Shaping order from chaos: designing effective spaces for the ways people work.

What got us thinking...

Organizations are striving to leverage their knowledge resources to spur innovation and success in the new economy. To architects and designers, this means that being able to create effective spaces — designed for maximizing the management of these office worker information resources — is vital to both their and their company's success.

Designing effective office spaces can bring a company a competitive advantage, particularly if those spaces are created based on original research that indicates six primary information, or knowledge, management styles. Office workers today have more "stuff" to work with; paper has not decreased, as once thought. In addition, office work itself has changed, as evidenced by new uses of e-mail messages. When sorting, people either pile or file, and create intuitive groupings of their work based on time sensitivity and need for access of files. Persistent information way-finding and visible sharing are ways that worker effectiveness and productivity can be enhanced. By implementing a standards program based on the six information management styles, companies can best harness knowledge and help office workers get organized and be more effective at work.

Research, initiated by Steelcase in March 1997, included experts from several organizations. They included IDEO, The Doblin Group, Elab, Archideas, Jump Associates and Otherwise. Studies conducted by Steelcase Marketing and The Doblin Group investigated current trends in work technology, office furniture, office products, distribution, services, interest groups and related professional organizations and trade associations. Extensive visual observations and interviews were directed by Elab, with other members of the consulting organizations.

The second set of primary studies was conducted as a part of the Steelcase Workplace Index of October 1998. It was based on 948 participants (483 men, 465 women — all age 18 or older) who were full- or part-time employees and worked in offices located within the continental United States. A second Steelcase Workplace Index was conducted in 2005.

Facilitating knowledge management: ensuring a company harnesses its competitive advantage

Chaos...

In his best-selling management handbook, *Thriving on Chaos,* Tom Peters portrays many of the challenges facing organizations at the close of the 20th century. Rapid and continuous change. Unpredictability everywhere and always. Unprecedented competitive pressure. The race to innovate. The need to go beyond *managing* change to *thriving* on it — thriving on a seemingly chaotic economic environment. And these challenges were noted before the Internet exploded onto the scene, accelerating the rate of change and turbulence in the marketplace. To thrive on today's chaos, organizations are increasingly looking to leverage the power of ideas as the engine of innovation.

In many ways, making information and knowledge accessible begins and ends with individuals and their workspaces. If the space is designed to be effective, individuals can fully contribute to their company's drive to innovate and compete. Everyone in the organization has to "know what they know" — take in enormous amounts of information and keep track of it so they can access what they need and share it with others. This necessitates bringing a level of order to a chaotic, information-flooded environment.

...and order

"Getting organized" has traditionally been associated with finding "a place for everything and everything in its place." Everyone talks about storage — putting things away in containers, drawers and cabinets, out of sight, out of the way. Emphasis is often on aesthetics rather than function — a "clean desk" represents a disciplined person. Messy desks reflect, well, messy minds. It's no wonder many people begin to feel anxious when the subject of "organizing" comes up.

What happens if we consider organizing the work environment as a strategy for thriving on chaos? If we shift emphasis from simply *storing* information to a focus on effectively *managing* our knowledge resources? What if we say that how an office appears to others — tidy or messy — isn't necessarily a reflection of effectiveness? In fact, what's important is one thing: Can workers access what they need when they need it — and keep the flood of information from overwhelming their ability to work effectively?

Our approach

Two keys primary studies were conducted by Steelcase. One was the periodic Steelcase Workplace Index Survey, last prepared in April 2005.

The second set of primary research was conducted for Steelcase by Doblin Group, IDEO, E. Lab and Archideas. It was compiled from March 1997 to March 1999.

- The way e-mail is used — to manage tasks, keep tabs on contacts, archive files and serve as to-do lists — has changed the way office workers do their jobs.

- Contrary to the predictions of the coming paperless office, office workers are inundated with even more stuff now than ever before.

- Knowledge gains value as a corporate asset only if it is accessible.

- Organization styles differ, though most people are either "pilers" or "filers," and everyone has an intuitive way they stage office work by timeliness or accessibility.

Did you know?

Recent research on how people manage information in the workplace has helped to identify common strategies. The research also validates ways individuals tailor these strategies to accommodate their own working styles. It turns out that thriving on chaos has a lot to do with knowing how to thrive on order.

Understanding the organizing challenge

Today's workers have to manage more in less time — and often in less space. Few are adequately prepared to take full advantage of the knowledge and information that is so vital to their organization's success.

