



**MESSAGING FOR INNOVATION:  
BUILDING THE INNOVATION INFRASTRUCTURE  
THROUGH MESSAGING PRACTICES**

**Executive Summary of Research Findings**

2000 Report  
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## Table of Contents

- **Introduction** ..... p. 3
- **Overview** ..... p. 4
- **Study Findings — Messaging is the “Infrastructure of Innovation”** ..... pp. 5–21
  - *Work Rhythms Create Messaging Practices* ..... p.5
  - *Avoid Inefficiency with “Personal” Best Practices* ..... p.8
  - *Tools Manage Thinking as well as Tasks* ..... p.10
  - *Techniques Help Navigate the Knowledge Landscape*..... p.14
  - *The Primary Office as Work “Service Station”* .....p.16
  - *It’s Not About Tools, It’s About Features* .....p.17
  - *“Just-in-Time” Feature Learning* .....p.19
  - *Feature Learning is Personal* ..... p.21
- **Quantitative Data** ..... pp. 22–30
  - *Message Volume is Increasing* ..... p.23
  - *E-mail is Largely Responsible for Increases in Volume* ..... p.23
  - *Workers Still Value Face-to-Face Meetings* .....p.24
  - *Shifts in the Communications Mix* ..... p.25
  - *The Communications Toolkit Continues to Expand* ..... p.26
  - *E-mail Remains the Newest Tool on Workers’ Desktops* ..... p.26
  - *Workers Report Fewer Interruptions* .....p.26
  - *Tool Use Varies by Country* ..... p.27
  - *U.S. Workers are Intensive Internet Users* ..... p.27
  - *Workers Report More Distractions* ..... p.28
  - *Workers are Learning to Cope with Message Volume*..... p.28
  - *Project Work and Work Teams* ..... p.28
  - *Communication Preferences by Work Cycle* ..... p.29
  - *Workers Share Information in Electronic Space* ..... p.29
  - *Preferred Tool for Regular Information Exchange* ..... p.29
  - *Communicating Throughout the Project Work Cycle*..... p.30
  - *Preferred Tool for Project Completion*..... p.30

## Introduction

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“Messaging for Innovation: Building the Innovation Infrastructure Through Messaging Practices” builds on four years of trend data compiled and examined by Pitney Bowes. This is the first and only study of its kind to examine the complete desktop messaging environment of knowledge workers — how they use messaging tools to impact their productivity and organizational value. The fourth in a series of studies on Managing Communication in the 21<sup>st</sup> Century Workplace, the 2000 study was commissioned in partnership with The Institute for the Future (ITF) — an independent, nonprofit research firm — and drew on ethnographic interviews or observational interviews, as well as extensive telephone surveys. The research was conducted between January and March 2000 and consisted of interviews with workers at all organizational levels in small, medium, large and *Fortune* 1000 companies in Canada, France, Germany, the United Kingdom and United States.

This year’s study results identify the role business messaging tools and practices play in supporting continued innovation in companies of all sizes. Workers employ messaging practices to effectively use digital and paper-based communications tools to manage workflow and thinking. Following are highlights from the 2000 study:

- **Messaging enhances thinking as well as helps to organize work.**
- **Messaging practices are idiosyncratic — as individual as a fingerprint.**
- **While there is no right or wrong way to manage messaging, best messaging practices can be used to maximize productivity/efficiency.**
- **Successful messaging practices help workers create personal competitive advantage.**
- **Workers rely on highly individualized subsets of tool features, versus complete communications tools, to manage personal and group messaging.**
- **Informal training from co-workers, friends and family can be more effective and long-lasting than formal training courses and manuals for some people; but learning strategies, like messaging practices and features usage, are highly idiosyncratic.**

Pitney Bowes is a \$4.4 billion premier provider of informed mail and messaging management. For more information on Pitney Bowes, please visit the company’s Web site at [www.pitneybowes.com](http://www.pitneybowes.com).

*Source for all statistical data: ITF, Pitney Bowes project, 1997-98, 1998-99 and 1999-2000, Managing Communications in the 21st Century Workplace.*

## Overview

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As the globalization of the economy continues and work teams become more dispersed over a series of geographically diverse sites, the business roles and reach of corporate workers continues to evolve and expand. Many corporations now recognize knowledge as a product in, and of, itself and as the raw material of innovation. This has given rise to the description of today's workers as "knowledge workers"— being, in effect, those who trade and distribute information on world markets.

For the last three years, Pitney Bowes has studied how messaging tools — everything from sticky notes and postal mail to voicemail, e-mail, cellular phones and advanced management tools — are being used by knowledge workers in today's office environment. The 2000 study probes deeper into the role that messaging tools and practices play in knowledge workers everyday lives. From the information garnered in the study, the following conclusions were drawn:

- Messaging practices build business innovation infrastructure by helping workers build social and intellectual capital.
- The shared thought that results from leveraging social and intellectual capital creates the paths for knowledge that lead to innovation.
- Messaging tools and practices help knowledge workers enhance thinking as well as organize tasks.

Three basic principles of logic were applied to develop these conclusions:

- Innovation drives or produces value in the New Economy.
- Knowledge is the raw material of innovation.
- Messaging is the way that workers manage and turn knowledge into innovation.

Knowledge work centers on using information to add value to processes and decisions at all levels within an organization. In order to innovate, workers must be able to accommodate the planned and disruptive activities that make up their days and continue to innovate. Balancing communication and information needs with oneself and one's various work groups is the key to working productively and effectively in this environment. Therefore, the communicating, or messaging, is both a significant part of the work and a key infrastructure of innovation.

Messaging practices transcend the transfer of information; it is the way in which knowledge workers distribute themselves across time, physical and social space. Messaging practices help workers organize their thoughts and tasks, divert and regulate workflow, create knowledge pathways to co-workers and maximize their contribution to the organization. The goal for knowledge workers is to build personal and shared innovation infrastructures. In order to reach this goal, they employ a variety of communications tools, features and practices to manage their personal work rhythms.

Eight messaging practice themes emerged from the 2000 study, which illustrate both the diverse nature of modern business messaging and the need for effective message management. These themes are addressed on the following pages.

## Work Rhythms Create Messaging Practices

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Many of today’s knowledge workers find themselves working on diverse projects that require very different approaches, organization and communications tools. While some workers have jobs that are regular and predictable, many report having irregular, unpredictable jobs that require improvisation and a degree of problem solving. The challenge for workers is to strike a balance between planned and unplanned, routine and reactive tasks. This balance ensures workers are operating at optimum efficiency and delivering value for their employers.

*Figure 1* shows how knowledge work falls along two key dimensions — predictability of work and type of organizational contribution — and illustrates the full range of work rhythms. The figure presents four distinct categories of work rhythms, which shape the nature and volume of messaging. To maintain a feeling of control over projects, the secret is to actively try to move projects and tasks into the “predictable” quadrants.

Regular Predictable Tasks	<p><b>Familiar Routines</b>          Limited scope, partners          Specific activities          Known volume          Cyclical tasks</p>	<p><b>Planned Projects</b>          17 projects/person/week          7 teams/person/week          Complex message          High volume  <b>SELF MESSAGING</b></p>
Irregular Unpredictable Tasks	<p><b>Fire Fighting</b>          Unexpected, crises          Erratic volume          Unknown rules          Improvised messaging</p>	<p><b>Problem Solving</b>          Strategic          Adaptive not improvised          Long-term solution          Diverse partners</p>
	Tactical	Strategic

*Figure 1.*

Some knowledge work is routine and predictable, but much of it is irregular and unanticipated. Knowledge work varies in many ways, from timing and pace to its impact on the organization. Some tasks support core processes and ongoing work of the organization. Other tasks are more strategic and contribute to innovation. A major challenge for knowledge workers is to maintain a productive balance across various obligations. Inefficiencies (both for the individual and the organization) arise when workers cannot maximize their contribution to strategic work nor can they take advantage of creative opportunities, which often are the source of innovation. Inefficiencies also arise, however, from neglecting day-to-day tasks and routines — the structures upon which many people in the organization depend. Messaging practices enable knowledge workers to develop organizing and communications strategies that help them move across work rhythms without missing a beat or dampening efficiency.

