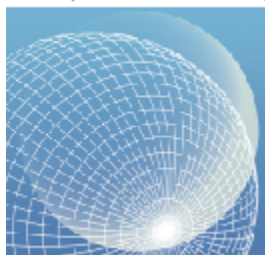


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**EMAIL AT WORK**  
**FEW FEEL OVERWHELMED AND MOST ARE PLEASED**  
**WITH THE WAY EMAIL HELPS THEM DO THEIR JOBS**

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## **SUMMARY OF FINDINGS**

### ***American workers' moderate email lives***

Email is an integral part of American workers' lives. About 62% of all employed Americans have Internet access and virtually all of those (98%) use email on the job. That translates into more than 57 million American adults whom we will call "work emailers" throughout this report. Most of them use email daily for work tasks. But contrary to the perception that wired American workers are buried in email, the large majority of those who use email at work say their experience with email is manageable. They say they spend a modest amount of their typical workday reading and writing email. A portion of those emails probably replace telephone calls or faxes or traditional mail. For about half of American workers, email volume has grown in the last year; for the other half, it has remained the same.

- 60% of work emailers receive 10 or fewer messages on an average day; 23% receive more than 20 and only 6% more than 50.
- 78% of work emailers send 10 or fewer messages on an average day; 11% send more than 20.
- 73% of work emailers spend an hour or less per day on their email. That includes 23% of all work emailers who spend fewer than 15 minutes per day handling email.
- 46% of work emailers say their work email volume has stayed the same over the past year.
- 48% say their email volume has increased over the past year.

### ***Relevant content; little spam***

Those who use email at work say their electronic communications mostly contain content that is highly valuable to their work. Fifty-two percent of them rate their email as being "essential to their work," and an additional 34% rate it as moderately important. While spam (unsolicited email) is a growing problem for personal email accounts and for the Information Technology specialists and Internet Service Providers who are trying to stanch its flow, little spam reaches the on-the-job inboxes of American workers.

- 53% of work emailers say that almost all of their incoming email is work-related and 58% say that almost all the email they send is work-related.
- 75% say that only a little of the email they receive or send at work is personal.
- 71% say that only a little of the work email they receive is spam.

### ***Email is good for relaying facts, but bad for heart-to-heart communications***

In the workplace, email works best for some of the simplest tasks, like managing logistics and communications. Email also serves the most complicated tasks, like big projects. Email comes up short for matters that involve sensitive issues and problems.

- 77% of work emailers say email helps them keep up with events at work.

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- 63% find email more effective than using the phone or talking in person for making arrangements and appointments.
  - 67% find email most effective for reviewing or editing documents.
  - 85% of work emailers prefer to have conversations when they are dealing with workplace problems and other sensitive issues. Fewer than 6% consider email effective in these cases.

***Responsible email behavior; positive email attitudes***

Work emailers display a generally positive, if somewhat dispassionate, attitude about their email situation at work. They see email firmly implanted as part of their jobs and act accordingly. They consider that the benefits of email outweigh drawbacks.

- 88% of work emailers check their email at least once a day. Of those, 70% check at least several times a day.
- 82% of work emailers reply to most of their important email by the end of the day.

Relatively few work emailers check their email when they are out of the office. Just 15% of work emailers check their email before heading to work and 26% check their email after work. Some 15% say they check email on vacations and 31% check it on weekends.

- 64% of work emailers consider email a necessary chore; 26% look forward to it.
- 71% consider email a mixed blessing, but feel mostly positive about it. An additional 17% say they couldn't live without it.

***Email keeps people talking and juices flowing***

Email in the workplace encourages communication.

- 72% of work emailers say email helps them communicate with more people.
- 62% say email makes them more available to co-workers; however, about a third of all work emailers say email has made them too accessible to others.
- 59% say email improves teamwork.

Absent the rules and protocols of letter writing and even telephoning, email use is wild and wooly. People use it for all kinds of professional and personal communications on the job and mostly like the devil-may-care effect on workplace culture.

***The lighter side of email on the job:***

- 43% of work emailers say email has offered them some relief at times during their workday.
- 39% of work emailers say they have sent jokes or chain emails at some point.
- 26% have used email to discuss personal life.
- 15% admit to gossiping about work on email.

***The darker side:***

- 
- 22% of work emailers say email has caused misunderstandings.
  - 28% find email distracting at times.
  - 23% say email adds a new source of stress to their work lives.
  - 16% say email encourages gossip.

***The rise of the power emailers***

A small but distinct minority of work emailers handles a large volume of emails every day. These power emailers are substantially different in their email behavior and their attitudes about email from other work emailers. Power emailers make up about a fifth of wired workers. A detailed table of how they differ from standard work emailers appears on page 17. Of these power emailers:

- 22% receive more than 50 emails a day; 50% receive between 21 and 50.
- 44% send more than 20 emails a day; another 32% send between 11 and 20.
- 68% spend more than 2 hours a day working on email, including 16% who spend more than 4 hours on most days handling and writing email.

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# EMAIL AT WORK

## PART 1: THE STORY OF EMAIL

### *Introduction*

The use of email has become almost mandatory in most U.S. workplaces. The number of U.S. workers with Internet access at their workplaces has grown from under 30 million in March 2000 (the first month the Pew Internet & American Life Project began to monitor Americans' Internet use) to over 57 million in October 2002. Almost all (98%) of these employed Americans have email accounts. Most American employers have provided Internet access with email accounts to employees hoping that this will help them become more collaborative with colleagues and customers, and thus more productive in their work.

But recently, the public imagination has been hit with warnings that whatever boons email provided at work have been compromised by a deluge of unwanted electronic communications. Emailers' war stories are familiar by now: A California journalist says he receives a staggering 1000 *spam* a week.<sup>1</sup> A director of an international relief group, worried about employees' productivity loss, considers instituting an email-free day a week to liberate employees for tasks at hand. Employees of a mid-sized company complain of being held hostage by unending reply-to-all loops of colleagues' office banter.

Many industry watchers predict the worst is yet to come. The numbers reported vary wildly: There are estimates that 7.3 billion emails are sent per day<sup>2</sup>, or 31 billion emails are sent per day; predictions that volume will double in 3 years<sup>3</sup>, or that volume already increased 14% in two months<sup>4</sup>; estimates that corporate email is growing 30% a year; claims that 10%<sup>5</sup> or 20 – 40%<sup>6</sup> or 30%-50%<sup>7</sup> of email is spam; that spam is doubling every 6 months<sup>8</sup>; that spam increased 46% in two months<sup>9</sup>; that each Internet user received nearly 600 spam messages in 2001<sup>10</sup>, or over 1400<sup>11</sup>; that spam counts will double or triple in 2002<sup>12</sup>, or triple by 2006, or reach 3800 by 2006<sup>13</sup>. The numbers come

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<sup>1</sup> Langberg, Mike. "Filtering tools offer hope against spam." 9/26/2002.

<http://www.siliconvalley.com/mld/siliconvalley/business/columnists/4155047.htm?template>.

<sup>2</sup> "You've Got Mail: Enough Already!" editorial, The New York Times. 9/13/2002.

<sup>3</sup> Farrell, Nick. "You have mail: 31 billion a day." 9/30/2002. <http://www.vnunet.com/News/1135485>.

<sup>4</sup> The High Price of Spam. BusinessWeek Online. 9/14/2002.