More stuff

Workers today are inundated with information, more than they can readily absorb and manage. Because they have more "incoming," they need to spend more time organizing — finding a place to put things that's readily accessible.

Despite the enormous capabilities of electronic media, paper still abounds. We print multiple hard copies of e-mail notes, attachments and Internet articles: one for the project binder, one for the road. While electronic storage is gaining, it may not have yet won the race. According to a Steelcase Workplace Index study, 6% of respondents said they filed things electronically vs. 82% who store information in both electronic and paper files.

Not only is there more paper and more information, but the size and shape of the media varies widely. Increasingly, people depend on mobile memory devices like CDs, DVDs, memory sticks and/or key fobs, or they need to manage oversized items such as budget sheets, binders, architectural floor plans, drawings and a host of other items.

Is email reducing the volume of paper at your central filing system?
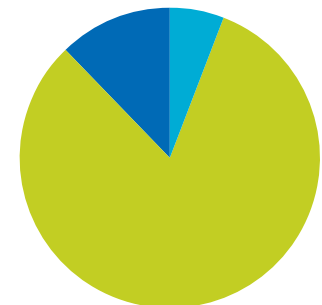
- 6% electronic filers
- 82% paper filers
- 12% other

Changing work

Workers in virtually any occupation have more responsibility, more tasks to juggle in less time. They open files, write "to do" lists, update calendars and pile up papers from previous meetings — all while talking on the phone or checking e-mail. This multi-tasking may be efficient, but it inevitably creates a mess.

Other changes in how individuals work affect their ability to manage the information that they need. Many people now work on multiple projects, playing a variety of roles while

Steelcase Workplace Index
2005 Survey Findings:

Only 47 percent say they have team spaces where then can display work.

Only 36 percent have spaces that support the sharing and exchange of ideas.

While important to 99 percent, only 14 percent say they do not have access to information relevant to do their jobs.

24 percent say their workplace does not enable communication between employees.

23 percent say their workplace does not enable them to be effective on the job.

Steelcase also commissioned a study from an East Coast-based research firm as part of a weekly omnibus survey. This study used a nationally representative sample of 2,096 employed adults (1,155 men, 941 women).

working solo or in teams and groups. Increasingly mobile, their needs for sharing and accessing information have changed. They work here, there and everywhere. Some change workspaces so often they don't even bother to unpack; like frequent travelers they live out of portable cases. Space designers need to help workers access resources and share information with co-workers as they move from task to task, project to project and place to place.

New demands on workplaces

Competitive pressures and the changing nature of work have led organizations to take a closer look at their workplace investment. Many are reducing the size of individual work-spaces — in some cases, as a simple cost-cutting measure. Others are reallocating space to better support evolving ways of working. For example, as space for group work has increased, individual workspace size tends to decrease. This means that office workers must use their workspaces, including storage, more efficiently than ever before. And space designers must provide the proper configurations of space to help support the information management style of the individual worker.

Work staging: how is the information used?

People place urgent material and information they're currently working with on the main worksurface. They keep what they plan to use soon or materials they reference frequently nearby, usually where they can see it and reach it. And they store things they rarely need in places farther away. In other words, they stage information into different areas or zones, based on how often it's used. Steelcase calls these zones Triple A — active, anticipated and archived.

Since work is a fluid process, information and materials move continuously from one zone to another. For example, a file may be currently in use (active), set aside for a meeting scheduled later in the week (anticipated) and then stored (archived) when the project is complete. And if that project resurfaces, the file will once again become active.

The same logic applies to group work. Workers need to be able to take active materials to the group space, to access shared reference materials while working together, and store background materials in a mutually accessible location.
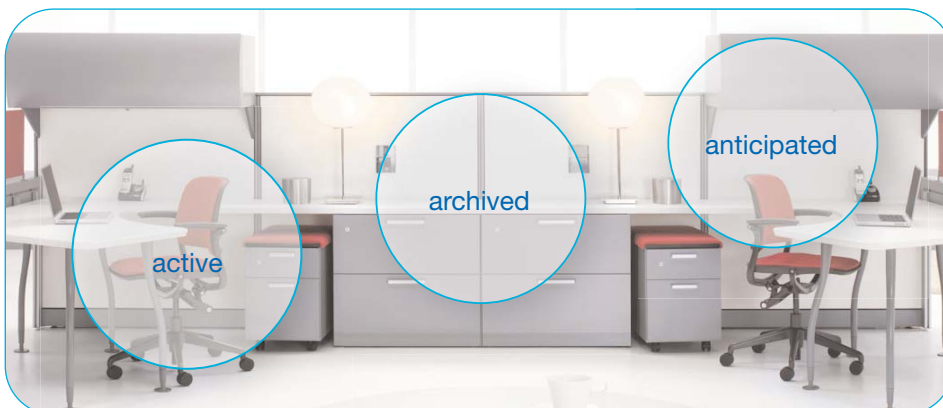
Workspaces can be tailored to support these zones. The size and shape of each zone will vary with each person's information management style. It may also be based on each team's organizing approach and the unique type of work they do. Most people find that when they work in a space with the right support for each zone — and for moving materials between zones — information becomes a whole lot easier to manage and therefore more useful.