Predictable work routines and cycles form a solid backdrop for knowledge workers. Whether tactical or strategic, routine activities can be anticipated, and they create a steady workflow for individuals and workgroups. Just over one-third of office workers in the United States and Canada (38 percent and 39 percent respectively) agreed that their daily work routine is predictable. Two modes of predictable work — familiar routines and planned projects — have different impacts on the nature and flow of messaging.

### **Familiar Routines — A Consistent Flow of Messages**

Familiar routines are repetitive cycles of work that vary little over the course of days and weeks. Often, these tasks help maintain the core functions of an organization. Familiar, routine tasks are often limited in scope and encompass a distinct set of specific interactions and activities.

Familiar routines are often limited to a well-known set of communications partners — either a small group of individuals or one type of partner, such as customers or the software engineers in the company. For this reason, routine communications protocols and preferences are well understood — communications happen in a certain way, with certain tools, everyday, depending on the particular routine. The regularity of routine work means interactions are consistent and the flow of messages can be fairly predictable. Message volume can be high or low, but it is consistent, without any surprises on how or when to send and receive messages.

One respondent, a bank teller, describes how his job is a daily cycle of the same activities. The consistency in his work eliminates the need to organize himself and his activities. In effect, the work organizes him. Everyday, he works within the boundaries of tasks and expectations that remain constant. He communicates the same way with his customers and his co-workers each day. He has access to e-mail but does not use it because he primarily communicates with his immediate co-workers face-to-face. There are few, if any, variations to his pattern of communication. He can anticipate what communications he will send and receive.

*“Actually, my work is basically routine. Everything’s the same so I just don’t even bother to write [it down]. I go to the branch at eight o’clock, then arrange my work area, and then sign in and am open for customers at nine o’clock. So basically, it’s the same thing over and over, so I don’t bother to write [it down].”*

*— Teller at a large bank, Westchester, NY*

### **Planned Projects**

As last year’s study showed, projects have a distinct life cycle and the communications tools used should match the specific stage of a particular project. As workers get pulled into projects, the cycle of project work shapes their overall tool selection and messaging strategies to remain organized and on task.

Projects provide the regular rhythm during the workweek. Office workers in the United States and Canada also regularly contribute to multiple distinct projects and are part of several different work groups over the course of any given work week (see Table 1), contributing to the complexity and volume of messaging.

Table 1.

Number of Distinct Projects and Work Groups in an Average Week (number per week)

Q: Thinking about a typical workweek, how many different ... do you work on/interact with as a member?

	United States	Canada
Projects/Tasks	17	14
Workgroups/teams	7	5

Coordinating project work and organizing multiple tasks are the subject of many messages and drive overall volume. Message volume is highly variable with project work but can be anticipated. Project cycles and timelines allow workers to plan for spikes in the volume of messaging near milestones and deadlines and develop coping strategies to manage increasing volume.

In addition to messaging fellow project workers and group members, people who work on projects tend to message themselves frequently. This “self messaging” associated with planned projects increases message volume.

### **Reactive Improvisation**

About two-thirds of office workers in the United States and Canada reported that their daily work routine was unpredictable. Unpredictable and irregular work has an element of surprise. Both reactive improvisation (fire fighting) and adaptive problem solving fall outside the normal schedule of routines and planned project work cycles. Messaging in these situations often is reactive and responsive. The work rhythms range from spontaneous shooting from the hip to creative brainstorming. It’s not the worker’s agenda or priority; it’s someone else’s.

Most knowledge workers do some amount of reactionary work, or fire fighting every day, in response to crises or unexpected events. The rhythm is improvisational — spontaneous action to accomplish a task. Fire fighting often is simply a reaction to an unanticipated task, but it could also result from new or unusual work duties.

The flow of messages around this type of work is as erratic and unpredictable as the work itself. Repeated, targeted bursts of messages create moderate spikes in volume throughout the day. Part of the difficulty of reactive work is figuring out how to do it — improvising.

These two examples show how reactive work limits the need, and volume, of messages for organizing work, since the work tends to just happen and isn’t planned.

*“ ... Then somebody may just come up to me and go, ‘Stop what you’re doing. I need you to do this document production right now.’ And then I would jump up and do it. And it might throw off my whole day — my whole day according to the way I wanted my day to go.”*  
— Legal assistant at a law firm, Dallas

*“I tend to usually keep it all in my head and just remember what I was going to do from week to week and day to day. A lot of what I do is responsive on the day or within a couple of days, or [to] someone calling me up and saying, ‘This isn’t working, could you look at what’s going on?’ So a lot of it’s reactive.”*  
— Technical information systems worker at a software company, London

### **Adaptive Problem Solving**

When unpredictable work is *strategic* in nature, responses may not be improvisational but adaptive, or focused on more permanent problem solving that adds value. The work rhythm is quick and responsive, but focused on adding strategic value to work processes or the organization. The goal isn't just to finish a task in the allotted amount of time, but to create a longer-term solution that contributes broader value. Often, this is where innovation opportunities arise.

Messaging flows tend to accelerate as work tasks flow out to a variety of people and as diverse sources of information and knowledge are brought to bear on the problem.

The following operations manager describes his unpredictable work that involves figuring out solutions to delivery crises, credit problems and equipment breakdowns. His responses need to be solutions, not temporary fixes.

*“In my capacity, my head is spinning all day with installation — who needs what? What about the price? This guy didn't get his delivery on time, he wants to talk to a manager. To this guy's waiting six hours for a service call, what are we going to do about it? Every five minutes I could be doing something else. At the garage the engine broke. The truck is down. There was an accident. I get involved in almost anything.”*

— Operations manager at a petroleum plant, Westchester, NY

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### **Avoid Inefficiency with “Personal” Best Practices**

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Workers often face the challenge of managing diverse work rhythms — fire fighting, planned projects, familiar routines and problem solving — while staying on top of their goals and those of the organizations. Developing a unique, customized organizing system to manage diverse tasks helps knowledge workers stay focused.

No single organizing system or messaging practice fits all workers. Individuals choose tools and specific features that work best for them. These individualized best practices help push work into the predictable quadrants (see figure 2) where workers can more often anticipate the pace and plan responses to effectively deal with crises and strategic problems. Even when workers share the same infrastructure, they customize and combine tools and features differently to manage their workflow.

Workers actively screen and filter messages to control their workload and avoid becoming overwhelmed. These tactics allow workers to divert unexpected requests, tasks and information to open time slots or routines to avoid unnecessary inefficiency.

An advertising manager in London describes how she uses various tools for assessing and organizing her tasks on a day-to-day and weekly basis. She screens calls, forcing callers to schedule an appointment to speak with her, thus diverting the interruption.