[http://www.businessweek.com/print/technology/content/mar2002/tc2002031\\_8613.htm?m...](http://www.businessweek.com/print/technology/content/mar2002/tc2002031_8613.htm?m...)

<sup>5</sup> "E-mail marketing on the rise." 9/27/2002. [news.bbc.co.uk/2/hi/technology/2284889.stm](http://news.bbc.co.uk/2/hi/technology/2284889.stm)

<sup>6</sup> Suzukamo, Leslie Brooks. "Re: 'Viagra' Might Delete this email." St. Paul Pioneer Press. 8/19/2002. P.A1

<sup>7</sup> Pegoraro, Rob. "It's Technology and Smarts vs. Inbox Pollution." The Washington Post. 9/22/2002. p.H7

<sup>8</sup> DiSabatino, Jennifer. "Still Struggling to Can Spam." Computerworld. 5/14/2002.

<http://www.pcworld.com/resource/printable/article/0,aid,99403,00.asp>

<sup>9</sup> The High Price of Spam. BusinessWeekOnline.

<sup>10</sup> Ibid

<sup>11</sup> Harmon, Amy. "You've Got Mail. Lots of It, and It's Mostly Junk." The New York Times. 12/24/2001. P. A1

<sup>12</sup> The High Price of Spam.

from parties with differing agendas: reporters, independent or hired analysts, software companies that serve up email or build spam filters.

Even the lowest of these estimates is dramatic, and the personal stories are compelling and ring true – especially to those in certain professions that rely heavily on email communications. These are two of the major reasons the Pew Internet & American Life Project decided to study people’s use of email for their jobs – both in their workplaces and in other locales where work-related email is exchanged. We wanted to get a sense of how much email workers generate and receive, how email is used, what it’s good for, and where it falls short. We wanted to ask the growing legion of work emailers how they feel about this relatively new communications tool. Do they like it, tolerate it, or dread it? And how is email affecting workers’ on-the-job habits? Does it help them complete tasks, or does it divert them from those tasks? We aimed to get workers’ assessments of how their email use has changed the workplace culture. And finally, we hoped to probe the direction of work-related email in the coming years.

For this survey, 2,447 Internet users were polled by telephone during April and May, 2002. We can say with 95% confidence that the error attributable to sampling and other random effects is plus or minus 2 percentage points. Of those sampled, 1,003 use email at work. For this group, the margin of error is plus or minus 3 percentage points.

While we listened to the familiar narratives about email-oppressed workers, we were surprised to discover another story about a much more moderate, tempered – and far more widespread – picture of email’s role in people’s work lives. The snapshot of a typical American work emailer is of someone who spends roughly a half an hour of the workday processing email, including up to about 10 incoming messages and 5 outgoing ones. The typical worker is as likely to have seen no change in email volume over the last year as to have seen it rise.

Demographics of work emailers	
<i>In this population, the percent of work emailers who are:</i>	
<b>Gender</b>	<b>%</b>
Men	53
Women	47
<b>Age</b>	<b>%</b>
18 – 29	23
30 – 49	57
50 – 64	17
65+	1
<b>Education</b>	<b>%</b>
High school or less	18
Some college	27
College grad or more	51
<b>Race</b>	<b>%</b>
White	82
Black	9
Hispanic	7
Other	2
<b>Income</b>	<b>%</b>
Less than \$30K	12
\$30K – \$50K	18
\$50K – \$75K	20
More than \$75K	35

*Source: Pew Internet & American Life Project Email at Work Survey, April – May 2002. N=1003; Margin of error is ±3%.*

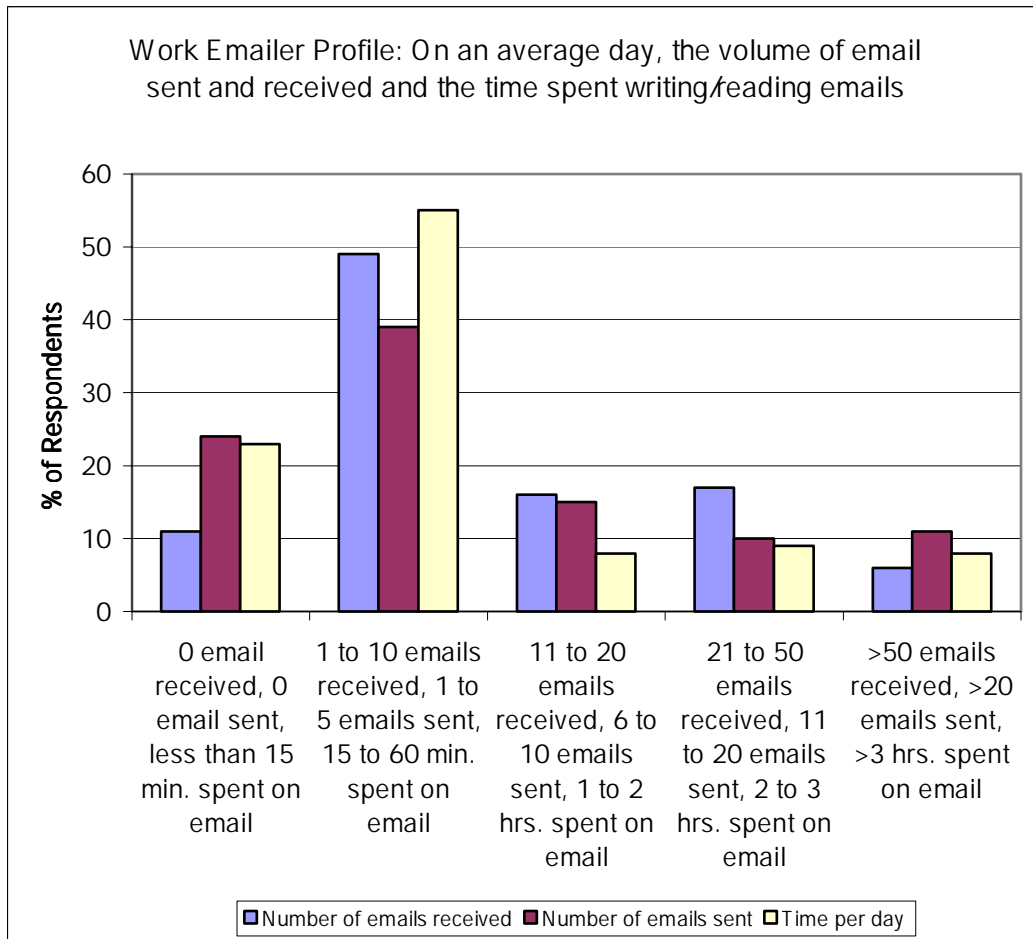
<sup>13</sup> Harmon. P. A1.

***Moderation in all things: Email volume and time spent on email***

A small number of the truly inundated work emailers have created most of the buzz about email overload. About 15% of work emailers process more than 50 emails a day. In comparison, the vast majority of work emailers handle a smaller, more reasonable amount of email on the job. Almost two thirds of work emailers process 20 or fewer emails a day. They generally receive more email than they generate. Sixty percent receive no more than 10 emails a day, and 63% send no more than five.

Three-quarters of work emailers spend an hour or less on their daily email. That includes almost a quarter who log fewer than 15 minutes a day on their work email. Once again, a very small minority spend a very large amount of time on email; 4% of workers spend more than 4 hours a day doing email.

About half of all workers who do work-related email say their volume has remained steady over the last year; and about half say it has increased. Twenty percent say it has increased “a great deal.”



