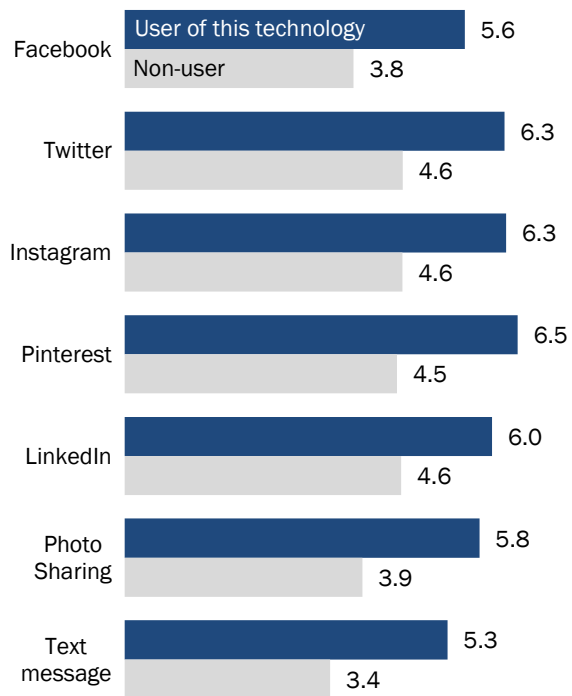
Social media users tend to be more aware of stressful events in the lives of people they know.

Different technologies are associated with varying levels of awareness of stressful events that have occurred to others — and there is also variation depending on whether the events have occurred to those who are close ties, compared with more-distant acquaintances.

Facebook was the one technology that for both men and women provides higher levels of awareness of stressful events taking place in the lives of both close and more distant acquaintances. Other technologies are more specialized: some provide awareness of major events in the lives of close relationships, while others provide an awareness of activities in the lives of acquaintances who are less socially close. It is not a new finding that people tend to use different technologies to communicate with social ties of different strengths. For example, other studies have found that cellphones and instant messaging are more likely to be used with family and close friends.⁹ To add to this complexity, we found that men and women used digital technologies differently, and this is important for understanding how people are exposed to information about stressful events in others' lives.

Technology use and awareness of stressful events in others' lives

The average number of stressful events (out of a total of 12 possible) that people knew occurred in the lives of their friends/acquaintances in the past 12 months



Note: Based on responses to Q4: "... Please tell me if you know someone—other than yourself—who has experienced any of the following in the past 12 months. Do you know someone who has ..." followed by a list of 12 different stressful events.

Source: August 2013 survey. N=1,801 adults.

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⁹ Kim, H., et al. (2007). "Configurations of Relationships in Different Media." *Journal of Computer-Mediated Communication* 12(4): URL (consulted Oct. 2010): <http://jcmc.indiana.edu/vol2012/issue2014/kim.html>.

Ling, R. S. (2008). *New Tech, New Ties*. Cambridge, MA, MIT Press.

Among Facebook users:

- A woman with an average size network of Facebook friends is aware of 13% more stressful events in the lives of her closest social ties, compared with an equivalent woman who does not use Facebook. And that average woman user is aware of 14% more stressful events in the lives of her more-distant acquaintances.
- A typical male Facebook user who comments regularly on others' posts is aware of 8% more stressful events amongst his closest social ties. A man with an average size network of Facebook friends is aware of 6% more major events in the lives of his acquaintances, compared with an equivalent male who does not use Facebook.

For women, awareness about stressful events in others' lives was also likely to be related to sharing pictures online, use of Pinterest and Twitter. For men, awareness was particularly likely to be related to email, LinkedIn and text messaging on their cellphone. These patterns are a result of both the tendency for men and women to use different technologies, and for them to use different technologies to keep in touch with different types of people — friends, family, workmates and acquaintances.

Awareness of stressful events in others' lives is a significant contributor to people's own stress. The number of undesirable events associated with stress is greater for women than for men.

The cost of caring is particularly felt by women. This is a result of two facts about women and stress: first, women report higher levels of stress to begin with, and second, women are aware of more stressful events in the lives of their friends and family.

Holding other factors constant, women who were aware that ...

- Someone close to them experienced the death of a child, partner or spouse scored 14% higher on our measure of stress.
- Someone close has been hospitalized or experienced a serious accident or injury reported 5% higher stress.
- An acquaintance had been accused of or arrested for a crime scored 11% higher on the stress measure.
- An acquaintance experienced a demotion or cut in pay reported 9% higher stress in their own lives.

For men, of the events we explored, only two predicted stress. Holding other factors constant, men who were aware that ...

- Someone close to them had been accused of or arrested for a crime scored 15% higher on our measure of stress.
- An acquaintance had experienced a demotion or pay cut at work report 12% higher stress.

While the little sips of information sent through social media may not seem like much, they can add up to a big gulp. This study suggests that the information transferred through social media translates into awareness of all kinds of extra things, including an awareness of undesirable events in the lives of family, friends and acquaintances. Whether as a result of social media, or more traditional forms of interaction, awareness of undesirable events in others' lives generates a cost in terms of increasing psychological stress, and with it, higher risk for the physical and psychological problems that often accompany stress.

About this Survey

The analysis in this report is based on findings from a nationally representative survey of 1,801 American adults (ages 18+) by the Pew Research Center fielded August 7-September 16, 2013. The survey was conducted in English and Spanish on landline and cellphones (N=900). The margin of error for the full sample is plus or minus 2.6 percentage points. Some 1,076 respondents are users of social networking sites and the margin of error for that subgroup is plus or minus 3.3 percentage points.

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Psychological Stress and Social Media Use

It makes sense to wonder if the use of digital technology creates stress. There is more information flowing into people's lives now than ever — much of it distressing and challenging. There are more possibilities for interruptions and distractions. It is easier now to track what friends, frenemies, and foes are doing and to monitor raises and falls in status on a near-constant basis. There is more social pressure to disclose personal information. These technologies are said to takeover people's lives, creating time and social pressures that put people at risk for the negative physical and psychological health effects that can result from stress.

Stress might come from maintaining a large network of Facebook friends, feeling jealous of their well-documented and well-appointed lives, the demands of replying to text messages, the addictive allure of photos of fantastic crafts on Pinterest, having to keep up with status updates on Twitter, and the “fear of missing out” on activities in the lives of friends and family.¹⁰

We add to this debate with a large, representative study of American adults and explore an alternative explanation for the relationship between technology use and stress. We test the possibility that a specific activity, common to many of these technologies, might be linked to stress. It is possible that technology users — especially those who use social media — are more aware of stressful events in the lives of their friends and family. This increased awareness of stressful events in other people's lives may contribute to the stress people have in their own lives. This study explores the digital-age realities of a phenomenon that is well documented: Knowledge of undesirable events in other's lives carries a cost — the cost of caring.¹¹

This study explores the relationship between a variety of digital technology uses and psychological stress. We asked people an established measure of stress that is known as the Perceived Stress Scale (PSS).¹² The PSS consists of ten questions and measures the degree to which individuals feel that their lives are overloaded, unpredictable and uncontrollable. Participants were asked:

¹⁰ Thomee, S. (2012). ICT use and mental health in young adults. Gothenburg, Sweden, University of Gothenburg

Williams, R. (2013). Can more friends on facebook induce stress and anxiety? *Psychology Today*. <http://www.psychologytoday.com/blog/wired-success/201307/can-more-friends-facebook-induce-stress-and-anxiety>.

Dick, J. (2013). Why Do Social Networks Increase Stress? *Huffington Post*. http://www.huffingtonpost.com/john-dick/social-networks-and-stress_b_3534170.html.

Kotenko, J. (2013). Ladies, your love-hate relationship with the internet is stressing you out. *Digital Trends*. <http://www.digitaltrends.com/social-media/can-too-much-social-media-exposure-cause-stress-in-women/>.

¹¹ Lyons, R. F., et al. (1998). "Coping as a Communal Process." *Journal of Social and Personal Relationships* **15**(5): 579-605.

Smith, R. L. and A. J. Rose (2011). "The “cost of caring” in youths' friendships: Considering associations among social perspective taking, co-rumination, and empathetic distress." *Developmental psychology* **47**(6): 1792.

¹² Cohen, S., et al. (1983). "A global measure of perceived stress." *Journal of health and social behavior*: 385-396.

In the last 30 days, how often have you:

1. Been upset because of something that happened unexpectedly
2. Felt that you were unable to control the important things in your life
3. Felt nervous and “stressed”
4. Felt confident about your ability to handle any personal problems
5. Felt that things were going your way
6. Found that you could not cope with all the things that you had to do
7. Been able to control irritations in your life
8. Felt that you were on top of things
9. Been angered because of things that were outside of your control
10. Felt difficulties were piling up so high that you could not overcome them

Participants responded on a 4-point scale from “frequently” to “never.” The ten items were combined so that a higher score indicates higher psychological stress (the scale ranges from 0-30 with zero representing no stress and 30 representing the highest level).¹³

Overall, women experience more stress than men.