A human-centered approach

White collar workers spend an average of 15 minutes a day organizing their work area, according to a 2005 Steelcase Workplace Index survey, down from an average of 20.1 minutes, according to the same 1998 survey. The 2005 survey also found that 96% of workers say they spend at least some time on workspace organization.

Any approach to addressing how workers manage the wealth of knowledge resources available to them must begin with the individual. High-performance workspaces can be designed to support individual organizing practices and to enhance each worker's information management pattern or style. In addition, today's workers need more opportunities to learn organizing skills and to develop their own best practices for managing their resources.

After studying how people manage information in the workplace, we can identify some universal patterns — strategies everyone uses in one form or another.

Time spent organizing space 15 minutes per day in 2005 vs. 20.1 minutes per day in 1998.
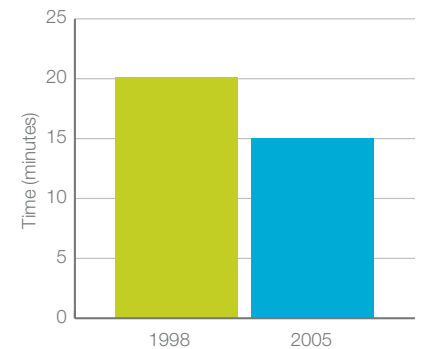
Assessing worker styles: the six information management styles

Effective corporate knowledge management depends on appropriately designing spaces for today's workers. Steelcase researchers identified six information management styles that help categorize how individuals manage the knowledge under their control. These styles can be identified using the Steelcase WorkWays™ survey that employees can take in minutes. By assessing worker styles and creating "typical" space designs for each, the space designer can create spaces that best support worker effectiveness.

To categorize the different styles, researchers first identified how workers garnered, stores and shared information. Using trials to document how information flowed, they were able to assign one of six categories to each worker based on how he or she managed information.
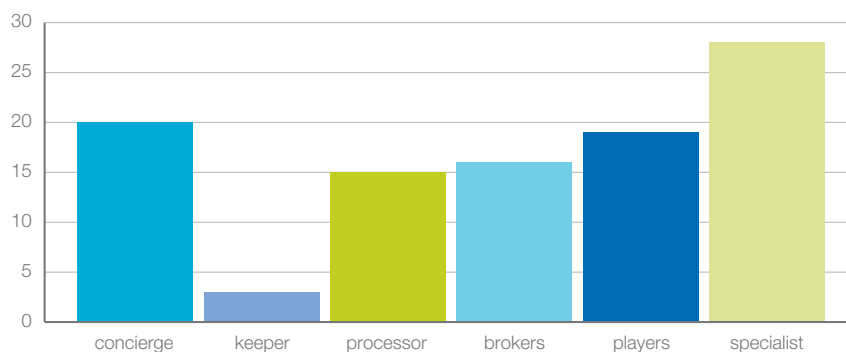
The six styles are Concierge, Keeper, Processor, Broker, Player and Specialist. According to the most recent data available (based on analysis in May 2006 from 6,944 participants), peoples' styles break down as follows: Twenty percent are concierges, three percent keepers, fifteen percent processors, sixteen percent brokers, nineteen percent players and twenty seven percent are specialists.