Logging onto email is as easy as, or easier than, checking voicemail and has become ingrained as part of the American worker’s daily to-do list. Almost all work emailers (88%) check their inboxes at least once a day, and most of those (70%) check at least several times a day. Thanks to the popularity of email software with an always-on feature that leaves inboxes open, nearly a quarter of work emailers say they “constantly” check their email.

The moderate volumes and attentive behaviors result in timely handling of email. Nearly half of work emailers (44%) respond to most of the email they *should* respond to immediately, as it comes in. Another 38% answer it by the end of the day. Ten percent answer within a few days. Three percent give up and never answer email they know they “should” respond to. One heavily burdened executive told us, “Eventually, if it’s important enough, they’ll send it again, or telephone.”

Email has had a minimal spillover effect on the working day. Seventy-eight percent of work emailers say that email hasn’t affected the number of hours they work. But when email does affect time spent working, it is more likely to increase rather than decrease the hours at work. Fourteen percent of work emailers say they work more hours, while 8% say they work fewer hours because of email.

Workers describe their email load	
Email is not a problem whatsoever	65%
I manage to stay on top of it	30%
I’m overwhelmed by it	4%
Don’t know/refused to answer	2%

Workers describe their attitude toward email	
I consider it a necessary chore	64%
I look forward to it	26%
I dread it	5%
Don’t know/refused to answer	5%

*Source: Pew Internet & American Life Project Email at Work Survey, April – May 2002. N=1003; Margin of error is ±3%.*

The human face of these modest numbers and responsible behaviors is a worker with a businesslike attitude toward his email. Two-thirds of those who use email at work consider it a necessary chore, while a quarter “look forward to it” and a scant 5% “dread it.” Similarly, almost three-quarters (71%) of work emailers

consider email a “mixed blessing, [that is] mostly positive,” while 17% say they “couldn’t live without it” and 5% “wish they could do away with it.”

***The stuff of email – what workers use it for***

Work emailers are serious about the content of their email. More than half say that almost all (over 80%) of their incoming and outgoing messages are work related. About three quarters of work emailers say that almost none of their emails (under 10%) are personal or spam.

No doubt, this focus on substance leads to work emailers’ high regard for the value of their email. More than half of work emailers rate their email from 8 – 10 on a ten-point scale, where the highest rating describes email as being “essential” to their work. Nine percent rate it 1 – 3, or a waste of their time.



Work emailers are clear about when and where email works well and works poorly. When comparing telephoning, in-person conversation, and email exchanges, email proves best at processing both some of the most simple and most demanding work tasks.

Almost two thirds of work emailers (63%) found email to be the most effective means for making arrangements and appointments in their work lives. Email is an instant advantage in national or global companies for keeping far-flung employees in the loop. It’s a godsend for last-minute round-ups or heads-ups. More than three quarters of work emailers agree (77%) that email has made it easier for them to keep up with events at work.

Workers also prefer email for some of the detailed and serious work they do. Over two thirds of work emailers (67%) find email most effective for reviewing and editing documents. Document attachment, now so popular, seemed almost miraculous in its early days, bypassing cumbersome faxes, excessive copying, and slow exchanges via US mail.

When more complex communications are required —resolving issues, having a dialogue, even asking questions – work emailers concede that email is less effective. For example, work emailers think personal conversations work better than email for raising questions about work; 44% of work emailers prefer in-person conversation, compared to 36% who prefer email. When issues get even more complicated, work emailers prefer face to face encounters hands-down; a scant 6% consider email effective for bringing up problems with supervisors; 4% consider it effective for dealing with sensitive issues.

In a previous Pew Internet Project study of how local government officials use the Internet, we asked respondents to evaluate email as a communications tool between those governing and the public. Government officials, echoing sentiments from this current study, suggested email is not as effective as other communications in situations requiring some level of complexity or sensitivity of discussion.

Government officials said email was “not very effective” in engaging the public in debate. They agreed email helped citizens take a first step to “participate” in debate by registering opinions, but went on to say that email was less effective in the more complex, next steps of actually building consensus or clarifying opinion.<sup>14</sup>

Which is the most effective way to handle these work situations?			
	<i>By email</i>	<i>By phone</i>	<i>In person</i>
Edit or review documents	67%	4%	26%
Arrange meetings or appointments	63%	23%	12%
Ask questions about work issues	36%	17%	44%
Bring up a problem with my supervisor	6%	6%	85%
Deal with sensitive issues	4%	9%	85%

*Source: Pew Internet & American Life Project Email at Work Survey, April – May 2002. N=1003; Margin of error is ±3%.*

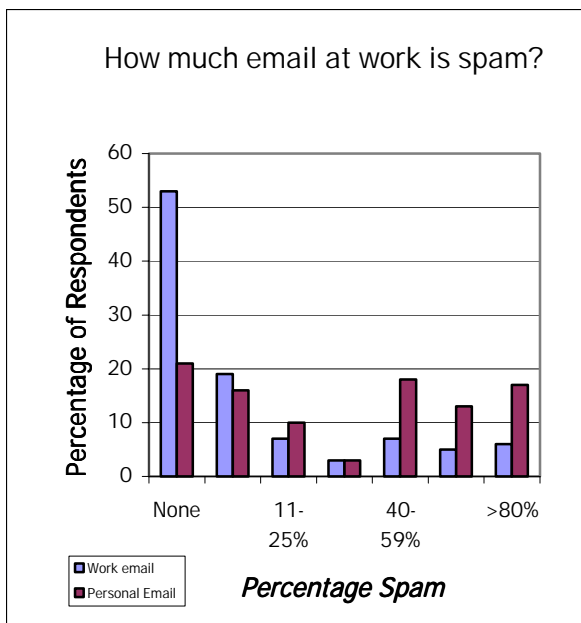
<sup>14</sup> “Digital Town Hall: How Local Officials Use the Internet and the Civic Benefits they Cite from Dealing with Constituents Online.” The Pew Internet & American Life Project. October, 2002. <http://www.pewInternet.org/reports/toc.asp?Report=74>

Email's limitations derive from its nature as a medium, of course. Email lacks the nonverbal "information" that is conveyed in face to face conversations, the rich body language, visual cues, subtle strokes of timing, or feedback. Email's counterpart vocabulary of emoticons – the happy faces, punctuation peppering, stage whispers – can be poor, and often annoying substitutes. Even telephone conversations capture tone of voice, meaningful pauses, the hesitations and rephrasing that are absent in emails. Both of the real-time exchanges enable clarifications and give and take that are so necessary, especially, in sensitive communications. Email just sits out there, often abbreviated, often hastily written, impulsively sent, and an easy target for misinterpretation.

**Spam: The real story at work**

On a typical day, one attentive spam counter reported to us, her inbox spam score would be: personal AOL account 5; corporate account 0. The inventory of spam in the personal account after this emailer's two week vacation was as follows: 200 personal emails received; 75 were pure spam. Of those, 25 related to money-making schemes, 18 featured pornography or sexual content, 3 were obvious viruses, and the rest were a miscellaneous collection of unsolicited announcements and offers.

This work emailer's description of her corporate inbox – zero spam – is at odds with most news accounts about the volume of spam now assaulting the workforce's email accounts.



Current spam estimates, while varying wildly, are uniformly staggering: 4 million spam attacks in a single month against one email security firm's corporate clients<sup>15</sup>; 38% of over 3 billion emails – over 1 billion pieces of spam – were handled by another filtering company<sup>16</sup>; reports of 10% – 30% of work email content as spam; a 15% increase in spam detected by one email security company in a single month<sup>17</sup>. However impossible it is to achieve accurate measures of spam, every reasonable person would agree the amount of spam is significant and growing.