The average American adult scored 10.2 out of 30 on the PSS. One of the starkest contrasts in our survey was between the level of reported stress experienced by men and women. On average, women report experiencing significantly higher levels of stress than men. The average women scores 10.5 on the PSS while the average man scores 9.8.¹⁴ On average, men reported stress levels that were 7% lower than for women.

There are other demographic characteristics that are related to stress. On average, older adults, and those who are employed tend to have less stress.

How we studied psychological stress and technology use

In the survey, respondents were asked about their use of social networking sites: We asked people about the frequency with which they use different social media platforms, such as Facebook (used by 71% of internet users in this sample), Twitter (used by 18% of internet users), Instagram (17%), Pinterest (21%), and LinkedIn (22%).

Given the popularity of Facebook, we also asked very specific questions about users’ networks and what people do on that platform: number of friends (the average was 329), frequency of status updates (the average was 8 times per month), frequency of “Liking” other people’s content (the average was 34 times per month), frequency of commenting (the average was 22 times per month), and how often they send private messages (the average was 15 times per month).¹⁵

¹³ The PSS10 was modified for use in our telephone survey; the response categories were changed from a five item scale that ranged from “never” to “very often,” to a four item scale that ranged from “never” to “frequently”.

¹⁴ ANOVA, $p < .01$

¹⁵ In this survey, 80% of adults say they are internet users and 89% said they have cellphones. A detailed demographic breakdown of the demographics of users of various social media platforms in this survey can be found [here](#).

We asked people how many digital pictures they share online (the average was 4 times per week), how many people they email (9 people/day), and how many emails they send and receive (an average of 25 per day). We also asked about their use of their mobile phone; the number of messages they text (an average of 32 messages per day), pictures sharing via text (an average of 2 pictures per day), and the number of people that they text with (an average of 4 people per day).

Given the important differences in stress levels based on age, education, marital status, and employment status, we used regression analysis to control for these factors. By using regression analysis we are able determine the degree to which technology use is specifically associated with stress by holding demographic characteristics constant. Since men and women tend to experience stress differently, we ran separate analyses for each sex.

Those who are more educated and those who are married or living with a partner report lower levels of stress.

We found that women, and those with fewer years of education, tend to report higher levels of stress, while those who are married or living with a partner report less psychological stress (see Table 1 in Appendix A). For women (but not men), those who are younger, and those who are employed in paid work outside of the home also tend to experience less stress.

The frequency of internet and social media use has no direct relationship to stress in men. For women, the use of some technologies is tied to lower stress.

For men, there is no relationship between psychological stress and frequent use of social media, mobile phones, or the internet more broadly. Men who use these technologies report similar levels of stress when compared with non-users.

For women, there is evidence that tech use is tied to modestly lower levels of stress. Specifically, the more pictures women share through their mobile phones, the more emails they send and receive, and the more frequently they use Twitter, the lower their reported stress. However, with the exception of Twitter, for the average person, the relationship between stress and these technologies is relatively small. Women who are heavier participants in these activities report less stress. Compared with a woman who does not use these technologies, a woman who uses Twitter several times per day, sends or receives 25 emails per day, and shares two digital pictures through her mobile phone per day, scores 21% lower on our stress measure than a woman who does not use these technologies at all.

From this survey we are not able to definitively determine why frequent uses of some technologies are related to lower levels of reported stress for women. Existing studies have found that social sharing of both positive and negative events can be associated with emotional well-being and that women tend to share their emotional experiences with a wider range of people than do men.¹⁶

¹⁶ Pennebaker, J. W., et al. (2001). Disclosing and sharing emotion: Psychological, social, and health consequences. *Handbook of bereavement research: Consequences, coping, and care*. M. S. Stroebe, R. O. Hansson, W. Stroebe and H. Schut. Washington, DC, American Psychological Association: 517-543.

Sharing through email, sending text messages of pictures of events shortly after they happen, and expressing oneself through the small snippets of activity allowed by Twitter, may provide women with a low-demand and easily accessible coping mechanism that is not experienced or taken advantage of by men. It is also possible that the use of these media replaces activities or allows women to reorganize activities that would otherwise be more stressful. Previous Pew Research reports have also documented that social media users also tend to report higher levels of perceived social support. It could be that technology use leads to higher levels of perceived social support, which in turn moderates, or reduces stress, and subsequently reduces people's risk for the physical diseases and psychological problems that often accompany stress.¹⁷

Awareness of Other People's Stressful Life Events and Social Media Use

This report pays particular attention to **social stress**. This kind of stress comes from exposure to stressful life events. It is not directly a measure of whether someone feels that their own life is overloaded. Rather, it assesses people's stress by understanding their social environment.¹⁸ Those who experience stressful life events often suffer a range of negative physical outcomes, including physical illness and lower mental health.¹⁹

It is possible that technology users — especially those who use social media — are more aware of stressful events in the lives of their friends and family. This increased awareness of stressful events in other people's lives may contribute to the stress people have in their own lives.

Previous Pew Research reports have documented that social media users tend to perceive [higher levels of social support in their networks](#). They also have a greater awareness of the resources within their network of relationships — on and offline. This awareness has generally been perceived as a social benefit. Individuals who are aware of the things that are happening with their friends and the informal resources available to them through their social ties have more social capital. The extra flows of personal information in social media, what we have termed “pervasive awareness,” are one of the potential benefits of digital technologies.²⁰ However, it is also possible that this heightened awareness comes with a cost.

We wanted to know if the awareness afforded by the use of digital technologies was limited to an awareness of what others could provide (social capital), or if it also included an awareness of the problems and stressful events that take place in the lives of friends, family, and acquaintances. Such awareness is not inherently negative. In fact, an awareness of the problems and hurdles faced

¹⁷ Cobb, S. (1976). "Social Support as a Mediator of Life Stress." *Psychosomatic medicine* **38**: 300-314.

¹⁸ Turner, R. J., et al. (1995). "The Epidemiology of Social Stress." *American Sociological Review* **60**(1): 104-125.

¹⁹ Holmes, T. H. and R. H. Rahe (1967). "The social readjustment rating scale." *Journal of Psychosomatic Research* **11**(2): 213-218.

²⁰ Hampton, K. N., et al. (2011). "Core Networks, Social Isolation, and New Media: Internet and Mobile Phone Use, Network Size, and Diversity." *Information, Communication & Society* **14**(1): 130-155.

by others is a precondition of empathy,²¹ a dimension of social intelligence (social interest),²² and facilitates the provision of social support. However, awareness can also have an emotional impact – a “cost of caring.”²³

To measure awareness of other people’s stress we asked participants if they knew someone – other than themselves – who experienced any of a dozen major life events in the past 12 months. We additionally asked if the person(s) the event happened to was someone close to them (a strong tie), or an acquaintance whom they were not very close with (a weak tie), or both. Our list was composed of major life events that are known sources of stress in people’s lives.²⁴ The battery of questions covered events that were likely to be relatively common and those that are rare.

The survey findings were that in the previous 12 months:

- 57% of adults said they know someone who had started a new job
- 56% know someone who had moved or changed homes
- 54% know someone who had become pregnant, given birth, or adopted a child
- 50% knew someone who had been hospitalized or experienced a serious accident or injury
- 50% knew someone who had become engaged or married
- 42% knew someone who had been fired or laid off
- 36% knew someone who had experienced the death of a child, partner, or spouse
- 36% knew someone who had a child move out of the house or move back into the house
- 31% knew someone who had gone through a marital separation or divorce
- 26% knew someone who had experienced a demotion or pay cut at work
- 22% knew someone who had been accused of or arrested for a crime
- 22% knew someone who had been the victim of a robbery or physical assault

Unsurprisingly, given that most people have few close social ties compared with the number of acquaintances they have, for all of the events we queried, people were more likely to know a weak tie (an acquaintance) than a strong tie who had experienced one of these stressful events.

The average adult in our sample knew people who had experienced 5 of the 12 events that we asked about.

²¹ Davis, M. H. (1983). "Measuring individual differences in empathy: Evidence for a multidimensional approach." *Journal of Personality and Social Psychology* **44**(1): 113.

²² Adler, A., et al. (1964). *Social interest: A challenge to mankind*, Capricorn Books New York.

²³ Kessler, R. C. and J. D. McLeod (1984). "Sex Difference in Vulnerability to Undesirable Life Events." *American Sociological Review* **49**: 620-631.

²⁴ Turner, R. J., et al. (1995). "The epidemiology of social stress." *American Sociological Review* **60**: 104-125.

How we studied awareness of stressful events in other people's lives

As with our analysis of psychological stress, regression analysis was used to test if the use of different digital technologies was related to higher or lower levels of awareness of stressful events in other people's lives. This allows us to determine the role of different technologies in helping different users be aware of stressful events in others' lives, controlling for likely differences in awareness that are related to demographic factors such as age, education, race, marital and employment status.