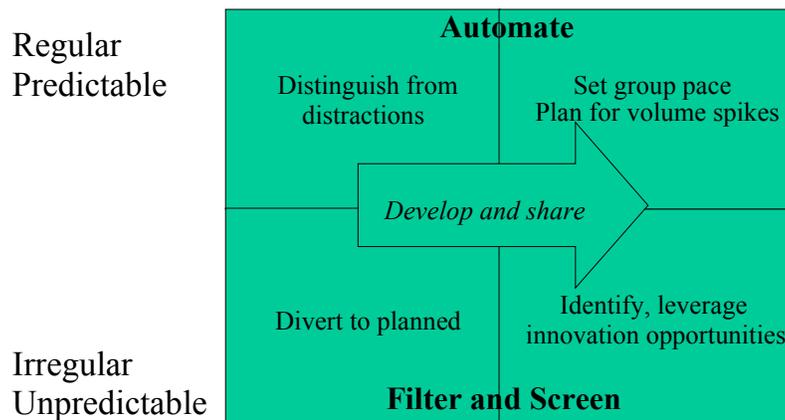
*“I’ve got an Emery desk pad where everything goes in. I think I’m losing the [clock] sometimes, so I definitely need the desk pad to remind me of what I’ve said and done. I’ve got a diary — a weekly planner. I’ve got a year planner with major tasks in it ... the week is kind of divided into certain days. There are certain things that need to be done. I need to make sure that whoever I delegate to, definitely [passes] on that ... I oversee all advertising in central London, so I have meetings with advertising companies and people like that. They are a pain in the neck because they usually try to phone you without making appointments. It’s just like trying to screen them.”*

— *Business manager at a small software company, London*

Workers use tools and features to automate or regulate their work, programming obligations, tasks and reminders into electronic systems. This allows workers to separate tactical and strategic disruptions, making room for innovation.

Sharing personal best practices allows workers to develop and communicate explicit messaging “rules of engagement.” Making rules of engagement clear to co-workers helps streamline processes, avoid repeat messages and improve turn-around time, contributing to a smoother team performance. For project groups, such ground rules keep workers in sync with the larger group and reduce spikes around project deadlines.

*Figure 2.  
Active Screening and Filtering Diverts Work and Gains Control*



## Tools Manage Thinking as well as Tasks

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Tools and features organize tasks and work in such a way that they "pattern" cognitive processing or thinking. People are effectively outsourcing the work of organizing their thinking and pulling up appropriate data to the tools. In today's complex and volatile work place, knowledge workers use messaging tools and features to build and maintain organizational systems within which improvisation and disruptive work can be carried out effectively. The creation of this system allows workers to let the tools organize the work — including the content, thought process, tasks and activities. By creating and working to a rhythm regulated by alarms and reminders, workers' "outsource" their organizing — enabling them to manage their time and know where they need to be without having to think about it. For example, if Microsoft Outlook is set to ring an alarm, they do not have to begin thinking about a particular task or meeting until a specified time. This way, workers reserve their brainpower for tasks that encourage innovation.

Knowledge indexing helps workers to "multi-process," or simultaneously manage various tasks and subjects, permitting them to collect and make sense of appropriate information and then apply that knowledge to a problem or objective. Once the appropriate resources are mobilized, workers can "forget" about certain tasks until they have shifted to the top priority, when these tasks are "pushed" back to their attention — making room for the thinking that needs to be done. Workers use different tools and people to help segment, prioritize and schedule this thinking. Calendar and folder systems, memory aids and white boards are some of the tools used to "outsource" their thinking. Knowledge indexing helps workers manage many of these processes at once.

Calendar systems help regulate thinking for workers; they help establish a work rhythm. PC-based calendar systems, for example, structure the order of thinking about diverse tasks in preparation for various meetings. As the respondent below says, he can forget about certain work and let that set of thinking float to the back of his brain until the calendar pings. Once alerted, he retrieves that set of ideas, problems or questions and begins to work on them.

*"These are all references to projects and tasks that have to be completed. For meetings and whatever, I put those into the calendar system. It's got an alarm system, so it just pings up. Say I've got an important meeting that I need to prepare some stuff for, which I did have a couple put in here, but in general I'll put them into the calendar system. I can set the alarm to ping two days before, or the day before, or a half hour before."*

— Technical information systems director at a large software company, London

Portable electronic organizers, such as personal digital assistants (PDAs), allow regulation and outsourcing to take place on the fly at any location. This controller shows how he is constantly using his Palm Pilot to check in with the rhythm of his work and shift his mental efforts to certain tasks.

*"So, what I'll do is, I'll have my month's schedule pop right up on the screen here. I tap the date, and it's got the whole time schedule for that day. And then it's got hand recognition software, a little type-pad here. And I'll enter the, you know, the item that I have the need to do or remember. In the top left corner would be in the morning. In the bottom right corner*

would be late in the day. And it'll show you what you have for each day. So as soon as I turn this on, each day I just tap on the day and all the items of the agenda I have for that day will pop up.”

— Controller at a manufacturing company, Westchester, NY

Another respondent uses his electronic calendaring system to get quick knowledge about phone conversations — last conversation, issues discussed, and so on — so he doesn't need to remember all that detail but is fully prepared for subsequent phone calls whether scheduled or not.

“It's got a schedule for a day. So this has just got the times I need to call people. What I need to call them about. Whether I need to call them, e-mail or fax them — or whatever. I'm planning throughout the day. So if I know a person is in at half past 10 and I've got to talk to them in a week's time or whatever, the [special content] will tell me what I spoke with them about — and to give them an e-mail because they are going to be in whenever. Then, from here, when the call flashes up, I click on that record and it will come up with their record — their details, their address, the history of what we've done before. Then I can plan what I'm going to talk to them about before I ring them up ... then in a month's time or a week's time — or whatever — it flashes that.”

— Purchasing officer at a high-tech company, London

Project folders and dedicated organizing systems become outsourced knowledge bins to help individual workers straddle various projects. For example, a financial analyst first describes his folder system for projects, but then goes on to describe his office white board, which serves as a representation of critical priorities that need to get done. Each short note on the board is a hurdle in his mind until it is addressed and completed.

### **Organizing Features Enhance and Extend Memory**

For many knowledge workers, memory aids are essential because it is just too difficult to remember everything. Working across multiple work rhythms and engaging in diverse activities ranging from simple tactical tasks to the details of more complex project work make it hard to keep everything on track and in sync. As one office worker in London put it, “It just flashes up when I need to call a client or do whatever. Remembering is difficult.”

Sometimes work becomes so intense that individual workers lose their direction. One worker describes how his tasks don't change that much, but the intensity of his work makes him forget and lose touch with the rest of his obligations.

“I count on my PC system. I check it, like, every 30 minutes anyway, so I know what I'm going to do today. If I'm busy for, like, an hour, I know I'm going to forget, so I'll go back into the system and check my organizer ... I think the kind of job I do, things don't change. But the work is so intense that you actually do forget. Things don't actually change, because the deadlines are deadlines. If you miss the deadlines, you're dead. I don't want to die now. So I'll go back and check. Yes. That's how I do it. I go back and check my organizer and see what I have to do next. Sometimes when I see myself, I say, I should be doing something now — and I'm racing around. I go in and check what I have to do.”

— Accountant at a large automotive company, London

Visual reminders can be a method for quickly filtering work priorities amidst the clutter or a constant presence that keeps them on track. Many workers find visual memory aids help make their work more tangible. This statement by a controller from Westchester is a good example of how a simple self-directed message can divert attention and help an individual worker keep in step across his or her various work rhythms.

*“ ... You know, if I have a meeting that I can't miss and I want it to be visual, you know, that's my visual representation. I'm here. I mean, sure I'll go in here and look at stuff and I'll play back my messages. But, you know, if I know before the end of the day that I have a meeting with executives of the company or something that I can't miss, come hell or high water, I'll just put [out] an orange or a yellow neon sticky note so as soon as I walk in, it catches my eye.”*

— *Controller at a manufacturing company, Westchester, NY*

Reminders and memory aids help create continuity between meetings and link processes. This worker from London uses red text on his electronic calendar as a visual message to alert him to upcoming meetings that will require his participation and work based on previous meetings.