However, two largely underreported facts about spam suggest the situation looks different and less gloomy for those with

email accounts at work. First, the disbursement of spam is very uneven and second, most spam doesn't reach email accounts at people's work places.

<sup>15</sup> DiSabatino, Jennifer. "Still Struggling to Can Spam." Computerworld. 5/14/2002.

<http://www.pcworld.com/resource/printable/article/0,aid,99403,00.asp>

<sup>16</sup> Rey, Jay. "Taming the Torrent of Junk E-mail." Buffalo News. 10/13/2002. P.A1

<sup>17</sup> Roberts, Paul. "Study: Amount of spam, virus-infected e-mails rising." IDG News Service. 10/15/2002.

<http://www.computerworld.com/softwaretopics/software/groupware/story/0,10801,75135,00.html>

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According to our survey results, relatively little spam is finding its way to at-work email inboxes. More than half of work emailers (52%) reported no spam in their email accounts. Another 19% reported less than 10% of their incoming mail at work was spam. Eleven percent reported about two thirds or more of their inbox was spam. By contrast, 21% of respondents reported no spam in their personal accounts; another 16% reported less than 10% incoming spam. Thirty percent reported about two thirds or more of their incoming email personal email was spam.

Why are at-work email inboxes largely protected from spam? One reason is that business or organizational accounts are small prey compared to the rich targets presented by the big email providers like AOL, MSN, Yahoo, or Hotmail. Spammers find it worth their while to go after even a portion of the tens of millions of email accounts at these popular dotcom addresses. It is relatively easy to grab hold of screen names with cheap simple software that generates random user names from tables of common first and last names. Spammers blanket these lists, and the success rate, while far from perfect, is good enough. "It's like shooting fish in a barrel instead of a lake," said one information technologist.

Outside the workplace, the Internet playing field is graded to favor determined spammers over new email users. Simply signing up for services can catch the unwary off guard and doom them to being a spammer's target. At Yahoo, new users must unclick boxes to avoid receiving promotions and polls. At Hotmail, registrants must unclick the "Internet white pages" box or suffer these consequences: (your) "Hotmail e-mail address will be automatically listed in one or more Internet e-mail directories so others can look you up and send you messages!" AOL's latest version 8.0 on the other hand, inaugurates a "report spam" feature that at least gives users revenge to tattle on spam, and MSN 8 boasts a new and critically acclaimed Junk Mail Filter.

Companies and businesses, besides being smaller targets, often take defensive measures against spam. They install server side filters, or email clients with junk mail filters, or spam-fighting services that kick out or divert spam before it reaches inboxes. Such technologies abound, with varying degrees of sophistication and success. Some employees resist automatic filtering for fear of losing valuable mail. One infamous case of mistaken spam identity occurred in the fall of 2001, when hundreds of notifications from Harvard's admissions office to applicants with AOL screennames went undelivered, because the AOL filters mistakenly kicked out the messages as spam.

As a further preventive measure, many companies educate their employees in Web behavior, advising them on how to avoid being snared by spam traps: never respond to spam, thereby signaling your account is live; never post your real email address in chat rooms or on message boards or untrusted Web sites, where they can be conveniently plucked by spammers assembling lists. Unfortunately, even a small slip by one employee – an address posted publicly – can have broad and long-lasting repercussions, getting certain domain names onto spammers' radar and opening up lots of employees to spam lists.

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While these and other anti-spam efforts have been largely successful in holding spam at bay, there are costs. Some are financial: One company estimates the price of spam at \$1.00 per piece in lost productivity<sup>18</sup>. A technology company has constructed a cost-of-spam calculator that predicts a company of 500 employees who receive 5 spam per day and take 10 seconds to delete each one, costing \$40,000 in salaries and 105 days of productivity.<sup>19</sup> Such costs are probably not paid in the few seconds it takes for an employee to hit the “delete” key. But the salaries of Information Technology workers, the purchase of anti-spam applications or services, the cost of extra servers or bandwidth required to deal with incoming (yet ultimately diverted) spam, and the expense of educating employees in anti-spam behaviors all take an economic toll.

Another cost of spam is less measurable – what spam takes away from the general well-being of employees. One IT administrator at a mid-size company explained that the firm’s employees don’t complain about the minimal time lost in deleting their fairly small amount of junk mail. “They’re willing to deal with that; it’s part of the modern world,” he said. But rather, he explained, what really bothers employees is the kind of sickening feeling they get from the daily assault of barnyard subject lines.

Fighting spam will continue on many different fronts. Public annoyance will lead to legislative proposals. Federal Trade Commission rules and regulations will be enforced. Workers who rely on email to do their jobs will learn to protect themselves. Technology wars will escalate between spammers and spam fighters. It is conceivable that the ultimate defense against spam will involve a reversal of the basic logic of email transactions. Until now, email has worked on a fundamentally open model: anyone who knew your e-address could send you a message. Some industry experts suggest that spam will force a change to a “closed” or “permissive” model, in which the owner of each email inbox will specify the senders from whom messages will be accepted. All others will be rejected. Already market forces are beginning to have their say.<sup>20</sup> One bulk emailer reported that the steps he needs to take to get around spam filters have driven up his operating costs 1000% this year, making it a much less lucrative business.<sup>21</sup>

### ***Ambience of the workplace: email’s good contributions***

Email is a powerful communications tool, one with potential for a deep impact on both relationships and mood in the workplace.

We have seen in past Pew Internet Project research that email is a strong force for connecting people. We have found that *personal* email tends to extend people’s social networks. About a third of email users communicated with more people because of

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<sup>18</sup> Olsen, Stephanie, “Spam flood forces companies to take desperate measures,” CNET News.com. 3/21/2002. <http://news.com.com/2009-1023-864815.html>

<sup>19</sup> The High Price of Spam.

<sup>20</sup> <http://slate.msn.com/?id=2074042>

<sup>21</sup> “Meet the Kings of Spam” Aug. 5, 2002.

<http://www.cbsnews.com/stories/2002/08/05/tech/printable517505.shtml>

email—usually by maintaining friends-and-family relationships or reconnecting with those from their past with whom relationships had withered.<sup>22</sup> In another study of local government officials’ use of *work* email, we found that email enabled over half the officials to make contact with citizens they hadn’t communicated with before.<sup>23</sup> In this study, we find email extends and strengthens social ties in the workplace in even greater numbers than previously reported. Nearly three quarters of work emailers say email helps them communicate with more people. Almost two thirds say email makes them more available to co-workers. Sometimes, an email relationship can make co-workers feel like they “know” each other, although they have never actually met.

Well over half of work emailers (59%) say that email improves teamwork, a likely benefit reaped from email’s twin contributions to improved social relationships and enhanced information and work flow.

Savvy managers and executives capitalize on the personal touch that email’s broad reach can have on human relations in the workplace. A boss can blanket a company with good-news announcements, or impulsively dispense individual virtual kudos, or invite “personal” correspondence from employees. Such email exchanges can serve to flatten hierarchies. In one bi-coastal company of 700 employees, restroom gossip would frequently include the astonished reports that the CEO – sitting three time zones and 2,500 miles across the country, actually responded to a personal query from a low-level employee.