Let's look at each of them and how a designer might best create space based for each style:

Concierge

Concierges are often responsible for the smooth running of a department and have a wide variety of tasks. They typically have a wide focus and are logistics oriented with work characterized by high interaction. Their information collections help support others' work and call for high security.
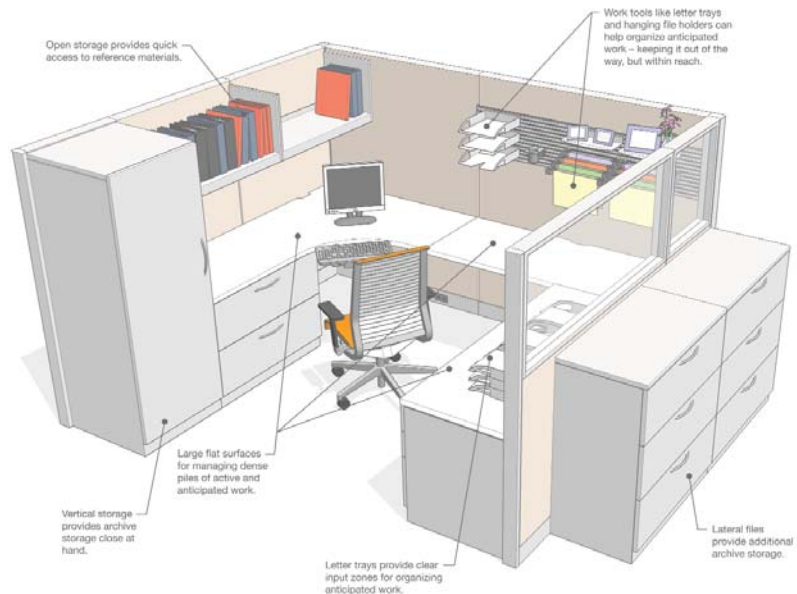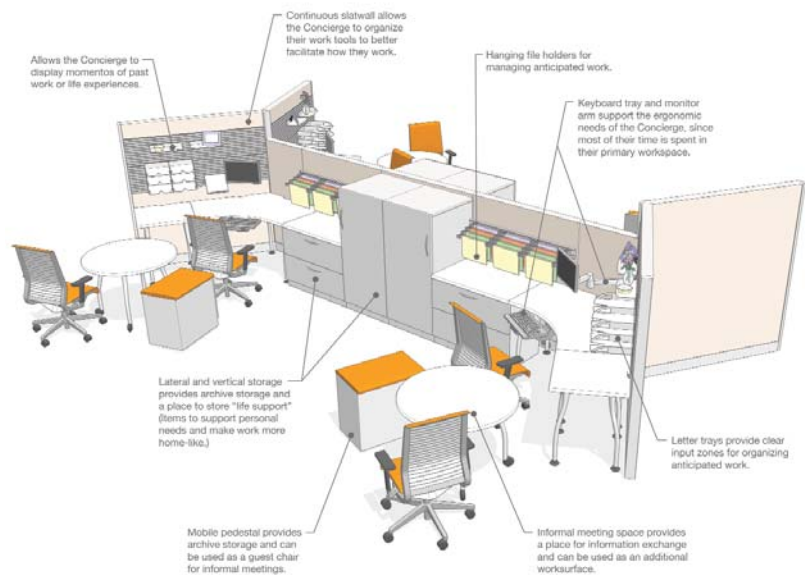
To best support a concierge:

- Provide space for multiple, thin stacks of information
- Supply large active, anticipated and archived zones
- Provide space for informal information exchange
- Create space for "reminders" and "planners"

Keeper

Keepers are responsible for maintenance and access of records, documents, objects and information. They may have inherited a system from a predecessor. With moderate interaction needs, keepers experience many interruptions from brokers, players and specialists. Their focus is typically contextual and they are logistics or protocol oriented. A keeper tends to keep information collections hidden and stored vertically, though removable notes may serve as reminders of tasks pending.

To best support a keeper:

- Provide staging areas for dense stacks of files/boxes
- Ensure that archive storage is nearby
- Supply space for some interaction
- Make labeling and cataloging of information easy

Continuous slatwall allows the Concierge to organize their work tools to better facilitate how they work.

Allows the Concierge to display momentos of past work or life experiences.

Hanging file holders for managing anticipated work.

Keyboard tray and monitor arm support the ergonomic needs of the Concierge, since most of their time is spent in their primary workspace.

Lateral and vertical storage provides archive storage and a place to store "life support" (items to support personal needs and make work more home-like.)

Letter trays provide clear input zones for organizing anticipated work.

Mobile pedestal provides archive storage and can be used as a guest chair for informal meetings.

Informal meeting space provides a place for information exchange and can be used as an additional worksurface.

Open storage provides quick access to reference materials.

