The Workplace of the 21st Century
Lorraine Maxwell and Franklin Becker

The nature of work and the workplace is changing. Personal computers and laptop computers, cellular telephones, interactive desktop video conferencing, fax machines, voice mail, and e-mail have changed the way we work. Where we work is also changing. Large and small businesses find that to stay competitive they must maintain and improve the quality of their goods and services while reducing costs. Manifestations of these changes have included reducing the number of workers or changing the spaces where people work. Current technology provides several options of where people work. Companies can provide employees with equipment and furniture to work at home. Others may work at satellite offices—work space set up by one company or shared by several companies near residential areas. Employees may work at satellite offices permanently or split their time between satellite offices and home or central offices.

Much of the innovation in where people work, however, has been in the office setting. Some companies have reduced the amount of space per worker because space, and its maintenance, is a major cost for any business. Therefore, any change in the amount of space will affect the company's cost of doing business. Other companies have changed the way they use space (which often, but not always, reduces the amount of space). Changing the way space is used affects the way staff works, and the efficiency and effectiveness of the staff ultimately affect the profitability of the business.

The universal footprint office and the nonterritorial office represent two changes in the way space is used. These two workplace strategies have been investigated by the Cornell University International Workplace Studies Program (IWSP, formerly the International Facility Management Program), formed in 1989 to systematically study how different types of facility innovations affect organizational effectiveness. What is a universal footprint office and a nonterritorial (or free-address) office? How do these strategies affect organizational effectiveness and efficiency? How do they affect employees' productivity and morale? What kind of companies can benefit most from such use of space?
Office size typically is used to denote status and rank within an organization. When an employee is promoted, he or she is given a larger office as one of the benefits. Companies assigning space on this basis often have several sizes of offices. When departments or other subgroups reorganize in such companies, the space usually has to be reconfigured to match the new office and workstation needs. Adoption of universal footprint offices allows a company to reduce costs and disruption every time someone is promoted or the organization changes. With this system, people move but the panels, walls, desks, and telephones do not. This system saves some space while giving each individual a personally assigned office or workstation.

**Nonterritorial office**

The nonterritorial office is a space-allocation system that does not assign a workstation or office on a long-term basis to each individual. The workstations are usually available on a first-come basis. In some cases, they can be reserved in advance, an approach called "hoteling." Nonterritorial offices are most appropriate for organizations with a large number of employees who are not in the office regularly. The workspaces that are provided can vary from enclosed offices to workstations with systems furniture. Various support spaces may also be provided (e.g., conference/meeting rooms) as well as a form of permanent personal storage.

The nonterritorial office can greatly reduce the amount of space a company needs. By not assigning office/workstation space to everyone, less space is needed even when a variety of support spaces are provided. As with the universal footprint office, the nonterritorial office allows for reorganization with minimal space disruptions. The nonterritorial office, however, challenges the time-honored expectation of employees to have an individually assigned desk.

**How these space systems work**

The IWSP has systematically investigated the effectiveness of these two space-allocation systems (Becker, et al., 1990). The research has looked at companies in the United States, Europe, and Japan. How well do these strategies work?

In all cases studied that used the universal footprint office, the implementation process was similar. Rank-and-file staff were extensively involved in the design and layout of the offices as well as the choice of furniture. Universal footprint offices were provided for middle-level managerial and professional staff. To appropriately incorporate technology, all workstations at one site were wired identically and all of the company's on-line systems were available at every workstation. Also provided were meeting/conference rooms and informal gathering spaces for talking and eating. The conference/meeting rooms were wired for computer use at one site, thereby expanding the potential uses of these rooms. These kinds of spaces are often missing in traditional offices because they add to the expense. With the universal footprint system, no additional space was needed to provide these amenities.

The major benefit of this strategy is the reduction of costs associated with space and company reorganization. In one company reorganization, when individuals moved, only the employees' personal items needed to be moved, which saved considerable time and money. Employee satisfaction was generally high in the companies studied by IWSP. Staff especially liked the support spaces (conference rooms, informal spaces). In one case, however, some of the middle-level managers were less satisfied with the universal footprint office than were the professional staff. With more traditional offices, space would denote status, and the managers would have been able to distinguish themselves from those they supervised.
JWSP has also investigated the implementation of the nonterritorial office. In the cases studied, the decision to implement such a strategy was made by top management. The specific form of the implementation, however, was made by the employees who were affected by the change.

The form of the nonterritorial office often depends on the type of company using it. When a management consulting firm decided to use this strategy, it chose cellular offices identical to the partners' offices except that the nonterritorial offices could not be personalized. Each of these offices was furnished identically and stocked with the same set of supplies. When managers were in the central office, they used any available office. In other companies, standardized systems furniture was used for each workstation. In one instance, the workstations were supplemented with support spaces such as dedicated project rooms, conference rooms, informal meeting spaces, quiet rooms, and supervised resource centers. In traditional offices, these spaces would be a luxury difficult to justify; with the space saved by having fewer workstations than staff, they became affordable.