*“I use it to really remind me to do things that are important — with meetings, just to make sure that I don't forget by the next meeting — because we have progress meetings on how the developments are going. I remind myself that by the next meeting I need to have done this. If I haven't done it, it will come up red. If I haven't done it and I'm scheduled to do it, it will come up red. That lets me know that I need to get on and do it pretty quickly, otherwise I'll get in trouble.”*

— *Computer programmer at a Web software company, London*

Color coding can become even more sophisticated when individuals or teams develop their own coding prioritization schemes. This example shows how a quick glance at the colors will indicate the relative priority of several scheduled events.

*“Another neat thing about the Meeting Maker is that — and I just found this out last week — you can actually color code the appointments and the banners and stuff ... you know, I use yellow if it's, like, a tentative. It's like, I want confirmation back that these appointments are actually going to happen. Then, when I scroll down and look a week ahead to see what's going on, when I see a yellow, it's kind of like a reminder to me that I have to call them to follow up with these guys, or something. It's a really good tool. It really helps a lot.”*

— *Executive assistant to a CFO at a mid-sized Internet company, San Francisco*

### **Humans as Thought-Organizing Tools — Routers and Buffers**

People function as routers, passing knowledge from one person or location to another. They also operate as buffers — screening and filtering to get knowledge out to the appropriate people, and to keep people from having to deal with information that is irrelevant to their work.

Many administrative assistants and secretaries, in addition to their own personal tools, have shared desk calendars in which others write organizing and coordinating information. This can include tasks for the administrator to do, or information about workers' whereabouts that the administrator is responsible for tracking. In the New Economy, administrative assistants take on a routing function, becoming a human rudder to help knowledge workers navigate.

In a press casting agency, a client relations manager describes how she acts as a funnel for information from clients to other people in the agency. Technology could play this role (a voicemail system, perhaps), but she performs the routing role. She uses her own organizing system of Post-it notes to capture information, act on it, or pass it on.

*“Also, after I put the phone down, I’m going to have to feed that information to at least two or three other people. So I’ve got to make sure I’ve got a record of something somewhere. I’m a big user of Post-it notes. If I’m on the phone to a client and I’ve got to remember that I need to speak to whoever about that, I’ll quickly write a Post-it note and stick it on my screen so I remember as soon as I put the phone down. With Post-it notes, it’s something that literally needs to be done straight away. Because I deal with so many things at one time, I do need to use resources like that. I can get that done and then it goes in the bin.”*

— Client relations worker at a press casting agency, London

This legal assistant acts more as a buffer than a router, responding to urgent requests from lawyers in the office. Her activities shield the lawyers from disruptions, filling information gaps so they can act at their optimum capacity.

*“That’s me walking around all day, running around. And when I am at my computer, that’s when I’m entering attorney, legal time, costs ... but it’s like a Girl Friday ... I would drop ... I’ve never had a day in nine years that’s ever been the same. I mean, ‘Drop everything, take this guy to the airport.’ ‘Where are my baseball tickets? Go out to the house and find them.’”*

— Legal assistant at a law firm, Dallas

### **Self Messaging: You Are One of Your Most Important Messaging Partners**

Self messaging has emerged as a major form of communication and as a significant organizing strategy for knowledge workers. Self messaging is critical in all organizing practices, including: knowledge indexing, automated messaging and memory aids.

Messaging to the self helps workers to organize multiple responsibilities and lets them keep up with the multiple rhythms of work. Workers use self messaging to bridge the gaps between their “personal self,” “office self” and “mobile self.” Coping with the distributed self is a form of “invisible” work (work not seen or valued by the organization) that can be managed in part through a variety of self messaging strategies. Some workers even develop their own language or shorthand code to communicate with themselves in a brief, effective manner.

*“But I just need little things to jog me. A lot of it doesn’t make any sense at all when you read it. There’s no format. It’s always ‘G.T.’ or ‘L.T.’ Whatever it is. But you recognize what’s what ... You don’t have to write in detail.”*

— Accountant at a large automotive company, London

While self messaging does increase workers’ own volume of messages and therefore might seem to create work or be a waste of time, it simultaneously helps workers to manage their work and stay organized. It not only helps workers to manage the quantity of work and messages but also helps them set priorities, keep in sync with the flow and rhythm of the larger work system and juggle multiple communications channels. Thus, the organizing and

prioritizing that workers do through self messaging can actually reduce the sense of being overwhelmed or overloaded that often plagues workers across all levels of a company.

Self messaging also can help workers organize their thoughts, or substitute for real thinking.

*“ ... As things crop up, I go in there [to my calendar] and try to schedule it as much as possible ... like a reminder note to myself. Sort of key words or a little note that will give my head some indication of what I need to do.”*

— *Computer programmer at a Web software company, London*

Of course, people have long sent messages to themselves in the form of old-fashioned to-do lists and more recently with Post-it notes. But new communications tools have intensified and enhanced the use of self messaging as an organizing tool. Voicemail and e-mail are now key tools for self messaging. Strategies for self messaging are just as sophisticated and important as those for messaging other people.

*“Driving home, I’m usually writing down stuff. And when I get home, I call the phone mail system and leave myself a message. And if I’m at work, I’ll just e-mail myself ... I try to do separate tasks, separate e-mails. It might be a waste of time, but it’s ‘Run this job’ or ‘Pull this person,’ so as I do them, I can just delete them. But they’re highlighted on my screen or the voicemail button is on. [So I think] let me check it, let me clear it out.”*

— *Funds disbursement manager at a large publishing company, Westchester, NY*

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## **Techniques Help Navigate the Knowledge Landscape**

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Workers have a constant desire and need to understand their relative position within and next steps for their own projects and the company’s strategy. Navigational practices help workers stay on their own path and find the right balance between their reactive and planned work and their tactical and strategic tasks. Messaging and organizing systems help knowledge workers stay focused, meet obligations, and participate in collaborative and interconnected work.

### **Previewing: Tomorrow’s Work Today**

Previewing is a strategy of anticipation. In previewing, workers enact future work in the present as a way of testing out a path. Previewing work enables workers to plan for the next meeting, project, day or week with better foresight of possible disruptions and reactive strategies. This strategy helps workers anticipate potential questions and assemble materials or resources in advance, incorporating them on the front end, preventing reactive work and making room for improvisational work.

The study found that previewing often occurs at the beginning or end of the workday and that it often spills over into secondary workspaces such as the home. Workers develop this practice of previewing work to orient themselves, prioritize responsibilities and keep track of the direction in which they will be heading in the coming days.

As one worker reports, *“Sometimes I take [a printout from Outlook] home and review it if I don’t have time during the day and kind of plan ahead on what ... kind of manage my time a little bit.”*

— *Amber, administrative assistant, software company, Dallas, Texas*

## **Orientation, Direction, Documentation**

Workers use organizing systems in three important ways — orientation, direction and documentation — to stay in sync with their co-workers and the larger organization. These practices allow them to answer the questions that help maintain a sense of progress as they manage multiple short- and long-term projects, and varied work rhythms: Where am I? Where am I going? Where have I been? Workers often ask these questions while previewing.

Tools help workers orient themselves because they let workers know where they are relative to other work tasks, deadlines, knowledge processes or people. Orientation tools range from simple paper methods, such as wall calendars, to more sophisticated electronic scheduling systems.

A financial analyst describes the importance of not losing sight of key work objectives. Messaging tools that provide him with constant direction and orientation are essential to his performance.