Knowing that the sexes tend to be very different in their awareness of stressful event in the lives of those around them, we further divided our analysis into a comparison of women and men. We also anticipated that some technologies might be more commonly used for communication with close social ties, and primarily provide for an awareness of major events in the lives of close friends and family, while others may be more suited for awareness of events in the lives of looser acquaintances (Appendix A: Table 2).

Women are more aware than men of major events in the lives of people who are close to them.

Previous research has found that women tend to be more aware of the life events of people in their social network than are men.²⁵ When we compared men and women based on the average number of life events that someone in their social network had experienced in the past year, women were consistently more aware than men, although the average was only statistically significant for close relationships.

More educated and younger people are more aware of events in other people's lives.

A number of demographic factors were consistently related to a higher level of awareness of major events within people's social networks. For both men and women, those who were younger and those with more years of education tended to know of more major events in the lives of people around them.

In addition, we found that women who were married or living with a partner, and women employed in paid work outside the home, were more aware of events in the lives of their acquaintances (weak ties), but that this was not related to awareness of events in the lives of close friends and family.

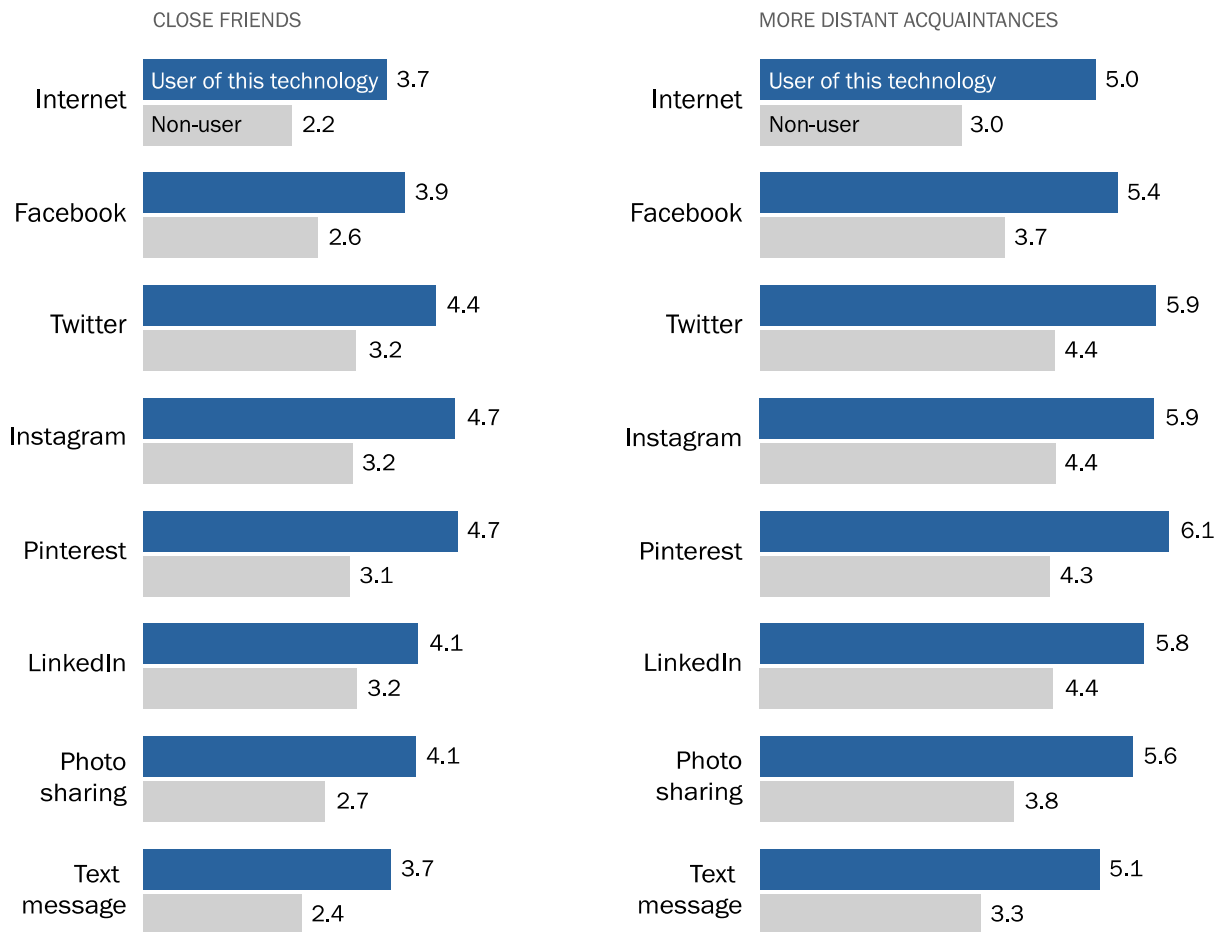
²⁵ Kessler, R. C. and J. D. McLeod (1984). "Sex Difference in Vulnerability to Undesirable Life Events." *American Sociological Review* 49: 620-631.

Social Media Users Are More Aware of Major Events in the Lives of People Close to Them

Social media use is clearly linked to awareness of major events in other people's lives. However, the specific technologies that are associated with awareness vary for men and women.

Technology users are aware of more stressful events in the lives of their close friends and more distant acquaintances

*The average number of **stressful events** (out of a total of 12 possible) that people knew occurred in the lives of their close friends and more distant acquaintances in the past 12 months*



Note: Based on responses to Q4: "... Please tell me if you know someone—other than yourself—who has experienced any of the following in the past 12 months. Do you know someone who has ..." followed by a list of 12 different stressful events.
Source: August 2013 survey. N=1,801 adults.

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Among both men and women, Pinterest users have a higher level of awareness of events in the lives of close friends and family. The more frequently someone used Pinterest, the more events they were aware of:

- Compared with a woman who does not use Pinterest, a woman who visits Pinterest 18 days per month (average for a female Pinterest user) is typically aware of 8% more major life events from the 12 events we studied amongst her closest social ties.
- Compared with a man who does not use Pinterest, a man who used Pinterest at a similar rate (18 days per month) would tend to be aware of 29% more major life events amongst their closest ties.

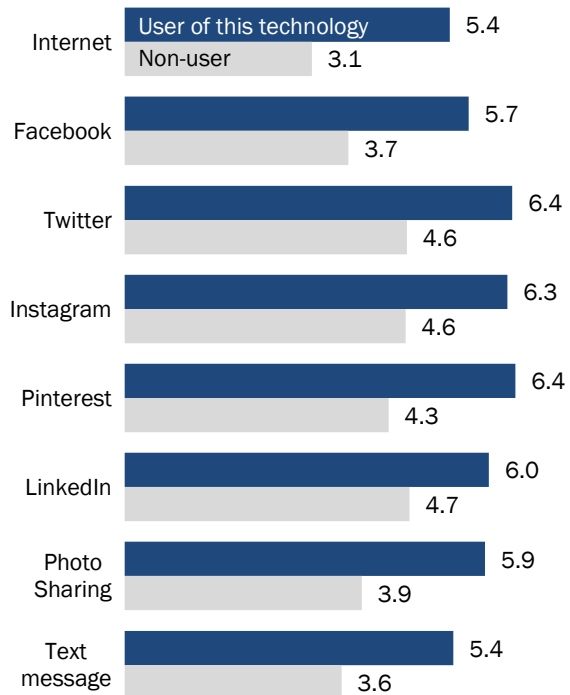
Men who used LinkedIn, men who send text messages to a larger number of people, and men who comment on other people's posts more frequently on Facebook also tend to be more aware of major events in the lives of people close to them. These same technologies had no impact on woman's awareness of events in the lives of people close to them.

Compared with a man with similar demographic characteristics that does not use the following technologies:

- Those who send text messages to four different people through their mobile phones on an average day (the average for a male cellphone user) tend to be aware of 16% more events amongst those who are close to them.
- A male user of LinkedIn visits the site fifteen times per month and is typically aware of 14% more events in the lives of their closest social ties.

Women who use technology are aware of more stressful events in the lives of their close friends and acquaintances

The average number of stressful events (out of a total of 12 possible) that women knew occurred in the lives of their close friends and acquaintances in the past 12 months



Note: Based on responses to Q4: "... Please tell me if you know someone—other than yourself—who has experienced any of the following in the past 12 months. Do you know someone who has ..." followed by a list of 12 different stressful events.
Source: August 2013 survey. N=1,801 adults.

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- A male Facebook user, who comments on other Facebook users content 19 times per month, is, on average, aware of 8% more events in the lives of their closest friends and family.