Work tools like letter trays and hanging file holders can help organize anticipated work – keeping it out of the way, but within reach.

Large flat surfaces for managing dense piles of active and anticipated work.

Vertical storage provides archive storage close at hand.

Letter trays provide clear input zones for organizing anticipated work.

Lateral files provide additional archive storage.

Overhead bin provides storage for support materials and personal items.

Binder holders provide vertical storage for easily accessible reference materials.

Diagonal work tools support the linear flow of the Processor's work.

An additional pedestal can replace the overhead bin in providing storage for support materials and personal items.

Hanging file holders for organizing anticipated work.

Mobile pedestal with cushion provides archive storage and can be used as a guest chair for informal interactions.

Mobile table provides additional space for active and anticipated work.

Letter trays provide clear input zones for organizing anticipated work.

Personal trophies, visible momentos of past work or life experiences.

Vertical tower provides archive storage and an area for "life support" (items to support personal needs and make work more home-like.)

Informal meeting space provides a place for information exchange.

White board for information sharing or display.

Mobile pedestal with cushion provides archive storage and can be used as a guest chair for informal meetings.

Laptop supports the mobile nature of the Broker's work.

Lateral storage for archiving.

Processor

Processors perform predefined tasks on a continuous flow of information. Their work is highly filtered and has a predictable set of inputs and outputs. Protocol is important, and content and action are closely linked. Their tight focus often means little interaction with others. Their collections usually represent projects in progress, along with supporting references. Both hidden and visible files are typically stored horizontally, with notes attached.

To best support a processor:

- Provide space for linear movement of collections
- Create balance between active and anticipated zones
- Ensure storage space for personal items
- Be less concerned about visitors

Broker

Brokers tend to help direct information to those who need it most. With a wide focus and broad scope, their work is highly unstructured, highly interactive and often at the managerial or strategic level of the organization. As their work is so interactive, they often have difficulty finding time to do individual work. Since they are expected to filter information, they must assess and facilitate what needs to be disseminated to others. Most of their files are stored vertically. Process helpers are important and kept close at hand. Also, trophies or awards are often displayed.

To best support a broker:

- Provide large flat surfaces for many small stacks of anticipated work
- Ensure an active work zone, though it can be small
- Provide ample meeting space within workstation
- Supply staging areas for packing and unpacking of mobile work
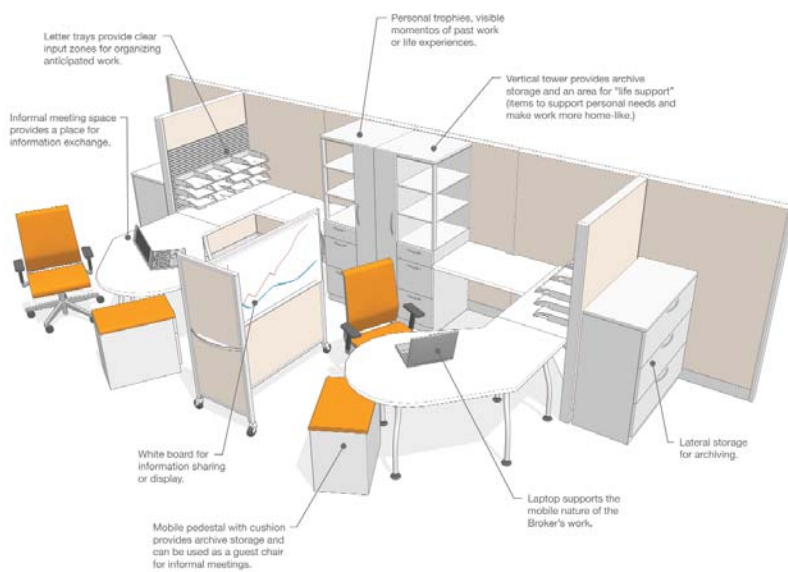
Player