*“When it gets too long, to the point that you’re losing sight of what’s on your list ... If there’re more than 10 things on it, I feel like it’s just words, and I’m not going to know what’s important. Things that really need to get done go up on my board ... [if] there’s too many notes on a list, I’ll rewrite it, because then it just becomes clutter and I don’t feel like I can work effectively when I’m looking at a list and being distracted by other words, notes that are on there, completely unrelated.”*

— *Financial analyst at a footwear company, Westchester, NY*

In addition to providing clarity to two important navigational questions — Where am I? Where do I go next? — messaging tools also help clarify the question: Where have I been? Documentation is a third important dimension that workers use to navigate their movement and choices through their work. Sometimes documentation helps to make knowledge work tangible, creating concrete evidence that something has been accomplished. A simple to-do list with checks by completed items serves this purpose well.

*“With a to-do list, when you get a new job to do, you can shove it into the task list. That will set that onto your calendar so that you can look through your calendar and it comes up like a digital file-type thing. On each day you can see what you should have achieved, what you’re supposed to be doing, or how many projects there are.”*

— *Technical information systems director at a large software company, London*

More sophisticated project databases or electronic calendaring or meeting systems also document what has been done, providing workers with an after-the-fact script that narrates their work activities. Sometimes this is important for recounting work progress to other co-workers, colleagues or bosses.

## The Primary Office as Work “Service Station”

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As workers become increasingly mobile, the primary office becomes a place for organizing workloads and maintaining project focus. The primary office provides access to people and key resources that help workers do their jobs. Like a pit stop at the service station before a long road trip, the stop at the primary office enables people to load up on resources — human and technological. It is also the place to get maps, have some coffee, plan your route.

The primary office is the place where workers can access high-quality technology, such as high-speed Internet access, fast color printers and comfortable, networked meeting places to interact with colleagues. One-third of the study respondents strongly agreed that the most useful aspect of their primary office was its access to high-speed Internet connection. Twenty-eight percent strongly agreed that group workspace was its most useful attribute.

*“ ... When I’m in the office, I go in because I need work done and I don’t want the phone to ring. I just want to go sit at a workstation and handle something for, like, the next day. If it’s a big pitch or a big proposal that I need to be there for because some of our designers need to show comps, you know, design work, or I need some advice, then I’m in the office ... I go into the office just because we have an awesome workstation. There’s much more [technology] there ... like nice printers if I want to get some serious work done.”*  
— Sales and marketing manager at a large software company, San Francisco

### **The Primary Office: Command Control Center**

Much of the innovative work and creative thinking happens outside the primary office. According to the survey, 79 percent of respondents considered the primary office space very effective for routine knowledge work. Some 51 percent considered it very effective for reflective, contemplative work, and only 39 percent considered it very effective for creative or divergent work. Many workers leave their primary office to accomplish certain types of tasks (e.g., reading and concentrating), to screen out distractions and create an environment for focus. They often leave behind communications tools intentionally to create this space.

The primary office provides a place to regroup and to reconnect the distributed selves: “mobile me,” “office me” and “home me.” It is the place to make work concrete and tangible — where workers can catch up, plan and orient to the next set of tasks. The primary office is like a command center, where much of the organizing and navigating work described above is done. While some organizing and navigating tools travel with mobile workers (e.g., PDAs or laptops with calendar software and address books), many stay in the office.

For some workers, their desk becomes a core organizing tool they refer to as they move through their work day. As work becomes more flexible and multi-locational, key objects such as the desk, white board, credenza and other furniture may increase in importance as organizing tools for individuals and their coworkers.

*“The to do list — I put out a lot of fires, so I’m always multi-tasking and prioritizing as the day goes on. So my desk has my own little organizational structures. As far as paper goes, I try to minimize the use of paper.”*

*— Portfolio manager at a large software company, San Francisco*

### **Portable Tools can Lead to a Stationary Workstyle, and More Messages**

For some workers, more technology has meant less mobility rather than more mobility. The anywhere, anytime work mode that new technologies afford allows some workers to work without ever leaving their desks. While much attention has been given to the new mobile lifestyle enabled by cell phones, PDAs and laptop computers, it is important to realize that all of these tools can also make workers more stationary. Workers who can send faxes and e-mails and call people without leaving their desk often become more stationary rather than more mobile. A lot of work that used to be done face-to-face is replaced by extended e-mails, voicemails and instant messaging that increase messaging volume and keep workers in one place.

### **Home: A Buffer Zone for Invisible Work**

The changing role of the primary office reflects the changing role of the home. Many people now work at home as official telecommuters, or unofficially. Many knowledge workers do the invisible work — organizing, navigating and learning — at home. Home has become a buffer zone, not only for the overflow of work and previewing, but for keeping up with technology and fine tuning the social network.

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## **It’s Not About Tools, It’s About Features**

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As technology floods the workplace, individual features are becoming more valuable than the tools themselves. Workers are stripping products to their feature “DNA” — evaluating which feature will help them accomplish each task. Once this is established, workers learn and adopt the useful features as needed.

As features have become increasingly important, individual features have migrated across tools. For example, many different tools — from PDAs to desktop software programs to cell phones to voicemail systems — now have organizing features, such as calendars, reminders, to-do lists and phone books. This has further reinforced the idea that features, not tools, are the important units.

*“And I thought it [the ‘vacation’ feature for e-mail] was a great thing, because if you’re not calling somebody, and they change their voicemail ... I had never done that to my e-mail. So somebody’s not calling me, or sending me e-mail — they have no idea if I’m out for the day or a week.”*

*— Financial analyst at a footwear company, Westchester, NY*

Workers bundle features with each other across tools to solve problems. They may, for instance, combine their electronic calendar feature with Post-it notes on their computer and the to-do list feature on their PDA to ensure they are on time for meetings. They also modify tools by filtering out features they don’t need.

*“There’s a feature in there for reserving conference rooms. That’s more of an admin function, so I would never get into that. But booking time, or making an appointment with someone, or reminding them of little things to do ... I just kind of modify it to fit my needs. I don’t need the admin part. And I just played with it. Then I play around until I find something I want.”*

— Accountant at a large company, Westchester, NY

### **A Subset of Features Works Well for Each Individual**

Individual workers use a subset of available messaging features that work well for their tasks and relationships. In this year’s corporate study, for office workers in the United States and Canada, 46 percent and 31 percent reported that they get the most value from a few basic features of their e-mail, voicemail or cellular phones. While some may select different features as the most important ones, there are some basic categories of features that seem to be critical. In last year’s report, we discussed screening and filtering as a messaging strategy. Features that supported this strategy were particularly useful to workers. This year, we found that the features that support the following types of functionality are particularly useful to office workers:

- *Syncing* to reconcile with a larger or updated set of information or data, such as PDAs or cell phones that can update workers’ information.
- *Information portability* to support the transfer or mobility of data for multiple-location work, such as forwarding features, call transferring, remote retrieval and 800 numbers.
- *Just-in-time information* to provide appropriate information in context, such as pop-up windows for help, alarms or signals in calendars and automated e-mail.
- *Tracking or monitoring flows* to allow individuals to become aware of incoming messages or see the flow of messages that relate to other projects or tasks, such as the whisper function on advanced phone services or group calendar features.
- *Screening and filtering* to avoid unimportant messages and identify important ones, capabilities such as caller ID, message codes and a “do not disturb” key.
- *Customizing* to make messaging more personal, such as changing rings, address books, private calendar features and auto redial.