Email tends to loosen up the culture of a workplace. Close to half of work emailers (43%) find that email, often likened to a virtual water cooler, provides some relief during their work day. Thirty-nine percent of work emailers send or receive jokes and chain letters; a quarter chit chat about personal lives; 15% gossip.

But email, like the water cooler, harbors a dark side. More than a quarter of work emailers (28%) find the temptations of email distracting to their work. A small number (16%) think email actually encourages the office gossip. And nearly a quarter say email creates misunderstandings (22%) and more stress (23%).

How email changes the workplace	
<i>Workers report how email affects relationships and culture</i>	
<i>Change that email spawns</i>	<i>%</i>
Easier to keep current	77%
Communication with more people	72%
More available to co-workers	62%
Teamwork improvement	59%
Provided moments of relief	43%
Too accessible to others	34%
Distracting from work	28%
New source of stress	23%
Caused misunderstandings	22%
Encouraged gossip	16%

*Source: Pew Internet & American Life Project Email at Work Survey, April – May 2002. Margin of error is ±3%.*

<sup>22</sup> “Tracking Online Life: How Women Use the Internet to Cultivate Relationships with Family and Friends.” May, 2000. <http://www.pewinternet.org/reports/toc.asp?Report=11>

<sup>23</sup> “Digital Town Hall”. The Pew Internet & American Life Project.

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***The ethics of email: Right and wrong, trust and mistrust, and tolerance for the tightening of rules and regulations.***

For most emailers, sloppy or shady email habits carry few consequences. But for others, sending inappropriate content and mishandling or misuse of email spell disaster. As early as the 1980s Iran Contra case, critical evidence came from emails that were supposedly deleted but still lurked on the computer in recoverable form. In the summer of 2002, email evidence figured strongly in the trial of Arthur Andersen for its accounting practices at Enron, and the SEC took aim at six major Wall Street firms for deleting emails before the 3-year statute of limitations. Hewlett Packard suspended 150 employees for sharing inappropriate content via email. Email messages were drawn as ammunition against Microsoft, Merrill Lynch, Martha Stewart – the list goes on. About 10% of work emailers say they have accidentally sent an embarrassing email to the wrong person at work, but few have faced the consequences that researcher Stephen Martin did when he accidentally sent an email to the wrong person. Martin spent 10 months of the year 2000 in prison under the federal Economic Espionage Act for stealing trade secrets through email.<sup>24</sup>

Past research shows that employers and employees share a clear sense of the right and wrong ways to use their business email. In a survey conducted in 2000, both groups believed the worst transgressions of email use were harassing co-workers (over 90%) and circulating pornographic material by email (over 85%).<sup>25</sup> About half felt personal use of company email was an ethical violation, but this ranked 13th of 14 on a list of ethical violations, including falsifying personal information, misleading customers, to whistleblowing by employees on illegal or unethical company actions (which ranked last.)

Surveys indicate that both employers and employees apply a common sense rule for how much personal emailing online is appropriate. Over 500 Human Resources managers in England recently surveyed in England said that 20 minutes a day of personal Web time is “fair and acceptable.”<sup>26</sup> In our survey, three-quarters of work emailers said that almost none (under 10%) of the email they handle at their work is personal.

***Email and productivity***

Since the high tech era began, there has been an ongoing debate on how information technology affects productivity. For nearly two decades, economists have debated whether increased processing and communications speeds brought about by computers is more valuable than the potential for extra distraction and tinkering that they bring. This study was not intentionally designed as an economic measure of worker productivity, as was a 2000 survey demonstrating that office workers could gain 14% – 20% in productivity.<sup>27</sup> Nevertheless, our findings contribute to, without resolving, the debate.

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<sup>24</sup> Tom, Pamela. “Perils of Email.” Tech Live. March 2002.

<http://www.techtv.com/news/politicsandlaw/story/0,24195,3377990,00.html>

<sup>25</sup> Ethical Issues in the Employer-Employee Relationship. Survey by the Society of Financial Services Professionals. March 2002

<sup>26</sup> Greenspan, Robyn. “Wasting Work Time on the Web.” CyberAtlas, Sept. 13, 2002.

[http://cyberatlas.Internet.com/markets/professional/print/0,,5971\\_1402151,00.html](http://cyberatlas.Internet.com/markets/professional/print/0,,5971_1402151,00.html)

<sup>27</sup> “Assessing Email Productivity Part III: Quantifying the Gains.” Ferris E-Business Information Service, Document 20000112. January 2000.

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Our research about email in the workplace provides soft evidence for both sides. But by and large, we would argue that workers feel email is a positive force on work emailers' productivity.

Email stands out as a time saver: In this study, an overwhelming number of work emailers, 86%, report that email saves them time. Forty-three percent say email has saved them a lot of time; an additional 28% report email has saved them some time; 15% say email has saved them a little time. Thirteen percent report that email has not saved them any time at all.

We have also documented some soft measures that support our sense that email improves productivity. Email contributes to affable worker relations, a smooth workflow, and individual professional-well-being.

Email has a positive effect on the social work environment: 59% of work emailers say email improves teamwork, 62% say email makes them more available to co-workers. Email is the tool of choice for effectiveness in many work tasks: two-thirds of work emailers prefer email for many work tasks, from managing schedules to editing documents. Work emailers like their email and consider it valuable: 71% consider email a generally positive force in their work lives. Half say it's essential to their work.

On the other hand, email is a drain to productivity in other soft measures. These negative effects are recorded, however, in much smaller numbers. For up to about a third of workers, email can be stressful, encourage gossip, or otherwise create situations that distract from work.

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## **PART 2: THE LEADING EDGE**

### **THE PEOPLE, PLACES, AND TECHNOLOGIES THAT SIGNAL THE FUTURE OF EMAIL**

The responses to this survey of email in the workplace have given us a pretty good understanding of the role of email in mainstream work situations – that workers use email moderately and responsibly, that email works better for straightforward communications than delicate ones, that email adds a casual touch to the workplace environment. We have also learned some things from the most avid users of email in the workplace that may signal how all of us will use email in the future.

#### ***The people: Power emailers***

We got a sense from our data and from our interviews that there is a small group of work emailers who are different from all the rest. This group matches the profile of the work emailer we read and hear most about in the press reports and in Internet lore – the worker who is inundated by email and who spends long hours dealing with it.

We identified a group we called “power emailers” – those who handle the highest volumes of email (typically more than 30 and often more than 50 messages a day), spend the most hours in the day doing their email (at least one and more likely well over 2 and often beyond 4), and who check their inboxes with greatest frequency (at least several times an hour and often with an “always-on” function). The power emailers represent about 20% of all work emailers.

#### ***The profile***

Demographically, power emailers belong to the workforce elite. The majority (59%) are college educated or beyond. They are high earners; over half of them (52%) live in households that earn at least \$75,000 per year, including a third (32%) of all power emailers who live in households earning at least \$100,000 per year. Two-thirds (66%) of power emailers work as professionals, managers, or executives. Ten percent do clerical or office work. Sixty-one percent are between the ages of 30 and 50. Eighty percent are white. The largest number of power emailers (43%) work for large corporations. Half are men; half are women.

In past Pew Internet Project research, we have seen that veteran users – those who have been online for more than 3 years – generally do more of everything online, from shopping to getting news to listening to music. The profile of power emailers fits right in to this picture, with far more of them being online veterans than standard emailers are. Eighty-three percent of power emailers have been online at least 3 years, nearly half of those for more than 6 years. In comparison, 60% of standard emailers have been online so long.