For women, the more friends on their Facebook network and the more pictures they shared online per week, the more aware of major life events in the lives of close friends and family. Compared with demographically similar women who do not use these technologies:

- A woman who shares 4 photos online per week tends to be aware of 7% additional major events in the lives of those who are close to her.
- A female Facebook user with 320 Facebook friends (the average for women in our sample) is, on average, aware of 13% more events in the lives of her closest social ties.

Similarly, men experienced higher levels of awareness as a result of a larger number of different technologies.

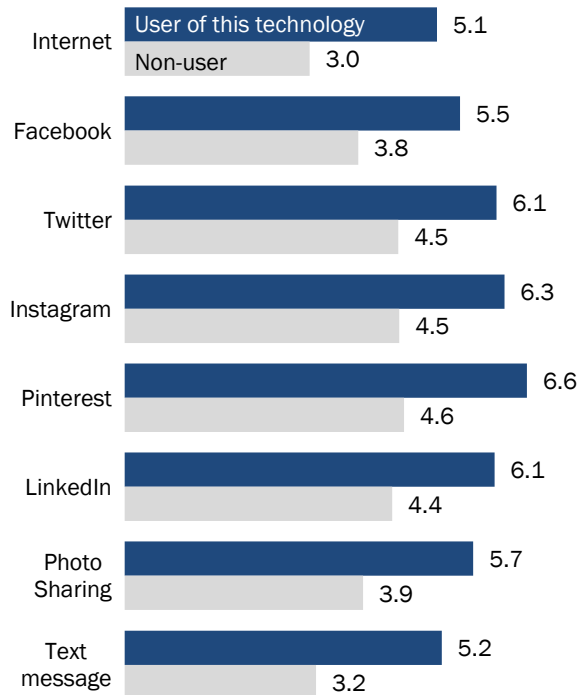
Facebook use is associated with more awareness of major events in the lives of acquaintances.

Looking beyond people's close relationships to include a looser set of their acquaintances, we find that Facebook use is a consistent predictor of awareness of stressful events in others' lives for both men and women. Specifically, the more Facebook friends people have, and the more frequently they "Like" other people's content, the more major events they are aware of within their network of contacts.

- Compared with a non-Facebook user, a male Facebook user with 320 Facebook friends is, on average, aware of 6% more major events in the lives of their extended acquaintances. A female Facebook user with the same number of friends is aware of 14% more events in the lives of their weak ties.

Men who use technology are aware of more stressful events in the lives of their close friends and acquaintances

The average number of stressful events (out of a total of 12 possible) that men knew occurred in the lives of their friends and acquaintances in the past 12 months



Note: Based on responses to Q4: "... Please tell me if you know someone—other than yourself—who has experienced any of the following in the past 12 months. Do you know someone who has ..." followed by a list of 12 different stressful events.

Source: August 2013 survey. N=1,801 adults.

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- A male or female Facebook user who “Likes” other people’s content about once per day, is typically aware of 10% more major events in the lives of their extended acquaintances.

For women, Instagram is related to lower awareness of major events in the lives of acquaintances, while Twitter and photo sharing are related to higher awareness.

Women are also likely to have higher awareness of their extended network as a result of the number of pictures they share online and through frequent use of Twitter. Compared with a demographically similar woman who does not use these technologies:

- A female Twitter user, who uses the site once per day, tends to be aware of 19% more events in the lives of their extended network.
- A woman who shares 4 digital pictures per week is typically aware of 6% more events in their network of loose social ties.

Use of Instagram was the only technology use that we found to predict lower levels of awareness, and only for women. This might be the case because Instagram is used differently than some other kinds of social media. Scholars have found that many people make cellphone calls and exchange text messages predominantly with their closest ties. They have argued that this is “tele-cocooning,”²⁶ and they believe that people’s use of mobile phones leads to contact with more intimate relations at the expense of weaker and more diverse social ties. Instagram use may be tied to a similar pattern. Those who use Instagram might reduce their focus on the lives of their social ties that are not considered especially close. Controlling for other factors, a female user of Instagram who uses the platform a few times per day is, on average, aware of 62% fewer major events in the lives of their extended network than someone who does not use Instagram at all.

For men, text messaging, email, and Pinterest are related to higher awareness of major events in the lives of acquaintances.

In addition to use of Facebook, men’s awareness of stressful events in their friends’ lives tends to be higher for those who email and send text messages to a larger number of people. Compared with someone who does not use these technologies:

- A male email user who is in contact with 9 different people by email per day is generally aware of 13% more events in the lives of their distant social circle.
- A male who sends text messages to four people per day is, on average, aware of 11% more major events in the lives of their weaker social ties.

²⁶ Habuchi, I. (2005). Accelerating Reflexivity. *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*. M. Ito, D. Okabe and M. Matsuda. Cambridge, MA, MIT press: 165-182.

The Cost of Caring

People undergoing major life events can be at higher risk of physical and psychological distress, including depressive symptoms.²⁷ Even awareness of others' difficulties might add to stress – while at the same time offering people a chance to give support and comfort to those in the networks.

A number of recent studies have pointed out that emotions may be contagious through social networks.²⁸⁻²⁹ Stress may be one such contagion. Indeed, awareness of other people's problems is associated with a range of negative outcomes, such as depression.³⁰ The “cost of caring” associated with awareness of other people's stressful events may be a negative consequence of social media use because social media may make users more aware of the struggles of those in their network.

To test whether social stress is contagious — that the heightened awareness of stressful events in other people's lives is related to higher psychological stress in people's own lives — we use regression analysis to explore the relationship between the use of digital technologies, awareness of major events in other people's life, and psychological stress. By doing this, we are able to determine if awareness of any specific type of life events is associated with higher or lower levels of psychological stress (Appendix A: Table 1).

Stress is contagious

Awareness of some of the major events happening to their friends was related to stress in people's own lives. But not all the events were tied to stress. Of course, because our list of twelve events is a sample from a lengthy potential list of stressful major life events, the true effect of the “cost of caring” is possibly much larger than we document here.³¹

The number of events related to higher stress was greater for women than it was for men. Unsurprisingly, all the events associated with higher levels of stress were events that were likely to negatively impact the lives of friends and family. On average, a woman who is aware that:

- Someone close to them experienced the death of a child, partner, or spouse scored 14% higher on their own measure of stress, holding other things constant.

²⁷ Turner, R. J., et al. (1995). "The Epidemiology of Social Stress." *American Sociological Review* 60(1): 104-125.

²⁸ Kramer, A. D. I., et al. (2014). "Experimental evidence of massive-scale emotional contagion through social networks." *Proceedings of the National Academy of Sciences* 111(24): 8788-8790.

²⁹ Coviello, L., et al. (2014). "Detecting Emotional Contagion in Massive Social Networks." *PloS one* 9(3): e90315.

³⁰ Schieman, S. and H. A. Turner (2001). "When Feeling Other People's Pain Hurts: The Influence of Psychosocial Resources on the Association between Self-Reported Empathy and Depressive Symptoms." *Social Psychology Quarterly*: 376-389.

³¹ Aneshensel, C. (1992). Social Stress. *Annual Review of Sociology*. 18: 15-38.

- Someone close has been hospitalized or experienced a serious accident or injury reported 5% higher psychological stress.
- An acquaintance had been accused of or arrested for a crime scored 11% higher on the stress measure.
- An acquaintance experienced a demotion or cut in pay reported 9% higher levels of psychological stress.

For men, of the events we explored, only two predicted stress. On average, men who were aware that:

- Someone close to them had been accused of or arrested or a crime reported 15% higher on our measure of psychological stress.
- An acquaintance had experienced a demotion or pay cut at work report 12% higher stress.

For both men and women, we found no relationship between their own stress (higher or lower levels) and awareness of more positive (but generally still stressful) events in their friends' lives, such as an engagement or marriage.

People can become aware of undesirable events in the lives of friends and family through a variety of means. Digital technologies are only one new way that people become aware of these events.

It is clear from this analysis that the cost of caring is particularly felt by women. This is a result of both the larger number of events related to women's stress, and the higher level of awareness that women tend to have of major events in the lives of people around them. Controlling for other factors, in the unlikely example that a woman is aware of all of the events we covered in the survey, she would typically score 32% higher than the average woman on our measure of perceived stress. A man would score 27% higher than the average man.

The joy of missing out

There is one other factor to note in our findings. We found that women who were aware that an acquaintance — someone not very close to them — had experienced the death of a child, partner or spouse, reported *lower levels* of psychological stress. This is the opposite of how women feel when aware that someone close to them suffered the same experience. At first glance, this finding might be interpreted as somewhat uncaring — perhaps a sign of “*schadenfreude*,” or the pleasure derived from the misfortune of others. In fact, this finding is more likely to be an extension of the cost of caring. It could be seen as “the joy of missing out.” When women see more-distant acquaintances struggling with stressful events, it might have the effect of inducing relief that this particular event has not happened to someone closer to them. It is a reminder that the lives of close friends/family could, after all, be much worse. Controlling for other factors, the joy of missing out was typically associated with a score that was about 6% lower on our scale of perceived stress.