## Just-In-Time Feature Learning

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Learning to use new messaging and organizing tools is rarely a planned process — instead, it happens in a just-in-time fashion. The ability to learn new features is limited both by time pressures and human limitations — the rate at which people can absorb new information. Workers calculate the benefit of learning the new feature versus the time it will take. Just-in-time learning lets workers fit learning features into schedule and memory constraints. Yet many workers fear the feature treadmill and worry about feature escalation.

Office workers see the introduction of new technologies as inherently disruptive because it requires a learning curve that draws time and energy from so-called “real” work (the tasks included in job descriptions and rewarded by the organization). Many office workers try to minimize this disruption by learning new tools piecemeal — feature by feature — as needed.

*“It’s on an as-needed basis ... You come across something in your day and you think, Wouldn’t it be nice if ... Then you look at the specs and see what it has available to you. So it’s like, ‘I’m sure one of these things ought to be able to do that.’ And then, so you just kind of play around to see what it is.”*

— Executive assistant at a small Internet company, San Francisco

As a result, office workers have a lot of partially used technology. Workers generally feel they get most of the value out of a small subset of the features — the “80/20 rule.”

*“I think, for me, I have to acknowledge — and I think, well, this is all I’m going to be able to use this for. All this other stuff means nothing.”*

— Executive assistant at a small Internet company, San Francisco

### **Features Learning often is Invisible Work**

Like messaging and organizing, learning and teaching tools and features typically have been invisible work. Learning and teaching both take time and are important types of work, but are perceived as interfering with real work. Thus, they are taken-for-granted work, but they can be very satisfying, both intrinsically and when they are unexpectedly appreciated by others.

The process of learning new tool features is typically a social process in the office. Workers interact with others frequently in the process of learning. “Learning work” has social value for organizations — a value that is often underestimated.

### **Learning Features Builds and Depends on Social Capital**

Workers learn a lot about features in the process of building their social networks, and they build a lot of social networks in the process of learning about features. The process of learning features has social value, building new “social capital” for the individual and the company (people who are known for their expertise and for having good reputations and positive relationships are described as having social capital.). Features learning, messaging and organizing all support and are supported by the networks that are crucial to innovation, delivering long-term value (despite traditionally being invisible work).

Learning new features is deeply embedded in the social networks of the workplace and beyond. Friends and family, including children, often play a role in the learning process. Individuals use their networks inside and outside the company to gain new knowledge about features.

*“You call friends sometimes, too. Do you use e-mail for this? Or do you have this e-mail feature? There are so many programs out there. There’s Outlook, there’s cc:Mail, just different applications. Some are better than others. So you’ll call friends, ask colleagues, that sort of thing. And find your way through it. If you have questions, they can probably figure something out.”*

— *Financial analyst at a footwear company, Westchester, NY*

Knowledge of new features builds individual reputations in social networks. This reputation can both grow a network and strengthen existing ties, reinforcing a worker’s “personal brand” and increasing credibility.

*“Well, a lot of the stuff I do is voicemail intense ... I kept asking, ‘Isn’t there, like, a stop or a reverse, because ... ?’ ‘No.’ So you had to look through the whole message again and again ... Finally, I said, ‘This is weird. There’s got to be something.’ I started punching buttons to see what all it would do ... I did figure that there was a reverse and a fast-forward feature on it. So ... but it wasn’t written down anywhere. It was kind of an awkward thing. But I was king of the hill that day, when I figured that out! [laughter] People were like, ‘What’s that feature to do this?’”*

— *Male respondent at a small company, San Francisco*

### **Learning Messaging Features Generates Additional Messages**

In the process of learning the features of their tools, workers exchange messages with a variety of people, contributing to the overall number of messages that workers send and receive daily.

*“I ask people all the time, whoever’s the closest. Or whoever you think would be knowledgeable on that particular thing that you’re going [to do]. I ask everybody.”*

— *Administrative assistant at a small software company, Dallas*

Much of the communication happens by tapping co-workers on the shoulder, calling or having the IT person come over — or even getting a whole group of co-workers together informally to practice a new technology.

*“In the position that I am, a lot of people ask me how to use this, or how do you do this, or how do you put a return receipt on it, or how do you change the layout of it, or the font in it, or whatever ... People identify me as someone. I’m not really involved in the mail process of things. It’s always more on the database side of things. But people know that I developed this or that. Or it’s easier to shout across the floor than to pick up the phone and ask someone else.”*

— *Technical information systems director at a large software company, London*

### **Informal Technology Mentor Roles Provide Just-in-Time Learning**

New roles related to features learning and teaching have evolved in the workplace. Some roles are informal, like the technology “den mother” who volunteers to explain or adjust tool

features for co-workers; other roles are more formal, like IT roles. Often the informal roles are more effective than the formal roles in providing just-in-time learning. There are many types of informal experts who share knowledge and pass on insights.

## **Feature Learning is Personal**

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Office workers use many strategies to avoid frustration and disruption when learning new features. They use these strategies to learn the features they need to know.

Workers perceive the feature sets of most tools to be unmanageably large. Time constraints and memory overload often mean that only a few can be learned effectively. Fortunately, many workers feel that this small features subset provides most of the value they need from their tools.

Individual workers have different learning strategies — each worker uses his own highly personal set of preferred strategies. Some like self-teaching strategies; some prefer learning from others; some use both. Some teach themselves by:

- Reading manuals
- Trial and error
- Playing around
- Finding “favorite” features from another tool
- Practicing alone
- Surfing the Internet or intranet
- Stumbling on things through happy accidents
- Getting stuck

Some learn from other people by:

- Asking co-workers
- Asking friends and relatives
- Attending classes
- Observing co-workers
- Learning team rules
- Leveraging learning opportunities (e.g., when something is being installed)
- Teaching others
- Shadowing others
- Practicing with others

As one worker in a small San Francisco company put it, “See one — do one — teach one is the best way to hold that piece of information.”

The most common self-teaching strategies were playing around with devices, learning accidentally and bringing learning work home. The most common strategies for learning from others were asking co-workers, asking friends and relatives, and practicing with others. These are typically the strategies workers try first before moving on to other ones. Because features-learning strategies are so diverse and idiosyncratic, a single learning resource, like a help desk, may not be the most effective way to distribute knowledge to everyone on a team or in a company.

## Quantitative Data

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- Message Volume is Increasing
- E-mail is Largely Responsible for Increases in Volume
- Workers Still Value Face-to-Face Meetings
- Shifts in the Communications Mix
- The Communications Toolkit Continues to Expand
- E-mail Remains the Newest Tool on Workers' Desktops
- Workers Report Fewer Interruptions
- Tool Use Varies by Country
- U.S. Workers are Intensive Internet Users
- Workers Report More Distractions
- Workers are Learning to Cope with Message Volume
- Project Work and Work Teams
- Communication Preferences by Work Cycle
- Workers Share Information in Electronic Space
- Preferred Tool for Regular Information Exchange
- Communicating Throughout the Project Work Cycle
- Preferred Tool for Project Completion

## Message Volume is Increasing

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The average number of messages sent and received each day continues to increase — growing by a staggering 12 percent in the United Kingdom compared to 1999 — as more U.S., Canadian, British and German workers began using e-mail or increased their usage of e-mail.

*Table 1.*

*Message Volume (number of messages sent and received in a typical day)*

	<u>1999</u>	<u>2000</u>	<u>Change</u>
United States	201	204	+3
Canada	169	160	-9
United Kingdom	171	191	+20
Germany	177	178	+1
France	n/a	165	n/a

## E-mail is Largely Responsible for Increases in Volume

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For the first time, the number of e-mail messages sent and received in the United States exceeded the number of telephone messages. Other countries also experienced a surge in e-mail messaging. For instance, British office workers are receiving, on average, 12 more e-mail messages per day.