It is noteworthy that power emailers are evenly split between men and women. Previously, Pew research has shown that men generally take the lead in Internet behaviors, doing more, earlier and faster than women. On the other hand, we have also seen that women love email; they value it more for personal relationships, and use it more for heartfelt communications.



Correlating with power-emailers' high numbers for volume and time online are consistently high measures of responsible email behavior and positive attitudes about their email. Power emailers value their email highly, both in its direct impact on their work and the effects on office life. They feel largely in control, and they even answer their email more promptly than standard emailers. Forty-eight percent of power emailers answer incoming emails immediately, versus 43% of standard emailers.

There are signs, however, that email can become too much of a good thing. For example, while power emailers are more likely than standard emailers to be a lot more available to work colleagues (58% vs. 33%), this spills over into being *too* accessible (30% vs. 16%). But email complaints, even from power emailers, remain small. Overall, about a third of power emailers say they couldn't live without their email, twice the number of standard emailers who say that.

***Power emailers' behavior: doing more with email, and doing it smartly***

Power emailers take better advantage of the potential versatility of email than do standard emailers. They do more of everything with their

Power and standard emailers <i>How different work emailers work with, value, and are affected by their email.</i>		
	Power Emailers	Standard Emailers
<b>What emailers do with email</b>	%	%
Set appointments	81	58
Deal with documents	81	63
Ask questions about work	54	31
Send jokes/chain mail	50	36
Discuss personal things	37	23
Gossip	25	13
<b>How emailers work</b>	%	%
Organize email into folders	82	63
Actively manage email	71	41
Have no problem with email load	34	72
Check email on weekends	21	14
Check email after work	16	10
Check email before work	15	7
Check email on vacations	10	4
<b>Content and value of email</b>	%	%
Only send a little personal email while at work	83	74
Only a little of their incoming email is personal	80	73
Almost all of the email they send is work-related	79	54
Almost all incoming email is work related	71	49
Say email is important to work	69	48
Can't live without it	28	15
<b>Effects of email in workplace</b>	%	%
Email helps them communicate with more people	78	43
Keeps current with events	72	48
Makes them available to others	58	33
Saves time	56	40
Aids teamwork	44	24
Say email makes them too accessible to others	30	16
Increases their workload	24	11
Provides moments of relief	19	13
Causes stress	12	5
Can't get away from work	11	4
Is distracting	9	5
Causes misunderstanding	8	4
Encourages gossip	6	5

*Pew Internet & American Life Project. Email at work survey, April-May 2002, Margin of error is ±3%.*

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email; more work and more play.

Power emailers find email more effective than phone calls or face-to-face dealings for nearly all the tasks at hand, more than standard emailers do by large margins. More power emailers choose email for making appointments, dealing with documents, and asking questions about work.

Power emailers also have fun, cultivating the light side of email even more than standard emailers. Power emailers outnumber standard emailers in using email for gossip, discussing personal things in their lives, and sending on jokes and chain letters.

Power emailers observe best-practices for handling their email in far greater numbers than standard emailers; almost three quarters of power emailers say they take steps to manage their email. They filter, forward, and file automatically. Over 80% of power emailers organize their email into folders.

Power emailers may be using the anytime/anyplace capabilities of email as a further strategy for controlling their vast volumes of email. They check their email outside the office far more often than standard emailers, on weekends, after work, before work and on vacations.

***For power emailers, email is all business***

Email has quickly evolved from a novel way of communicating to a full-blown business tool. This happened fast, over fewer than a dozen years, and it happened in tandem with the discovery that emailers could also do a lot of fun things with their email, like send jokes, forward links or exchange photos. Issues of email etiquette and style in the workplace are growing, as email volume has grown and as individuals' idiosyncratic behaviors started to encroach on others. One person's humor offends another's sensibilities; one person's interesting tidbit is another's outrage. Many businesses are playing quick catch up by articulating and instituting email policies. For example, they may define what is appropriate to put in office emails (no off color jokes; no raffle ticket solicitations for your child's school). And they may outline manners and controls (who gets CCs, and assume email is as private as a public notice).

Power emailers are ahead of the curve here, in their professional email behavior and attitudes. In their work email, power emailers are extremely focused; 71% of them say that almost all the email they receive is work-related, and 79% say almost all they send is work-related.

Power emailers are prompt in answering their email. If anything, they are slightly more aggressive than standard emailers. Almost half immediately answer the mail they feel they *should* reply to, and 90% respond by the end of the day. This doesn't mean power emailers are unfazed by the volume in their inboxes. Many were annoyed by the content, complaining that many CCs from undiscerning underlings were either "showing off" or covering their moves.

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Our general sense from this study is that email can contribute to increased worker productivity. Among power emailers, who spend great portions of their day on email, this potential looks even greater. Power emailers say email is a big time saver: 81% of power emailers say email saves them time, compared to 69% of standard emailers.

One warning flag for the lifestyle of power emailers: All this email is more likely to get power emailers working more. A quarter of power emailers have increased the amount of time they spend working because of email, more than twice as many as standard emailers. But when email does increase the amount of time power emailers spend working, almost a third say they will spend more time working at home on email, twice as many as at the office, demonstrating how power emailers take more advantage of the anytime/anyplace phenomenon of email.

***Power emailers feel good about email***

In what looks like a report card from the leading edge, email gets higher marks from power emailers than from standard emailers in every measure. They value both its direct impact on the substance of work and its peripheral benefits in the workplace.

Sixty-nine percent of power emailers give their emails the highest marks for being important to their work compared to 48% of standard emailers. Nearly twice as many power emailers (28%) as standard emailers (15%) declare that they “couldn’t live without” their email.

Power emailers accentuate the positive effects of email in the work environment, and are, by every measure, enthusiasts compared to standard emailers. Email helps them communicate with more people, aids teamwork, keeps them current with events at work, makes them available to others, and provides moments of relief.

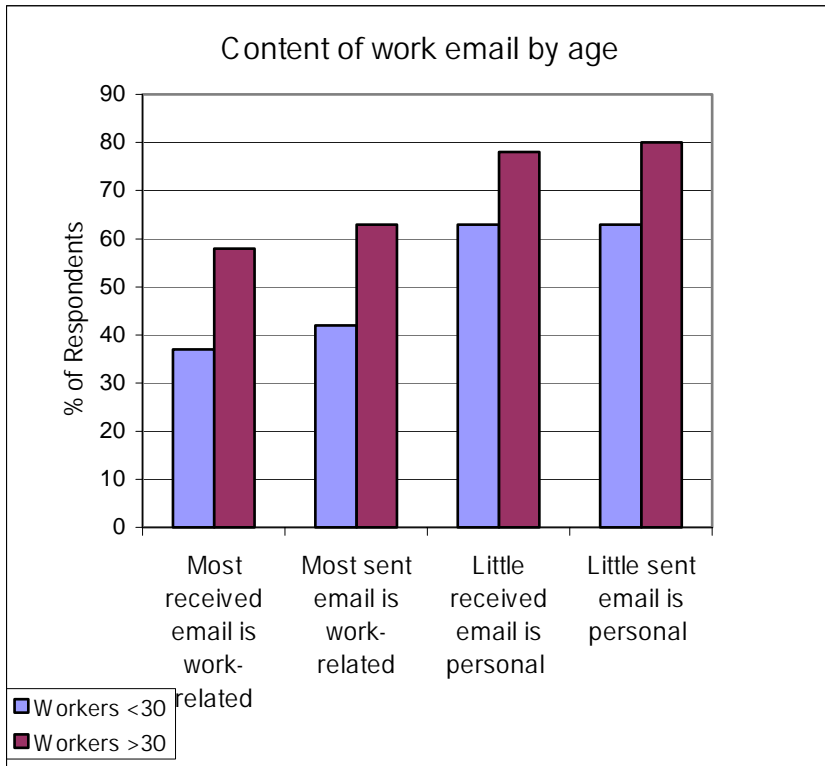
While positive effects of email far overshadow negative effects, those negative effects reverberate more strongly through the power email culture than standard email culture. More power emailers say their email makes it impossible to get away from the office, makes them too accessible to others both inside and outside the company. They find greater hazards of email causing misunderstandings, being distracting, and causing stress.