Players bring their specific skill sets and disciplinary knowledge to a team. They often receive filtered information from others and have a strong emotional and professional connection to their field. Their work is complex and contextual in focus. They must manage a large number of collections, which are typically visible and horizontal. Their desktops may serve as their parking lots, with work stacked on either side of the primary worksurface. They have a need for moderate interaction and are involved in highly variable processes.
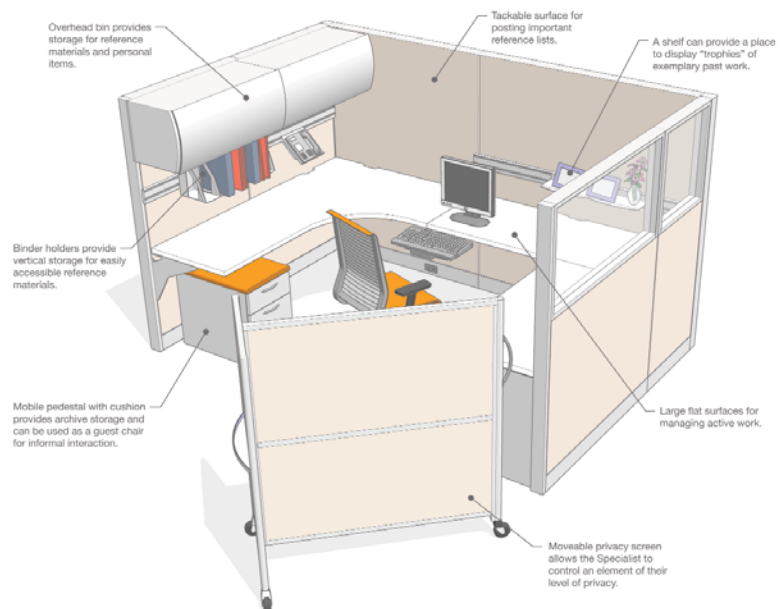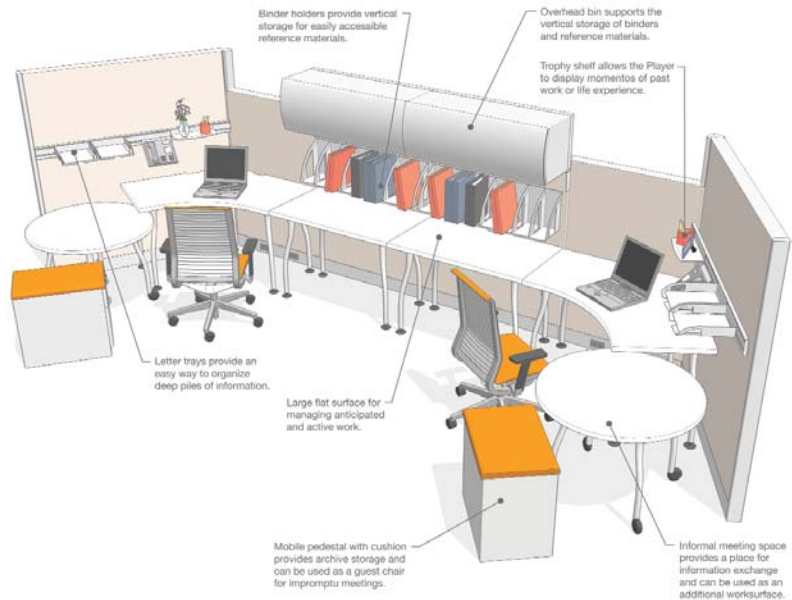
To best support a player:

- Ensure space on worksurfacee for oneor two deep piles
- Provide way to balance anticipated and active work
- Create space for team work
- Provide more shelving for binders than lateral files

Specialist

Specialists have a tight work focus, and often work individually, even if their output is used by a team. They are often shielded from outside distractions so they can stay within their defined processes and concentrate. They often maintain the information under their control longer than others and use their disciplinary and content knowledge more than other types. Their work tends to be more open-ended. Their information collections tend to be visible and flat, though vertical items may include quick lists, references and trophies of past exemplary work.

To best support a specialist:

- Provide flexibility in space as shape of collections varies by project
- Ensure a larger active zone
- Create space for trophies/visible quick reference
- Be less concerned about providing meeting space

Binder holders provide vertical storage for easily accessible reference materials.

Overhead bin supports the vertical storage of binders and reference materials.

Trophy shelf allows the Player to display momentos of past work or life experience.

Letter trays provide an easy way to organize deep piles of information.

Large flat surface for managing anticipated and active work.

Mobile pedestal with cushion provides archive storage and can be used as a guest chair for impromptu meetings.

Informal meeting space provides a place for information exchange and can be used as an additional worksurface.

Overhead bin provides storage for reference materials and personal items.

Tackable surface for posting important reference lists.

A shelf can provide a place to display "trophies" of exemplary past work.

Binder holders provide vertical storage for easily accessible reference materials.