Appendix A: Regressions

Table 1. OLS regression on Perceived Stress Scale (PSS).

Independent Variables	Women (N=889)	Men (N=882)
Constant	17.242***	15.056***
Demographics		
Age	-0.034**	0.000
Years of education (7-18)	-0.344***	-0.372***
Black/African-American	0.452	0.705
Living with spouse or partner	-0.914**	-0.858*
Employed	-1.750***	-0.763
Mobile Phone Use		
Number of text messages sent per day	-	-
Number of pictures texted per day	-0.041**	-
Number of people text der day	-	-
Internet Use		
Internet user	-	-
Number of pictures shared online per week	-	-
Number of emails sent/received per day	-0.010**	-
Number of people email per day	-	-
Social Media Use		
Twitter visits per month (0-90)	-0.036***	-
Instagram visits per month (0-90)	-	-
Pinterest visits per month (0-90)	-	-
LinkedIn visits per month (0-90)	-	-
Facebook Use		
Facebook visits per month (0-90)	-	-
Number of Facebook friends	-	-
Status update per month (0-90)	-	-
'Like' per month (0-90)	-	-
Comment per month (0-90)	-	-
Sending private message per month (0-90)	-	-
Awareness of major life events among close ties		
Started a new job	-	-
Moved or changed homes	-	-
Pregnant, given birth, or adopted a child	-	-
Hospitalized or a serious accident or injury	0.794*	-
Engaged or married	-	-
Fired or laid off	-	-
Death of a child, partner, or spouse	2.477***	-

Continues on next page

Continued from prior page

Child move out of the house or move back into the	-	-
Gone through separation or divorce	-	-
Demotion or pay cut at work	-	-
Accused of or arrested for a crime	-	2.296***
Victim of a robbery or physical assault	-	-
Awareness of major life events among weak ties		
Started a new job	-	-
Moved or changed homes	-	-
Pregnant, given birth, or adopted a child	-	-
Hospitalized or a serious accident or injury	-	-
Engaged or married	-	-
Fired or laid off	-	-
Death of a child, partner, or spouse	-1.055*	-
Child move out of the house or move back into the	-	-
Gone through separation or divorce	-	-
Demotion or pay cut at work	1.515***	1.747***
Accused of or arrested for a crime	1.842***	-
Victim of a robbery or physical assault	-	-
Adjusted R square	0.163***	0.081***

Table 2. OLS regression on awareness of total number of major life events.

Independent Variables	Close Relationships		Weak Relationships	
	Female N=889	Male N=872	Female N=889	Male N=872
Constant	2.385***	1.888***	2.315***	2.158***
Demographics				
Age	-0.025***	-0.024***	-0.030***	-0.022***
Years of education (7-18)	0.132***	0.136***	0.210***	0.188***
Black/African-American	-0.149	-0.041	-0.400	-0.182
Living with spouse or partner	0.302	0.053	0.493*	0.105
Employed	0.186	0.210	0.716***	0.359
Mobile Phone Use				
Number of text messages sent per day	-	-	-	-
Number of pictures texted per day	-	-	-	-
Number of people text per day	-	0.076***	-	0.057**
Internet Use				
Internet user	-	-	-	-
Number of pictures shared online per week	0.041***	-	0.034*	-
Number of emails sent/received per day	-	-	-	-
Number of people email per day	-	-	-	0.032***
Social Media Use				
Twitter visits per month (0-90)	-	-	0.015*	-
Instagram visits per month (0-90)	-	-	-0.016*	-
Pinterest visits per month (0-90)	0.011*	0.030*	-	0.032*
LinkedIn visits per month (0-90)	-	0.018*	-	-
Facebook Use				
Facebook visits per month (0-90)	-	-	-	-
Number of Facebook friends	0.001**	-	0.001*	0.0004*
Status update per month (0-90)	-	-	-	-
'Like' per month (0-90)	-	-	0.008*	0.007*
Comment per month (0-90)	-	0.008*	-	-
Sending private message per month (0-90)	-	-	-	-
Adjusted R square	0.131***	0.136***	0.194***	0.170***

Note: Unstandardized coefficients. For each analysis we entered all demographic variables and then used a stepwise forward selection procedure to enter into the model one at a time each variable measuring digital technology use. Those variables that did not significantly add to the model were excluded.

*p<.05 **p<.01 ***p<.001

Appendix B: Method

This report is based on the findings of a 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 from August 7 to September 16, 2013, among a sample of 1,801 adults, age 18 and older. Telephone interviews were conducted in English and Spanish by landline (901) and cellphone (900, including 482 without a landline phone). For results based on the total sample, one can say with 95% confidence that the error attributable to sampling is plus or minus 2.6 percentage points. For results based on Internet users³² (n=1,445), 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.

A combination of landline and cellular random digit dial (RDD) samples was used to represent all adults in the 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. Numbers for the landline sample were drawn with equal probabilities from active blocks (area code + exchange + two-digit block number) that contained three or more residential directory listings. 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 seven 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, interviewers asked to speak with the youngest adult male or female currently at home based on a random rotation. If no male/female was available, interviewers asked to speak with the youngest adult of the other gender. 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.

Weighting is generally used in survey analysis to compensate for sample designs and patterns of non-response that might bias results. A two-stage weighting procedure was used to weight this

³² Internet user definition includes those who use the internet or email at least occasionally or access the internet on a mobile handheld device at least occasionally.

dual-frame sample. The first-stage corrected for different probabilities of selection associated with the number of adults in each household and each respondent's telephone usage patterns.³³ This weighting also adjusts for the overlapping landline and cell sample frames and the relative sizes of each frame and each sample.

The second stage of weighting balances sample demographics to population parameters. The sample is balanced to match national population parameters for sex, age, education, race, Hispanic origin, region (U.S. Census definitions), population density, and telephone usage. The Hispanic origin was split out based on nativity; U.S. born and non-U.S. born. The White, non-Hispanic subgroup was also balanced on age, education and region. The basic weighting parameters came from the US Census Bureau's 2011 American Community Survey data.³⁴ The population density parameter was derived from Census 2010 data. The telephone usage parameter came from an analysis of the July-December 2012 National Health Interview Survey.³⁵

Following is the full disposition of all sampled telephone numbers:

³³ i.e., whether respondents have only a landline telephone, only a cellphone, or both kinds of telephone.

³⁴ ACS analysis was based on all adults excluding those living in institutional group quarters (GCs).

³⁵Blumberg SJ, Luke JV. Wireless substitution: Early release of estimates from the National Health Interview Survey, July-December, 2012. National Center for Health Statistics. June 2013.

Sample Disposition

Landline	Cell	
40,985	27,000	Total Numbers Dialed
1,669	346	Non-residential
1,458	94	Computer/Fax
15	----	Cellphone
24,589	10,375	Other not working
1,994	427	Additional projected not
11,260	15,758	Working numbers
27.5%	58.4%	Working Rate
665	142	No Answer / Busy
3,332	5,501	Voice Mail
27	16	Other Non-Contact
7,236	10,099	Contacted numbers
64.3%	64.1%	Contact Rate
328	1,793	Callback
5,898	6,776	Refusal
1,010	1,530	Cooperating numbers
14.0%	15.2%	Cooperation Rate
53	67	Language Barrier
----	540	Child's cellphone
957	923	Eligible numbers
94.8%	60.3%	Eligibility Rate
56	22	Break-off
901	901	Completes
94.1%	97.6%	Completion Rate
8.4%	9.5%	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 8 percent. The response rate for the cellular sample was 10 percent.

Survey questions

Pew Research Center August Tracking 2013

Final Topline

9/18/2013

Data for August 7-September 16, 2013

Survey by the Pew Research Center's Internet & American Life Project
Fieldwork conducted by Princeton Survey Research Associates International

Sample: n=1,801 national adults, age 18 and older, including 900 cellphone interviews
Interviewing dates: 08.07.2013 – 09.16.2013

Margin of error is plus or minus 2.6 percentage points for results based on Total [n=1,801]

Margin of error is plus or minus 2.9 percentage points for results based on all internet users [n=1,445]

Margin of error is plus or minus 2.7 percentage points for results based on all cellphone owners [n=1,636]

Margin of error is plus or minus 3.3 percentage points for results based on all SNS or Twitter users [n=1,076]

Margin of error is plus or minus 3.5 percentage points for results based on Facebook users [n=960]

Margin of error is plus or minus 7.2 percentage points for results based on Twitter users [n=223]

Q2 Now thinking only about the last 30 days... In the last 30 days, how often have you
[INSERT ITEMS; RANDOMIZE] – frequently, sometimes, hardly ever, or never?