*Table 2.*

*Message Volume by Tool (number of messages sent and received in a typical day)*

	<u>United States</u>	<u>Canada</u>	<u>United Kingdom</u>	<u>Germany</u>	<u>France</u>
<b>Total Messages</b>	<b>204</b>	<b>160</b>	<b>191</b>	<b>176</b>	<b>165</b>
<b>Telephone</b>	<b>48</b>	<b>43</b>	<b>51</b>	<b>49</b>	<b>41</b>
<b>E-mail</b>	<b>50</b>	<b>33</b>	<b>39</b>	<b>24</b>	<b>21</b>
<b>Voicemail</b>	<b>21</b>	<b>21</b>	<b>11</b>	<b>6</b>	<b>10</b>
<b>Postal mail</b>	<b>15</b>	<b>10</b>	<b>20</b>	<b>24</b>	<b>23</b>
<b>Interoffice mail</b>	<b>18</b>	<b>14</b>	<b>16</b>	<b>25</b>	<b>16</b>
<b>Fax</b>	<b>10</b>	<b>12</b>	<b>11</b>	<b>15</b>	<b>14</b>
<b>Post-it notes</b>	<b>12</b>	<b>7</b>	<b>13</b>	<b>13</b>	<b>8</b>
<b>Telephone message slips</b>	<b>8</b>	<b>6</b>	<b>11</b>	<b>2</b>	<b>8</b>
<b>Pager</b>	<b>8</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>9</b>
<b>Cellular phone</b>	<b>6</b>	<b>5</b>	<b>8</b>	<b>9</b>	<b>11</b>
<b>Overnight courier/message</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>
<b>USPS Express Mail</b>	<b>4</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>2</b>

Although office workers continue to add to their communications tool kit rather than replace older tools for new ones, electronic forms of communication like e-mail are affecting the overall communications mix. In the United States, for instance, while e-mail communications increased by 15 messages per day, messages sent and received via telephone, voicemail, postal mail and fax all declined slightly.

## Workers Still Value Face-to-Face Meetings

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Face-to-face and real-time interactions are an important aspect of the communications for corporate office workers. U.S. office workers conduct many more scheduled face-to-face and real-time interactions than workers in other countries, indicating that as overall message volume grows, these types of communications remain important, if not, become even more important in the communications mix.

*Table 3.*

*Face-Face, Real-time Communications (number of ... in a typical work week)*

	<b><u>United States</u></b>	<b><u>Canada</u></b>	<b><u>United Kingdom</u></b>	<b><u>Germany</u></b>	<b><u>France</u></b>
<b><i>Total Meetings</i></b>	<b>9.7</b>	<b>6.3</b>	<b>5.7</b>	<b>4.1</b>	<b>3.3</b>
<b>Face-to-face</b>	<b>7.2</b>	<b>5.2</b>	<b>5.2</b>	<b>3.5</b>	<b>2.8</b>
<b>Telephone conference</b>	<b>2.1</b>	<b>0.9</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>
<b>Internet conference</b>	<b>0.4</b>	<b>0.2</b>	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>

## Shifts in the Communications Mix

Although office workers continue to add to their communications toolkit rather than replace older tools for new ones, electronic forms of communication such as e-mail are affecting the overall tool mix.

	United States		Canada		United Kingdom		Germany		France	
	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999
<i>Total Messages</i>	204	201	160	169	191	171	176	177	165	n/a
Telephone	48	52	43	48	51	46	49	50	41	n/a
Email	50	36	33	26	39	27	24	20	21	n/a
Voicemail	21	23	21	22	11	11	6	6	10	n/a
Postal mail	15	18	10	11	20	19	24	26	23	n/a
Interoffice mail	18	18	14	14	16	15	25	27	16	n/a
Fax	10	14	12	14	11	11	15	15	14	n/a
Post-it notes	12	13	7	9	13	12	13	12	8	n/a
Telephone message slips	8	9	6	8	11	12	2	2	8	n/a
Pager	8	8	5	4	4	5	4	4	9	n/a
Cellular phone	6	4	5	7	8	9	9	10	11	n/a
Overnight courier/message	3	4	3	5	3	2	2	3	2	n/a
USPS Express Mail	4	3	2	2	4	2	2	2	2	n/a

## The Communications Toolkit Continues to Expand

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As seen in previous years of this study, the communications toolkit continues to expand. The average number of tools used by U.S. workers grew to over seven. Office workers in other countries are also adopting an expanded toolkit as they gain increased access to a wider range of communications tools and methods in the workplace.

*Table 5.*

*The Communication Toolkit is Growing (average number of tools used by workers)*

	<u>1999</u>	<u>2000</u>
<b>United States</b>	<b>6.3</b>	<b>7.2</b>
<b>Canada</b>	<b>5.7</b>	<b>6.4</b>
<b>United Kingdom</b>	<b>5.5</b>	<b>6.0</b>
<b>Germany</b>	<b>4.7</b>	<b>5.7</b>
<b>France</b>	<b>n/a</b>	<b>5.6</b>

## E-mail Remains the Newest Tool on Workers' Desktops

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E-mail remains the newest tool in office workers' toolkits, with Internet and intranets continuing to make strong inroads into the workplace.

*Table 6.*

*E-mail Remains Newest Tool (percent who have started to use ... in the past year)*

	<u>United States</u>	<u>Canada</u>	<u>United Kingdom</u>	<u>Germany</u>	<u>France</u>
<b>E-mail</b>	<b>28</b>	<b>44</b>	<b>42</b>	<b>20</b>	<b>34</b>
<b>Internet</b>	<b>6</b>	<b>13</b>	<b>19</b>	<b>15</b>	<b>30</b>
<b>Intranet</b>	<b>7</b>	<b>8</b>	<b>10</b>	<b>5</b>	<b>15</b>
<b>Cellular phone</b>	<b>12</b>	<b>6</b>	<b>4</b>	<b>9</b>	<b>4</b>

## Workers Report Fewer Interruptions

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As workers adapt to the nature of the interrupt-driven worker, they report experiencing fewer interruptions on an hourly basis. Across the surveyed countries, the percent of workers reporting six or more interruptions per hour declined.

*Table 10.*

*Fewer Interruptions (percent experiencing six or more interruptions per hour)*

	<u>United States</u>	<u>Canada</u>	<u>United Kingdom</u>	<u>Germany</u>	<u>France</u>
<b>2000</b>	<b>38</b>	<b>38</b>	<b>43</b>	<b>50</b>	<b>43</b>
<b>1999</b>	<b>45</b>	<b>51</b>	<b>49</b>	<b>61</b>	<b>n/a</b>
<b>1998</b>	<b>40</b>	<b>40</b>	<b>42</b>	<b>n/a</b>	<b>n/a</b>

## Tool Use Varies by Country

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For the first time in the United States and Canada, e-mail emerged as the most used tool in the communications tool kit. Every country experienced increased usage of Internet, intranet and cellular phones.

*Table 7.*

*Tool Usage Varies by Country (percent who use “every day” or “several times a week”)*

	<u>United States</u>	<u>Canada</u>	<u>United Kingdom</u>	<u>Germany</u>	<u>France</u>
<b>E-mail</b>	97	97	96	90	87
<b>Voicemail</b>	97	94	59	35	73
<b>Desktop PC</b>	95	96	96	92	96
<b>Internet</b>	84	74	61	61	55
<b>Fax</b>	80	88	88	93	87
<b>Intranet</b>	75	63	59	66	61
<b>Cellular phone</b>	51	33	58	40	41
<b>Laptop</b>	37	28	23	13	18
<b>Pager</b>	25	11	5	4	5

U.S. office workers remain on the cutting edge of technology adoption, and are quickly becoming the most sophisticated users of new office technology like the Internet. For instance, in the United States, office workers bookmark an average of 24 Web sites, indicating a much more regular and intensive use of resources available on the Internet.