Mobile pedestal with cushion provides archive storage and can be used as a guest chair for informal interaction.

Large flat surfaces for managing active work.

Moveable privacy screen allows the Specialist to control an element of their level of privacy.

By assessing each knowledge worker's information management styles, you can create a set of workspace design templates which best support worker effectiveness on the job. Steelcase offers a brief survey, called Workways™, that identifies the six patterns of information management styles. For more information about the WorkWays Survey, contact wsadmin@workstrategy.org.

Organizing is strategic — and personal

Regardless of their information management styles, people use the same basic patterns for organizing, whether it's at home or at work. But how the patterns are applied and what organizational systems look like is a matter of personal style.

Intuitive groupings

Organizing the work environment may seem daunting to some workers, but it's a matter of applying basic organizing approaches used every day.

For example, people use an array of *strategies* to organize their home lives. They place all the food-related items in the kitchen; they store tools and repair supplies in the utility closet, basement or garage. Within these domains, people tend to sort things according to how they use them: In the kitchen, for example, breakfast food is on one shelf, snacks on another, pots and pans elsewhere. Frequently used items are placed on the counter or in an easy-to-reach spot on a shelf or in a cabinet. This same organizing logic can be applied to the workplace.

In addition, there are countless *tools* to help organize home environments — closet organizers, entertainment centers, CD racks and peg boards. These products are designed to help locate things when they are needed — and keep them out of the way when they aren't. Similar organizing work tools exist for the workplace, and can be planned into workspace designs.
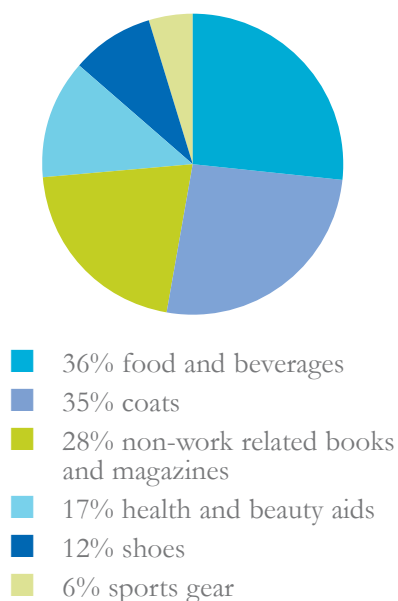
WorkWays survey

Are you looking for ways to improve your workplace, involve the users in the process and define measures for improvement?

Steelcase has developed a survey entitled, The WorkWays™ Survey, a simple web-based tool used to identify how employees work. Steelcase's patented research has uncovered six patterns of how individuals typically manage their information and objects.

Based on a series of 10 questions, the WorkWays Survey can produce a profile for each participant and identifies their dominant patterns of work within your organization. Understanding the individual work patterns of your employees enables designers to create workspaces that allow people to work in spaces that fit who they are and what they do.

Non-work related items stored

- ■ 36% food and beverages
- ■ 35% coats
- ■ 28% non-work related books and magazines
- ■ 17% health and beauty aids
- ■ 12% shoes
- ■ 6% sports gear

Neat freaks vs. slobs

- ■ 30% neat freaks
- ■ 18% slobs
- ■ 52% other

Pilers and filers

To best support knowledge management, it's important to look at the ways people think, take in information and work; not surprisingly, they tailor their organizing strategies and environment accordingly. For example, some people work best by keeping their work visible — arranging piles of work materials in plain view throughout their workspace. Where they locate a pile helps them recall what's in it. Keeping the work visible also helps them keep track of what they have to do.

In contrast, *filers* work best when the desktop is clear of everything except what they're currently working on. What's on top of their desks provides focus for them; clutter distracts them. They keep things they're currently not working on out of sight, relying on an ordering system to keep track of them.

Both styles — filing and piling — help people mentally organize their time, tasks and materials. Each calls for a different type of workspace design.