	FRE- QUENTLY	SOME- TIMES	HARDLY EVER	NEVER	DON'T KNOW	REFUSED
a. Been upset because of something that happened unexpectedly	12	33	37	17	*	*
b. Felt that you were unable to control the important things in your life	15	25	31	28	1	1
c. Felt nervous and “stressed”	23	36	26	14	*	*
d. Felt confident about your ability to handle any personal problems	68	20	6	4	1	1
e. Felt that things were going your way	47	37	11	5	1	*
f. Found that you could not cope with all the things that you had to do	10	23	33	33	1	1
g. Been able to control irritations in your life	57	27	9	6	1	1
h. Felt that you were on top of things	56	30	8	5	1	*
i. Been angered because of things that were outside of your control	14	33	31	22	0	*
j. Felt difficulties were piling up so high that you could not overcome them	9	21	31	39	*	*

[READ TO ALL:] On a different subject...

EMINUSE Do you use the internet or email, at least occasionally?

INTMOB Do you access the internet on a cellphone, tablet or other mobile handheld device, at least occasionally?³⁶

	Use internet	Do not use internet
Current	80	20
May 2013	85	15
December 2012 ⁱ	81	19
November 2012 ⁱⁱ	85	15
September 2012	81	19
August 2012 ⁱⁱⁱ	85	15
April 2012	82	18
February 2012	80	20
December 2011	82	18
August 2011	78	22
May 2011	78	22
January 2011 ^{iv}	79	21
December 2010 ^v	77	23
November 2010 ^{vi}	74	26
September 2010	74	26
May 2010	79	21
January 2010 ^{vii}	75	25
December 2009 ^{viii}	74	26
September 2009	77	23
April 2009	79	21
December 2008	74	26
November 2008 ^{ix}	74	26
August 2008 ^x	75	25
July 2008 ^{xi}	77	23
May 2008 ^{xii}	73	27
April 2008 ^{xiii}	73	27
January 2008 ^{xiv}	70	30
December 2007 ^{xv}	75	25
September 2007 ^{xvi}	73	27
February 2007 ^{xvii}	71	29
December 2006 ^{xviii}	70	30
November 2006 ^{xix}	68	32

³⁶ The definition of an internet user varies from survey to survey. Prior to January 2005, internet users were defined as those who said yes to “Do you ever go online to access the Internet or World Wide Web or to send and receive email?” From January 2005 thru February 2012, an internet user is someone said yes to either “Do you use the internet, at least occasionally?” (INTUSE) OR “Do you send or receive email, at least occasionally?” (EMLOCC). From April 2012 thru December 2012, an internet user is someone said yes to any of three questions: INTUSE, EMLOCC or “Do you access the internet on a cellphone, tablet or other mobile handheld device, at least occasionally?” (INTMOB). In May 2013, half the sample was asked INTUSE/EMLOCC/INTMOB and half was asked EMINUSE/INTMOB. Those May 2013 trend results are for both forms combined.

August 2006 ^{xx}	70	30
April 2006 ^{xxi}	73	27
February 2006 ^{xxii}	73	27
December 2005 ^{xxiii}	66	34
September 2005 ^{xxiv}	72	28
June 2005 ^{xxv}	68	32
February 2005 ^{xxvi}	67	33
January 2005 ^{xxvii}	66	34
Nov 23-30, 2004 ^{xxviii}	59	41
November 2004 ^{xxix}	61	39
July 2004 ^{xxx}	67	33
June 2004 ^{xxxi}	63	37
March 2004 ^{xxxii}	69	31
February 2004 ^{xxxiii}	63	37
November 2003 ^{xxxiv}	64	36
August 2003 ^{xxxv}	63	37
June 2003 ^{xxxvi}	62	38
May 2003 ^{xxxvii}	63	37
March 3-11, 2003 ^{xxxviii}	62	38
February 2003 ^{xxxix}	64	36
December 2002 ^{xl}	57	43
November 2002 ^{xli}	61	39
October 2002 ^{xlii}	59	41
September 2002 ^{xliii}	61	39
July 2002 ^{xliv}	59	41
March/May 2002 ^{xlv}	58	42
January 2002 ^{xlvi}	61	39
December 2001 ^{xlvii}	58	42
November 2001 ^{xlviii}	58	42
October 2001 ^{xl ix}	56	44
September 2001 ⁱ	55	45
August 2001 ⁱⁱ	59	41
February 2001 ⁱⁱⁱ	53	47
December 2000 ⁱⁱⁱⁱ	59	41
November 2000 ^{lv}	53	47
October 2000 ^{lv}	52	48
September 2000 ^{lvi}	50	50
August 2000 ^{lvii}	49	51
June 2000 ^{lviii}	47	53
May 2000 ^{lix}	48	52

WEB1-A Next... Please tell me if you ever use the internet to do any of the following things. Do you ever use the internet to...[INSERT ITEM; RANDOMIZE; ALWAYS ASK ABOUT FACEBOOK LAST]?³⁷

Based on all internet users [N=1,445]

	TOTAL HAVE EVER DONE THIS	----- DID YESTERDAY	HAVE NOT DONE THIS	DON'T KNOW	REFUSED
Use Twitter					
Current	18	n/a	82	*	0
May 2013	18	n/a	82	*	*
December 2012	16	n/a	84	*	*
August 2012	16	n/a	84	*	0
February 2012	15	8	85	*	0
August 2011	12	5	88	*	0
May 2011	13	4	87	*	0
January 2011	10	n/a	90	*	*
December 2010	12	n/a	88	*	0
November 2010	8	2	92	0	*
Upload photos to a website so you can share them with others online					
Current	58	n/a	42	*	*
July 2008	46	n/a	54	*	--
August 2006	37	5	63	*	--
Use Instagram					
Current	17	n/a	82	*	0
December 2012	13	n/a	87	*	0
August 2-5, 2012 ^x	12	n/a	88	1	0
Use Pinterest					
Current	21	n/a	77	2	*
December 2012	15	n/a	83	2	0
August 2-5, 2012	12	n/a	87	1	*
	TOTAL HAVE EVER DONE THIS	----- DID YESTERDAY	HAVE NOT DONE THIS	DON'T KNOW	REFUSED
Use LinkedIn					
Current	22	n/a	77	1	*
Use Facebook³⁸					

³⁷ Prior to January 2005, question wording was "Please tell me if you ever do any of the following when you go online. Do you ever...[ITEM]?" Unless otherwise noted, trends are based on all internet users for that survey.

³⁸ December 13-16, 2012 trend was asked of all internet users as a standalone question: "Do you ever use Facebook?"

Current	71	n/a	29	0	0
December 13-16, 2012 ^{bx}	67	n/a	33	0	*

QL1 Next... Do you have a cellphone, or not?³⁹

	yes	no	Don't know	Refused
Current	89	11	0	0
May 2013	91	9	0	*
December 2012	87	13	*	0
November 2012	85	15	0	*
Sept 2012	85	15	*	0
August 2012	89	10	0	*
April 2012	88	12	*	*
February 2012	88	12	0	*
December 2011	87	13	0	*
August 2011	84	15	*	*
May 2011	83	17	*	0
January 2011	84	16	*	*
December 2010	81	19	*	*
November 2010	82	18	0	*
September 2010	85	15	*	*
May 2010	82	18	*	0
January 2010	80	20	0	*
December 2009	83	17	0	*
September 2009	84	15	*	*
April 2009	85	15	*	*
Dec 2008	84	16	*	*
July 2008	82	18	*	--
May 2008	78	22	*	0
April 2008	78	22	*	--
January 2008	77	22	*	--
Dec 2007	75	25	*	--
Sept 2007	78	22	*	--
April 2006	73	27	*	--
January 2005	66	34	*	--
Nov. 23-30, 2004	65	35	*	--

³⁹ Question was asked of landline sample only. Results shown here have been recalculated to include cellphone sample in the "Yes" percentage. Beginning September 2007, question/item was not asked of the cellphone sample, but trend results shown here reflect Total combined Landline and cellphone sample. In past polls, question was sometimes asked as an independent question and sometimes as an item in a series. Wording may vary from survey to survey. Wording variations include: "Do you have a cellphone or a Blackberry or iPhone or other device that is also a cellphone?"; "Do you have...a cellphone or a Blackberry or iPhone or other handheld device that is also a cellphone?"; "Do you have a cellphone, or a Blackberry or other device that is also a cellphone?"; "Do you happen to have a cellphone?"; "Do you have a cellphone?"

SMART1 Some cellphones are called “smartphones” because of certain features they have. Is your cellphone a smartphone such as an iPhone, Android, Blackberry or Windows phone, or are you not sure?⁴⁰

Based on cellphone owners

	YES, SMARTPHONE	NO, NOT A SMARTPHONE	NOT SURE/ DON'T KNOW	REFUSED
Current [N=1,636]	60	33	6	*
May 2013 [N=2,076]	55	39	5	*
December 2012 [N=1,954]	52	41	6	*
November 2012 [N=1,992]	55	38	6	*
September 2012 [N=2,581]	53	40	6	*
April 2012 [N=1,954]	46	44	10	*
February 2012 [N=1,961]	45	46	8	*
May 2011 [N=1,914]	33	53	14	*

[READ TO ALL INTERNET USERS OR THOSE WHO EMAIL OR TEXT BY CELLPHONE:] Thinking about the different ways you communicate with others...