## U.S. Workers are Intensive Internet Users

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U.S. workers use the Internet more readily than workers in other countries. This may in part be due to cheap telecommunications costs, though Canada also benefits from cheap telecommunications costs when compared to Europe, yet Canadian workers use the Internet only slightly more often than European workers.

*Table 8.*

*U.S. workers are intensive Internet users (average number of Web sites bookmarked)*

	<u>2000</u>
<b>United States</b>	24.1
<b>Canada</b>	15.4
<b>United Kingdom</b>	12.4
<b>Germany</b>	12.6
<b>France</b>	10.4

## Workers Report More Distractions

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However, even though workers reported fewer interruptions, they are no less distracted by interruptions to their work. The percent of workers who are distracted by interruptions is higher than last year in most countries.

*Table 11.*

*More Distractions (percent who are “distracted” and “very distracted” by interruptions)*

	<u>1999</u>	<u>2000</u>	<u>+ / -</u>
<b>United States</b>	<b>26</b>	<b>32</b>	<b>+ 6</b>
<b>Canada</b>	<b>30</b>	<b>33</b>	<b>+ 3</b>
<b>United Kingdom</b>	<b>38</b>	<b>38</b>	<b>-</b>
<b>Germany</b>	<b>27</b>	<b>25</b>	<b>- 2</b>
<b>France</b>	<b>n/a</b>	<b>31</b>	<b>n/a</b>

## Workers are Learning to Cope with Message Volume

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As communications toolkits continue to expand, and workers adopt a wide range of new tools like the Internet, intranet, cellular phone and handheld devices, they must engage in the process of learning how to incorporate the functions of new tools into their communications practices.

Yet more workers are learning to cope with their message volumes as the table below shows.

*Table 12.*

*Workers are Learning to Cope with Message Volume (percent who responded “I often feel overwhelmed” by the volume of messages received each day)*

	<u>1998</u>	<u>1999</u>	<u>2000</u>
<b>United States</b>	<b>31</b>	<b>25</b>	<b>23</b>
<b>Canada</b>	<b>28</b>	<b>28</b>	<b>21</b>
<b>United Kingdom</b>	<b>28</b>	<b>24</b>	<b>24</b>
<b>Germany</b>	<b>n/a</b>	<b>21</b>	<b>10</b>
<b>France</b>	<b>n/a</b>	<b>n/a</b>	<b>25</b>

## Project Work and Work Teams

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Corporate office workers must balance their time and effort across multiple projects and work teams. In the United States, workers report working on an average of about 17 projects per week and across over seven work teams.

*Table 15.*

*Projects and Work Teams (number of ... in a typical workweek)*

	<u>United States</u>	<u>Canada</u>	<u>United Kingdom</u>	<u>Germany</u>	<u>France</u>
<b>Projects</b>	<b>16.9</b>	<b>13.6</b>	<b>12.5</b>	<b>10.6</b>	<b>9.5</b>
<b>Work teams</b>	<b>7.2</b>	<b>5.4</b>	<b>9.1</b>	<b>2.5</b>	<b>3.1</b>

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## Communication Preferences by Work Cycle

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Given the demands of multi-tasking between projects and work teams, it is no surprise that most office workers have unpredictable work routines. In most countries, over 60 percent of workers disagreed with the statement that their work routine is predictable. In France, where office workers reported the lowest average of projects and work teams, only 45 percent disagreed with the statement.

*Table 16.*

*Work Routines are Unpredictable (share of total that disagree or strongly disagree with statement: "Your work routine is predictable on a daily basis.")*

	<b><u>Total</u></b>
<b>United States</b>	<b>62</b>
<b>Canada</b>	<b>61</b>
<b>United Kingdom</b>	<b>64</b>
<b>Germany</b>	<b>68</b>
<b>France</b>	<b>45</b>

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## Workers Share Information in Electronic Space

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Office workers rely heavily on an electronic infrastructure to share and exchange information within their organization. In France, office workers post and access an average of over 16 documents per day to a company server or intranet.

*Table 17.*

*Information Sharing in Electronic Space (number of documents posted to and accessed from a server in a typical workday)*

<b>United States</b>	<b>13.0</b>
<b>Canada</b>	<b>12.5</b>
<b>United Kingdom</b>	<b>13.8</b>
<b>Germany</b>	<b>14.7</b>
<b>France</b>	<b>16.6</b>

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## Preferred Tool for Regular Information Exchange

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However, for ongoing communications that take place throughout a project's cycle, e-mail emerged as the most preferred communication tool for exchanging information about ongoing work projects.

Table 19.

*E-mail Preferred for Regular Information Exchange (percent who state ... as their preferred tool when giving or receiving input during an ongoing work project or task)*

	<u>United States</u>	<u>Canada</u>	<u>United Kingdom</u>	<u>Germany</u>	<u>France</u>
<b>E-mail</b>	<b>66</b>	<b>62</b>	<b>61</b>	<b>52</b>	<b>46</b>
<b>Face-to-face</b>	<b>13</b>	<b>16</b>	<b>20</b>	<b>13</b>	<b>12</b>
<b>Phone</b>	<b>12</b>	<b>9</b>	<b>14</b>	<b>9</b>	<b>13</b>
<b>Intranet</b>	--	<b>3</b>	--	--	<b>16</b>

### **Communicating Throughout the Project Work Cycle**

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At the beginning of the project work cycle when team members are beginning the process of project development and assigning tasks and roles to various work team members, building a shared understanding about the objectives and goals of the project is very important.

In North America, office workers preferred both face-to-face meetings and e-mail communications equally. While in the European countries, workers reported a strong preference for face-to-face interactions to facilitate interactions at the beginning of the work cycle.

Table 18.

*Building Trust and Understanding (percent who state ... as their preferred tool when developing a new project or starting a new task with co-workers and setting roles and assignments)*

	<u>United States</u>	<u>Canada</u>	<u>United Kingdom</u>	<u>Germany</u>	<u>France</u>
<b>Face-to-face</b>	<b>38</b>	<b>41</b>	<b>49</b>	<b>42</b>	<b>40</b>
<b>E-mail</b>	<b>38</b>	<b>40</b>	<b>36</b>	<b>28</b>	<b>24</b>
<b>Phone</b>	<b>7</b>	<b>5</b>	<b>6</b>	<b>9</b>	<b>10</b>
<b>Intranet</b>	--	--	--	<b>4</b>	<b>8</b>

### **Preferred Tool for Project Completion**

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As project cycles draw to a close, and work team members must coordinate to complete a deliverable, preferences are split between e-mail and face-to-face communications. This may indicate that office workers will shift between synchronous and asynchronous communications depending on the nature of the task and the urgency of the message to be communicated.

Table 20.

*Preferred Tools (percent who state ... as their preferred tool when interacting with your co-workers to complete a deliverable close to a deadline)*

	<u>United States</u>	<u>Canada</u>	<u>United Kingdom</u>	<u>Germany</u>	<u>France</u>
<b>E-mail</b>	<b>43</b>	<b>42</b>	<b>35</b>	<b>25</b>	<b>28</b>
<b>Face-to-face</b>	<b>30</b>	<b>34</b>	<b>42</b>	<b>29</b>	<b>28</b>
<b>Phone</b>	<b>15</b>	<b>10</b>	<b>20</b>	<b>36</b>	<b>18</b>
<b>Intranet</b>	--	--	--	<b>4</b>	<b>10</b>