Neat freaks and slobs

In the 2005 Steelcase Workplace Index Survey, nearly 60 percent of white collar respondents identified themselves as neat freaks and only 2 percent as slobs. More women were likely to describe themselves as neat freaks than men (36 percent vs. 22 percent). Younger workers (ages 18–24) chose neat freak to describe themselves (44 percent) compared to all other age groups (28 percent). In addition, the study found that most respondents (71 percent) stored something other than work-related materials in their work area.
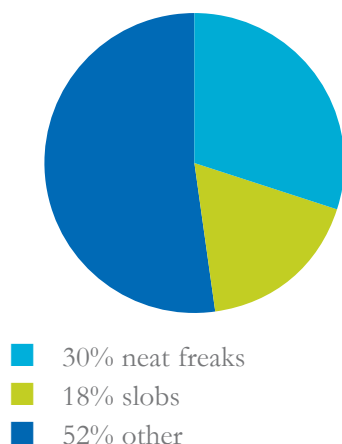
Best Practices

The best practice for organizing is one that reflects the worker's way of thinking and doing. Regardless of the approach, keep in mind that an individual's personal method of organization should help:

- *Separate useful, relevant information from "stuff."* More is not better. Nor is less. Relevant and useful is better.
- *Find what they need when they need it.* Conventional wisdom holds that orderly files are better than "messy" stacks. But the true measure isn't aesthetics — it's whether the approaches help individual workers find things when they need them.
- *Share information.* It is becoming more and more important to share information — in the workspace, in team spaces and in group storage areas.

"The mere existence of knowledge somewhere in the organization is of little benefit; it becomes a valuable corporate asset only if it is accessible, and its value increases with the level of accessibility."

Working Knowledge, Thomas Davenport and Laurence Prusak

What does it mean?

Managing the explosion of information in today's workplace starts with the individual. People need the opportunity to learn strategies for organizing their work, how to apply those strategies to suit their goals and individual work styles, and how to organize their work environments to support their organizing style.

Companies can support this effort. By designing effective workspaces based on the information management style of each individual, the organization can gain significant headway in helping workers manage their knowledge. Organizations can also provide learning opportunities, reinforce the importance of information management to effective job performance and enable their people to tailor the work environment to accommodate individual approaches to organizing.

Four key organizing concepts can help individuals and organizations take a human-centered approach to tailoring the work environment to help people manage their resources:

Staging

• How can they arrange their active, anticipated and archived information to support their work?

Information management style

• Has each worker been assessed on how they use information?
• Have you established a set of standard workspace layouts to support these styles?

Collections

• Are they pilers or filers?
• How do they sort through incoming information and group their materials to support their work?

Information way-finding

• How do they find their way to specific information and materials in their individual or group workspace?
• Does information need to be displayed to be useful?

Organizing strategies — and the workspaces that support them — that fail to accommodate how people naturally manage information are doomed to become one-time "events." People "get organized" — then lapse into their old ways of doing things while the new system falls apart around them.

Taking a human-centered approach not only works better — because it supports how individuals and teams really work — but it's also the only way to truly **sustain** *people's ability to manage all the information they need to do their jobs.*

The very nature of work is evolving in response to trends toward more information and more types of media. In addition, expanded work responsibilities and the speed at which work must be done have accelerated. Clearly, people and organizations that develop sustainable strategies for keeping on top of it all will be well-positioned to fully leverage the power of information.

For further reading

Can den Hoof, B., Groot, J., and DeJonge, S. (2005) "Situational Influences on the Use of Communication Technologies", Journal of Business Communication.

Dawley, D.D., and Anthony, W.P. (2003) "User Perceptions of email at work", Journal of Business Communication.

Kreger, Larry. "Paper and the Information Age." The Information Management Journal, Oct. 1999.

Morgenstern, Julie. *Organizing from the Inside Out.* Copyright 1998 by Julie Morgenstern. Reprinted by arrangement with Henry Holt & Company, LLC.

Pitney Bowes Inc. "Average Number of Messages Received in a Day by the Typical U.S. Office Worker." American Demographics, Sept. 1999.

Seago, Kate. "Whatever Happened to the Paperless Office." Xerox study quoted in The Dallas Morning News, March 30, 2000.

Steelcase Inc. *The Book of Knowledge: Research and Insights on Information and Object Management.* March 2000.

Steelcase Inc. *Information Management [IM] Patterns.* 1999, U.S. patent number US6.976.002 B1 (12/13/2005).

Steelcase Inc. "The Research Connection: The Workplace in the New Millennium." The Knowledge Report. Grand Rapids, MI: Steelcase Inc., Volume V, Issue 2, Winter 1999/2000.

Steelcase Inc. Workplace Index Survey. Grand Rapids, MI: Steelcase Inc., April 2005.

Whittaker, Steve, and Sidner, Candace. "E-mail Overload: Exploring Personal Information Management of E-mail." Lotus Development Corporation. 1996.

Call 800.333.9939 or visit steelcase.com