Communications are critical for any business, but they are especially important in nonterritorial offices where employees are not in the same place every day. Employees can be provided with cordless telephones or the office can use a telephone system whereby employees use their on-line computer system to log-in their daily telephone (and thus work place) location. Providing laptop computers equipped with modems and e-mail also aids communications.

Nonterritorial offices often save considerable space. In cases studied by the JWSP, companies reduced workstations numbers by 30 to 60 percent. For some companies, this is the major attraction of this strategy. Saving space alone, however, does not necessarily improve a company's competitiveness. Some companies also use nonterritorial offices as part of an overall business strategy to encourage staff to be more productive (Becker and Steele, 1995).

Employee morale and effectiveness is critical to the success of a company. How does the nonterritorial office contribute to employee morale? Of the sites studied by the JWSP, most employees found nonterritorial offices to be as good as or better than traditional offices. A key to this satisfaction was providing additional spaces (e.g., project rooms) and technology (e.g., cordless telephones, laptop computers). If a company is intent only on saving money and does not provide appropriate support, employee enthusiasm for the nonterritorial workplace strategy, as well as both morale and productivity, may be low.

The JWSP found that successful implementation of a nonterritorial workplace strategy is related to the reasons for initiating such a strategy (Becker, et al., 1996). Some companies were concerned only with cost savings, while others used space reorganization as part of an overall business strategy. Some of the differences follow:

<table>
<thead>
<tr>
<th>Business-Driven</th>
<th>Cost-Driven</th>
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<tbody>
<tr>
<td>Focus was on goals that impact the way business is conducted and the way staff work</td>
<td>Focus was on short-term goals such as real estate costs</td>
</tr>
<tr>
<td>Used space-use strategy as a way of making improvements in the overall system</td>
<td>Did not consider using space to improve overall system</td>
</tr>
<tr>
<td>Changes made in management philosophies and practices as well as changes in space use</td>
<td>No changes made in management practices</td>
</tr>
<tr>
<td>Goal was most effective work environment</td>
<td>Goal was limited to not reducing effectiveness of existing work environment</td>
</tr>
<tr>
<td>Managers educated employees about new workplace strategy before and after the implementation</td>
<td>Little was done before implementation, managers &quot;fartured&quot; staff after implementation to help employees accept changes</td>
</tr>
<tr>
<td>More than 75% of employees expressed satisfaction with changes</td>
<td>Fewer than 50% of staff expressed satisfaction with changes</td>
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</table>

Lessons learned

Based on the case studies, the Cornell research team concludes that either universal footprint offices or nonterritorial offices can be used to help businesses not only reduce space-associated costs but to be more effective. The nonterritorial office is most successful in companies where groups of employees do not spend a lot of time in the office. Such groups include management consultants, field engineers, sales staff, auditors, and project managers. The universal footprint office does not have the same restrictions; it may be used for virtually any type of organization or work function. A summary of lessons learned from the case studies follow:

- Although decisions to depart from conventional office design are usually made by the top management, all staff should be involved in planning the implementation.
- The new offices should be designed and implemented as an integrated system; design, technology, administration, and manage-
ment practices must be considered from the beginning.

- Staff must see some incentive for working in a new way.
- Companies must provide employees with choices including flexible schedules and different work settings (e.g., project rooms, informal spaces, individual workstations).
- Cost reduction is important, but business-driven reasons should outweigh cost-driven reasons for implementing the new workplace strategy.
- New designs should be comfortable and pleasant and include appropriate support spaces.
- Appropriate communication tools must be provided.
- The chosen workplace strategy must fit the needs of the company. No one strategy is appropriate for all businesses.

If your business or organization is considering acquiring new space, renovating, or reorganizing, this is a good time to think about how the physical work settings affect productivity and employee satisfaction.

Prototype being developed

Cornell's IWSP is developing an interactive computer package called Workscape that enables facility managers to anticipate the organizational consequences of selecting one workplace strategy over another. Workscape will describe several plausible workplace strategies and their suitability for various job functions.

The Workscape program could be used for such things as

- making presentations on strategic choices to management;
- exploring alternatives with employees, managers, and other experts in a workshop setting;
- stimulating focused debate about workplace innovations and their likely consequences;
- conducting "what if" scenarios to explore alternative strategies;
- comparing costs of different options and the relationship of the costs to other performance consequences.

Workscape is currently a prototype and not yet available for use by businesses.

If you have questions or would like additional information about any of the material in this issue contact

Franklin Becker, Ph.D.
Dept. of Design and Environmental Analysis
Van Rensselaer Hall
Cornell University
Ithaca, NY 14853-4401
phone: 607-255-1950
e-mail: fdb2@cornell.edu

Lorraine E. Maxwell, Ph.D.
Dept. of Design and Environmental Analysis
Van Rensselaer Hall
Cornell University
Ithaca, NY 14853-4401
e-mail: lem3@cornell.edu

Contact Lorraine Maxwell concerning other topics you would like to see covered in this publication.

References