Three-quarters of power emailers say they approach their email as a necessary chore. In the extremes, many more power emailers look forward to their email (22%) as dread it (4%).

The high volume of email does present a challenge to power emailers. While a third of power emailers say their email load poses no problem to them whatsoever, more than twice as many standard emailers (72%) – who face a much lighter load – declare their email poses no problem at all. Over half of power emailers, say they manage to stay on top their email, while 11% admit to being overwhelmed by it.

**The people: Young workers**

The youngest workers, those under 30 years old, represent the first generation to have grown up with the Internet and email. Email is second nature to this group. They are comfortable sending email in all kinds of situations their parents might not even consider: invitations to events as formal as weddings; serious thank you notes; job inquiries and resumes. Even college admissions offices, the last bastions of formality and tradition, have begun to send out admissions decisions via email. When Harvard College, for the first time last year, offered applicants the option of receiving their news about admissions decisions by email, 96% took them up on it. With an unprecedented twist on old culture meeting new, Harvard fired off 18,000 emails to applicants to the class of 2006, with addresses like BlondieBaby22@hotmail.com or ChooseMe84@yahoo.com.



It's not surprising, then, that younger workers use and regard their email in the workplace differently from older workers. One indicator is that the borders between their work and personal email lives are fuzzier.

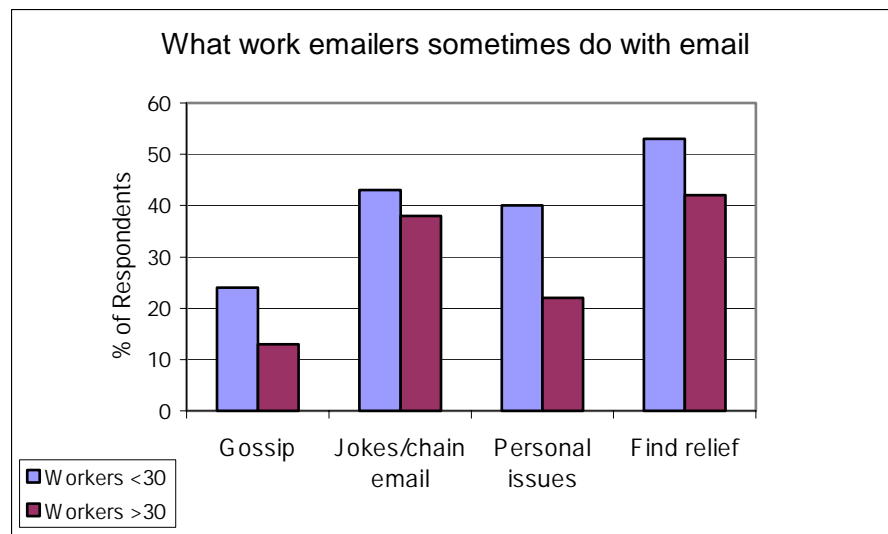
To an impressive degree, all workers are responsible about the content of their email at work. The bulk of email handled by work emailers of any age is work-related. However, young work emailers mix personal and work emails more freely; bigger

numbers of the under-30 crowd are processing lots of personal mail and spam. For those under 30, 37% say almost all the email they receive, and 42% say almost all they send is work-related. About half again as many work emailers over 30 say almost all their incoming and outgoing email is work-related. Those under 30 admit to handling more personal email at work. Forty-one percent of those under 30 said none of the email they received was personal, compared to over 50% of workers over 30. Sixty-three percent said almost none of the email they sent is personal, while 80% of those over 30 say they get almost none of the email they send is personal

Younger work emailers are more easy-going about email standards; they are more liberal in the messages they send around at the office. Nearly double the number of younger workers use their work email to send gossip (24% vs. 13%) or discuss personal issues (40% vs. 22%). More send jokes or chain letters (43% vs. 38%). Probably because of this, many more of them (53% v 42%) say email provides moments of relief during the working day.

That email has been a comfortable part of the younger generation’s lives for a long time may be part of the explanation why they are more casual and loose about their professional email habits. The context of their working lives is probably another reason. Younger workers aren’t likely to be as harried – including with their email -- this early in their careers. Among our random population, younger workers’ jobs carry less responsibility.

They are less likely to be professionals, managers, or executives, and more likely to be in sales or work as laborers. They are also more likely to work part-time.



This picture of a less stressful

work and email life probably also contributes to a different attitude toward work email. When we asked respondents to describe their email load at work, three-quarters of those under 30 say email is no problem whatsoever, compared to 62% of older work emailers.

As for the future, we imagine as these younger people age and assume more responsible jobs, their email volumes will grow. It will be interesting to watch the impending convergence of two conflicting email value systems: the younger generation’s history of casual, looser email standards and the evolving workplace culture of more regulated, formalized protocols.

***The places: The email-intense workplace***

When it comes to email, not all workplaces are created equal. We asked respondents in this study to describe their jobs and places of work. We categorized workplaces into large corporations, mid-size companies, small businesses, government offices, educational institutions and non-profits. We discovered that some types of workplaces probably embraced wildly different workstyles and environments that confounded clear interpretations of some of the results. For example, working in education could mean being a college professor or a nursery school teacher—each with very different needs for

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email. Or a “small business” might encompass a little Internet company or a home-based designer soap manufacturer. One largely homogeneous group nonetheless stood out: the large corporation. Large corporation employees displayed an unusual degree of cohesion and common behaviors that set them apart from the rest of the respondents.

***Corporations: A power email environment***

Large corporations are email intense environments. Their workers process the highest volumes of email. A higher proportion of corporation employees receive over 20 emails a day and send over 10 than in any other kind of workplace. Compared to other workplace groups, large corporations’ employees spend more time on email. More corporate work emailers spend over 2 hours a day on email. They also check their email most frequently.

Large corporations are more tightly regulated workplaces than all others, except for the government. Employees report that large corporations are more likely to set policies about email use (84%) than other workplaces are (59%), except the government, which is also policy-heavy (86%). Likewise, employees report that corporations are more likely to monitor employees’ email than employers in other workplaces (68% vs. 37%). Again, government work emailers are the exception, reporting even higher numbers of monitoring (75%) than large corporation work emailers.

Oversight of email correlates with high work-related content of email; emailers in large corporations are more likely to report that their email is work-related than other work emailers; 64% of corporate email users report that almost all of their email received work-related, compared to 50% of those in other industries. Eighty-two percent report that almost none of their incoming email is personal, somewhat higher than other work emailers, at 72%.