TXTAVG1 On an average day, about how many text messages do you send and receive on your cellphone? [IF NECESSARY: Just your best guess is fine.] [OPEN-END]

TXTAVG2 [IF DK or REF IN PREVIOUS QUESTION, ASK:] Well, on an average day, would you say you send or receive... [READ]⁴¹

Based on cellphone owners who text message

	Current		MAY 2011	May 2010	Sept 2009
%	5	No text messages on your cellphone	7	9	8
	50	1 to 10 text messages	43	51	56
	15	11 to 20	15	13	11
	16	21 to 50	19	13	13
	8	51 to 100	9	7	6
	2	101 to 200	3	3	3
	4	More than 200 text messages a day	4	5	3
	0	(VOL.) Don't know/Can't say/Could not guess	*	*	*
	0	(VOL.) Refused	*	*	*
	[n=1,261]		[n=1,212]	[n=1,189]	[n=1,075]

TXTAVG3 On an average day, about how many different people do you text with? [IF NECESSARY: Just your best guess is fine.] [OPEN-END]⁴²

⁴⁰ Wording may vary from survey to survey. Wording variations include: “Some cellphones are called “smartphones” because of certain features they have. Is your cellphone a smartphone, such as an iPhone, Android, Blackberry or Windows phone, or are you not sure?”; “Some cellphones are called “smartphones” because of certain features they have. Is your cellphone a smartphone or not, or are you not sure?”

⁴¹ Respondents who asked how to count texts sent to a group of people were instructed to count that group text as sending one text.

Based on cellphone owners who text message [N=1,261]

Current	
%	5
	Don't text anyone on an average day
	32
	1-2 people
	30
	3-4 people
	33
	5 or more people
	1
	Don't know/Can't say/Could not guess
	0
	Refused

TXTAGV4 Some people attach photos to text messages. On an average day, about how many PHOTOS do you send and receive by TEXT with other people using your cellphone? [IF NECESSARY: Just your best guess is fine.] [OPEN-END]

TXTAGV5 [IF DK or REF IN PREVIOUS QUESTION, ASK:] Well, on an average day, would you say you send and receive by text... [READ]⁴³

Based on cellphone owners who text message [N=1,261]

Current	
%	43
	No photos using your cellphone
	55
	1 to 10 photos
	1
	11 to 20
	1
	21 to 50
	*
	51 to 100
	*
	101 to 200
	*
	More than 200 photos a day
	0
	(VOL.) Don't know/Can't say/Could not guess
	*
	(VOL.) Refused

EMLAVG1 On an average day, about how many EMAILS do you send and receive, including personal and work emails, and emails you send and receive for any other reason? [IF NECESSARY: Just your best guess is fine.] [OPEN-END]

EMLAVG2 [IF DK or REF IN PREVIOUS QUESTION, ASK:] Well, on an average day, would you say you send or receive... [READ]⁴⁴

Based on all internet users or those who use their cellphone to email [N=1,455]

Current	
%	19
	No emails/Do not use email
	43
	1 to 10 emails
	12
	11 to 20
	14
	21 to 50
	7
	51 to 100
	3
	101 to 200
	1
	More than 200 emails a day
	*
	(VOL.) Don't know/Can't say/Could not guess
	*
	(VOL.) Refused

⁴² Respondents who asked how to count texts sent to a group of people were instructed to count each separate person in the group as someone they text with.

⁴³ Respondents who asked how to count photos texted to a group of people were instructed to count that group text as texting one photo.

⁴⁴ Respondents who asked how to count emails sent to a group of people were instructed to count this as sending one email.

EMLAVG3 On an average day, about how many different people do you send and receive email with? [IF NECESSARY: Just your best guess is fine.] [OPEN-END]⁴⁵

Based on those who send or receive email on an average day [N=1,177]

Current		
%	3	Don't email anyone on an average day
	25	1-2 people
	14	3-4 people
	58	5 or more people
	1	Don't know/Can't say/Could not guess
	*	Refused

PICAVG1 Thinking about a slightly longer time period... In an average WEEK, about how many PHOTOS do you upload or post online so that you can share them with others? [IF NECESSARY: Just your best guess is fine.] [OPEN-END]

PICAVG2 [IF DK or REF IN PREVIOUS QUESTION, ASK:] Well, in an average week, would you say you upload or post... [READ]

Based on internet users who upload photos [N=810]

Current		
%	16	No photos
	68	1 to 10 photos
	8	11 to 20
	4	21 to 50
	2	51 to 100
	*	101 to 200
	1	More than 200 photos a week
	*	(VOL.) Don't know/Can't say/Could not guess
	*	(VOL.) Refused

Q4 Next I'm going to read you difficulties people sometimes experience. Please tell me if you know someone – OTHER THAN YOURSELF – who has experienced any of the following in past 12 months. Do you know someone who has... [INSERT ITEMS; RANDOMIZE] in the past 12 months? [IF YES, PROBE: Did this happen to someone close to you or to someone you are not very close to?]

YES, CLOSE TO ME	YES, NOT CLOSE TO ME	YES, BOTH CLOSE AND NOT	NO, NOT TO ANYONE I	DON'T KNOW	REFUSED
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⁴⁵ Respondents who asked how to count emails sent to a group of people were instructed to count each separate person in the group as someone they email.

			CLOSE	KNOW		
a. Been hospitalized or experienced a serious accident or injury	36	12	2	50	0	*
b. Experienced the death of a child, partner, or spouse	22	13	1	63	*	*
c. Gone through a marital separation or divorce	18	12	1	69	*	*
d. Been fired or laid off	25	15	2	58	0	*
e. Been accused of or arrested for a crime	10	12	1	78	0	*
f. Started a new job	43	11	2	43	*	*
g. Experienced a demotion or pay cut at work	17	8	1	74	*	*
h. Been the victim of a robbery or physical assault	13	8	1	78	*	0
i. Had a child move out of the house or move back into the house	27	7	1	64	*	*
j. Become engaged or married	31	17	1	50	*	*
k. Become pregnant, given birth, or adopted a child	35	17	2	46	*	*
l. Moved or changed homes	41	13	2	44	*	*

SNS2 Thinking about the social networking sites you use... About how often do you visit or use [INSERT ITEMS; RANDOMIZE]? Several times a day, about once a day, 3-5 days a week, 1-2 days a week, every few weeks, less often, don't know, refused?

	SEVERAL TIMES A DAY	ABOUT ONCE A DAY	3-5 DAYS A WEEK	1-2 DAYS A WEEK	EVERY FEW WEEKS	LESS OFTEN	DON'T KNOW	REFUSED
<i>Item A: Based on Twitter users [N=223]</i>								
a. Twitter	29	17	10	11	12	20	1	0
<i>Item B: Based on Instagram users [N=196]</i>								
b. Instagram	35	22	11	10	6	15	1	0
<i>Item C: Based on Pinterest users [N=272]</i>								
c. Pinterest	11	13	10	20	21	24	1	1
<i>Item D: Based on LinkedIn users [N=341]</i>								
d. LinkedIn	5	8	15	19	27	25	*	*
<i>Item E: Based on Facebook users [N=960]</i>								

e. Facebook 40 24 10 13 6 8 * 0

FB4 Thinking just about your Facebook profile... How many friends do you currently have in your network? [IF NECESSARY: Just your best guess is fine.]

Based on Facebook users [N=960]

	Current
%	1 No friends
	39 1-100 friends
	23 101-250 friends
	20 251-500 friends
	15 More than 500 friends
	2 Don't know
	1 Refused

FB8 How often, if ever, do you [INSERT ITEMS IN ORDER]? Several times a day, about once a day, 3-5 days a week, 1-2 days a week, every few weeks, less often, or never?

How often do you [INSERT NEXT ITEM]? [READ AS NECESSARY: Several times a day, about once a day, 3-5 days a week, 1-2 days a week, every few weeks, less often, or never?]