***Making big companies smaller***

The intense emailing scene inside big corporations serves to humanize or personalize the environment. In much higher numbers than in other kinds of workplaces, work emailers in large corporations report that email helps them stay connected to both the people and happenings of their companies. Sixty percent report email has greatly expanded the number of people they communicate with, compared to 47% in other professions. Nearly half (47%) say email has made them a lot more available to other workers, compared to 36% of other professions. And 63% say it greatly helps keep them in touch with events at work, compared to 49% elsewhere.

In past Pew Internet Project research, we have found some indications that email is a particularly useful communications tool among larger populations that need or want to communicate with each other. Just as email is used more powerfully (in greater volume, taking more time) in the largest work environments of big corporations, so is email used more resoundingly in larger political communities. Our past study of email among government officials found that almost 50% of officials in cities of over 150,000 used email daily to communicate with citizens, while only 9% of them in communities of 20,000 did.<sup>28</sup>

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<sup>28</sup> “Digital Town Hall”. The Pew Internet & American Life Project.

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***New technologies: Taking work out of the workplace***

Email offers many work emailers new flexibility to do some of their work from anywhere at anytime. With the prevalence of home email access, portable and wireless connections, workers are beginning to carry some of their email out of the office.

The out-of-office work emailers are mostly logging on over the weekend (about a third) or after work (about a quarter). The scenarios are familiar: a worker uses the weekend to work through a backlog of emails that piled up during the work week; another worker is awaiting a reply from a colleague and logs on in the evening to see if a message has arrived. The morning rush less often includes email; only about 15% of work emailers check their email before work. And vacations, as well, remain largely sacrosanct; again, about 15 % of work emailers log on during holidays.

Transportability of email is a blessing for some and a curse for others. Twenty-four percent say email helps them get away from the workplace, and 15% say it makes it impossible to get away from work. The harried travelers who line up in the high-priced airport lounges to download email before hopping on a long flight could fall into either group.

Seventy-eight percent of work emailers say email hasn't affected the number of hours they spend working. But when email does affect work hours, it is most likely to show up as increased at-home work time, according to 18% of work emailers. Nature of the job matters; for managers, those who deal heavily with others in an office environment, email has increased their working time in the office. For those with often less physically confining jobs (professionals, small business owners, sales people), email has probably let them move around, but the price is increased work time out of the office.

With this work email data, Pew adds to its growing profile of the effects of the Internet on work and work habits. In sum, our growing data demonstrate that workers are beginning to use their computers at home for work purposes. We find almost half of work emailers have checked their work email from home, albeit infrequently; about two-thirds have used the Internet at home for job related research. About three-quarters of work emailers say the amount of time they spend working at home is unchanged by email activities, but 18% say they spend more time working at home because of email.

***New technologies: Lightening the email load***

Email was invented from a charmingly simple idea just three decades ago. Ray Tomlinson, an engineer in Cambridge, Massachusetts, figured out he could combine a program that let him leave messages on his shared computer with another program that let him transfer files between computers. With that fusion, plus the now famous @ sign, Tomlinson could direct a message to someone who was checking a computer somewhere else. Since then, emailers have creatively adapted email well beyond transmitting simple messages.

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Workers have seen in email a wonderful tool and have stretched its uses well beyond its humble beginnings, although with sometimes clumsy results. The software industry, taking cues from users, has adapted the email software to meet user needs in a more elegant manner. The inevitable impact of this evolution will be to lighten email load, moving some correspondence out of inboxes, either onto the Web or into associated applications.

For example, in arranging appointments – a particularly popular activity on email – usually workers engage in a clumsy ping-pong of messages: “Who can come to a staff meeting at 2?” “Not me; how about 3?” “Too late for me; say 1:30?” “I’m at a late lunch,” etc. etc. Now, adapted email software enables a meeting organizer to view the calendars of every participant, find a common free time, and put a meeting on the calendar for all to see. Done in one stroke.

A second popular use of email we found among our respondents is to exchange and edit documents. In many businesses, the growing load of attachments has begun to tax servers, and to push employees to keep very organized track of the different versions of documents they are jointly working on. The software industry has answered the problems with Web-based document-sharing software that eliminates the gummy and confusing trading of updated attachments. Workers can chronologically store edited versions of shared documents in secure Web environments, outside their email systems.

At least three more advances will affect email at work: Instant messaging, organizational intranets, and email management techniques.

Instant messaging will move more correspondence out of inboxes and into real time. In this study, only 16% of respondents reported they used instant messaging at work. Almost half of those spent no more than half an hour a day IM-ing. Ten percent spent over four hours a day on IM. While IM-ing has been around for a while and is a familiar and available technology, it remains sparsely used in the working world compared to the public world, where about half of all emailers have done IM-ing at some point. The difference stems in large part from IM security worries by big institutions.<sup>29</sup> But big providers are directly answering these concerns – and aiming for revenue-enhancing market share – by developing enterprise instant messaging software.

Intranets will probably expand greatly in popularity as well, especially among mid- and large-size employers. Intranets, with their ability to house lots of organizational information, will be a great reference resource and likely eliminate many mass emailings about current news, company announcements and reminders, etc.

Finally, as email software incorporate better email management systems, and as users take more advantage of them, email volumes will lighten, and dealing with email will certainly become more efficient. But the currently large numbers of work emailers who

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<sup>29</sup> Angwin, Julia. “America Online Invites Businesses Onto its ‘Buddy List’.” *Wall Street Journal*, p. B1. Nov. 4, 2002.



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don't manage their email, or who manage it poorly, suggest that user trust and fluency in technology have a ways to go.

Under half of work emailers (46%) take steps to organize their incoming mail. Of those who take at least some steps to manage their electronic inboxes, two-thirds organize their mail into folders; half use filters to keep out unwanted mail; half say that at times they print out email as a way of organizing it. One emailer, caught in a grey zone between the virtual and paper worlds, described how she prints out every incoming message, piles them in organized stacks, and watches them grow until they eventually spill over onto each other in a giant heap. We suspect she is not alone.

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## METHODOLOGY

This report is based on the findings of a daily tracking survey on Americans' use of the Internet and email. The results in this report are based on data from telephone interviews conducted by Princeton Survey Research Associates between April 9 and May 17, 2002, among a sample of 2,447 Internet users, 18 and older. For results based on the total sample, one can say with 95% confidence that the error attributable to sampling and other random effects is plus or minus 2 percentage points. For results based on those who use email at work (n=1,003), the margin of sampling error is plus or minus 3 percentage points. In addition to sampling error, question wording and practical difficulties in conducting telephone surveys may introduce some error or bias into the findings of opinion polls.

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

New sample was released daily and was kept in the field for at least five days. This ensures that complete call procedures were followed for the entire sample. Additionally, the sample was released in replicates to make sure that the telephone numbers called are distributed appropriately across regions of the country. At least 10 attempts were made to complete an interview at every household in the sample. The calls were staggered over times of day and days of the week to maximize the chances of making contact with a potential respondent. Interview refusals were recontacted at least once in order to try again to complete an interview. All interviews completed on any given day were considered to be the final sample for that day. The response rate to this survey was 39%.

Non-response in telephone interviews produces some known biases in survey-derived estimates because participation tends to vary for different subgroups of the population, and these subgroups are likely to vary also on questions of substantive interest. In order to compensate for these known biases, the sample data are weighted in analysis. The demographic weighting parameters are derived from a special analysis of past Pew Internet and American Life Project surveys. This analysis produces population parameters for the demographic characteristics of Internet users. These parameters are then compared with the sample characteristics to construct sample weights. The weights are derived using an iterative technique that simultaneously balances the distribution of all weighting parameters.