Based on Facebook users [N=960]

	SEVERAL TIMES A DAY	ABOUT ONCE A DAY	3-5 DAYS A WEEK	1-2 DAYS A WEEK	EVERY FEW WEEKS	LESS OFTEN	NEVER	DON'T KNOW	REFUSED
a. Change or update your status on Facebook	4	6	6	15	16	27	25	*	*
b. Click the "like" button next to other people's status, photos, links or other posts on Facebook	29	15	12	13	9	12	10	1	*
c. Comment on other people's photos on Facebook	15	16	10	15	11	17	15	*	*
d. Comment on other people's status, photos, links or other posts on Facebook	16	15	12	15	10	18	15	*	*
e. Send private Facebook messages	10	9	9	14	17	21	20	*	*

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- ⁱ December 2012 trends based on the 2012 Post-Election Tracking Survey, conducted November 14–December 9, 2012 [N=2,261, including 908 cellphone interviews].
- ⁱⁱ November 2012 trends based on the Gates Library Services Survey, conducted October 15 – November 10, 2012 among those age **16 or older** [N=2,252, including 1,125 cellphone interviews].
- ⁱⁱⁱ August 2012 trends based on the “Civic Engagement Tracking Survey” conducted July 16–August 7, 2012 [N=2,253, including 900 cellphone interviews].
- ^{iv} January 2011 trends based on the Pew Internet Project/Project for Excellence in Journalism/Knight Foundation “Local News survey,” conducted January 12-25, 2011 [N=2,251, including 750 cellphone interviews].
- ^v December 2010 trends based on the Social Side of the Internet survey, conducted November 23–December 21, 2010 [N=2,303, including 748 cellphone interviews].
- ^{vi} November 2010 trends based on the Post-Election Tracking Survey 2010, conducted November 3-24, 2010 [N=2,257, including 755 cellphone interviews].
- ^{vii} January 2010 trends based on the Online News survey, conducted December 28, 2009 – January 19, 2010 [N=2,259, including 562 cellphone interviews].
- ^{viii} December 2009 trends based on the Fall Tracking “E-Government” survey, conducted November 30 – December 27, 2009 [N=2,258, including 565 cellphone interviews].
- ^{ix} November 2008 trends based on the Post-Election 2008 Tracking survey, conducted November 20-December 4, 2008 [N=2,254].
- ^x August 2008 trends based on the August Tracking 2008 survey, conducted August 12-31, 2008 [N=2,251].
- ^{xi} July 2008 trends based on the Personal Networks and Community survey, conducted July 9-August 10, 2008 [N=2,512, including 505 cellphone interviews].
- ^{xii} May 2008 trends based on the Spring Tracking 2008 survey, conducted April 8-May 11, 2008 [N=2,251].
- ^{xiii} April 2008 trends based on the Networked Workers survey, conducted March 27-April 14, 2008. Most questions were asked only of full- or part-time workers [N=1,000], but trend results shown here reflect the total sample [N=2,134].
- ^{xiv} January 2008 trends based on the Networked Families survey, conducted December 13, 2007-January 13, 2008 [N=2,252].
- ^{xv} December 2007 trends based on the Annual Gadgets survey, conducted October 24-December 2, 2007 [N=2,054, including 500 cellphone interviews].
- ^{xvi} September 2007 trends based on the Consumer Choice survey, conducted August 3-September 5, 2007 [N=2,400, oversample of 129 cellphone users].
- ^{xvii} February 2007 trends based on daily tracking survey conducted February 15-March 7, 2007 [N=2,200].
- ^{xviii} December 2006 trends based on daily tracking survey, conducted November 30 - December 30, 2006 [N=2,373].
- ^{xix} November 2006 trends based on Post-Election tracking survey, conducted Nov. 8-Dec. 4, 2006 [N=2,562]. This includes an RDD sample [N=2,362] and a cellphone only sample [N=200]. Results reflect combined samples, where applicable.
- ^{xx} August 2006 trends based on daily tracking survey, conducted August 1-31, 2006 [N=2,928].
- ^{xxi} April 2006 trends based on the Annual Gadgets survey, conducted Feb. 15-Apr. 6, 2006 [N=4,001].
- ^{xxii} February 2006 trends based on the Exploratorium Survey, conducted Jan. 9-Feb. 6, 2006 [N=2,000].
- ^{xxiii} December 2005 trends based on daily tracking survey conducted Nov. 29-Dec. 31, 2005 [N=3,011].
- ^{xxiv} September 2005 trends based on daily tracking survey conducted Sept. 14-Oct. 13, 2005 [N=2,251].
- ^{xxv} June 2005 trends based on the Spyware Survey, conducted May 4-June 7, 2005 [N=2,001].
- ^{xxvi} February 2005 trends based on daily tracking survey conducted Feb. 21-March 21, 2005 [N=2,201].
- ^{xxvii} January 2005 trends based on daily tracking survey conducted Jan. 13-Feb. 9, 2005 [N=2,201].
- ^{xxviii} November 23-30, 2004 trends based on the November 2004 Activity Tracking Survey, conducted November 23-30, 2004 [N=914].

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- xxix November 2004 trends based on the November Post-Election Tracking Survey, conducted Nov 4-Nov 22, 2004 [N=2,200].
- xxx July 2004 trends based on the "Selective Exposure" survey, conducted June 14-July 3, 2004 [N=1,510].
- xxxi June 2004 trends based on daily tracking survey conducted May 14-June 17, 2004 [N=2,200].
- xxxii March 2004 trends based on "Weak Ties" survey conducted February 17-March 17, 2004 [N=2,200].
- xxxiii February 2004 trends based on daily tracking survey conducted February 3-March 1, 2004 [N=2,204].
- xxxiv November 2003 trends based on daily tracking survey conducted November 18-December 14, 2003 [N=2,013].
- xxxv August 2003 trends based on 'E-Government' survey conducted June 25-August 3, 2003 [N=2,925].
- xxxi June 2003 trends based on 'Internet Spam' survey conducted June 10-24, 2003 [N=2,200].
- xxxvii May 2003 trends based on daily tracking survey conducted April 29-May 20, 2003 [N=1,632].
- xxxviii March 3-11, 2003 trends based on daily tracking survey conducted March 3-11, 2003 [N=743].
- xxxix February 2003 trends based on daily tracking survey conducted February 12-March 2, 2003 [N=1,611].
- xl December 2002 trends based on daily tracking survey conducted Nov. 25-Dec. 22, 2002 [N=2,038].
- xli November 2002 trends based on daily tracking survey conducted October 28-November 24, 2002 [N=2,745].
- xliv October 2002 trends based on daily tracking survey conducted October 7-27, 2002 [N=1,677].
- xlvi September 2002 trends based on daily tracking survey conducted September 9-October 6, 2002 [N=2,092].
- xlvii July 2002 trends based on 'Sept. 11th-The Impact Online' survey conducted June 26-July 26, 2002 [N=2,501].
- xlviii March/May 2002 trends based on daily tracking surveys conducted March 1-31, 2002 and May 2-19, 2002.
- xlvi January 2002 trends based on a daily tracking survey conducted January 3-31, 2002.
- xlvi December 2001 trends represent a total tracking period of December 1-23, 2001 [N=3,214]. This tracking period based on daily tracking surveys conducted December 17-23, 2001 and November 19-December 16, 2001.
- xlvi November 2001 trends represent a total tracking period of November 1-30, 2001 [N=2,119]. This tracking period based on daily tracking surveys conducted October 19 – November 18, 2001 and November 19 – December 16, 2001.
- xlvi October 2001 trends represent a total tracking period of October 1-31, 2001 [N=1,924]. This tracking period based on daily tracking surveys conducted September 20 – October 1, 2001, October 2-7, 2001, October 8-18, 2001, and October 19 – November 18, 2001.
- ^l September 2001 trends represent a total tracking period of September 1-30, 2001 [N=742]. This tracking period based on daily tracking surveys conducted August 13-September 10, 2001, September 12-19, 2001 and September 20 – October 1, 2001.
- ^{li} August 2001 trends represent a total tracking period of August 13-31, 2001 [N=1,505]. This tracking period based on a daily tracking survey conducted August 13-September 10, 2001.
- lii February 2001 trends based on a daily tracking survey conducted February 1, 2001-March 1, 2001 [N=2,096].
- liii December 2000 trends based on a daily tracking survey conducted December 2-22, 2000 [N=2,383].
- liiv November 2000 trends based on a daily tracking survey conducted November 2 – December 1, 2000 [N=6,321].
- liv October 2000 trends based on a daily tracking survey conducted October 2 – November 1, 2000 [N=3,336].
- lvi September 2000 trends based on a daily tracking survey conducted September 15 – October 1, 2000 [N=1,302].
- lvii August 2000 trends based on a daily tracking survey conducted July 24 – August 20, 2000 [N=2,109].
- lviii June 2000 trends based on a daily tracking survey conducted May 2 – June 30, 2000 [N=4,606].
- lix May 2000 trends based on a daily tracking survey conducted March 1 – May 1, 2000 [N=6,036].
- lx August 2-5, 2012 trends based on an omnibus survey conducted August 2-5, 2012 [N=1,005, including 405 cellphone interviews]. Omnibus survey not conducted as a tracking survey.

^{lxi} December 13-16, 2012 trends based on an omnibus survey conducted December 13-16, 2012 [N=1,006, including 405 cellphone interviews]. Omnibus survey not conducted as a tracking survey.