HermanMiller

Measures of Success

The Facility's Role in Effectiveness

Measure it, or you can't manage it. The maxim has been a tenet of business life since well before the "balanced scorecard" came along.[1] Until recently, however, the concept of measurement as applied to real estate and facilities focused on the cost of operating and maintaining space, as opposed to measuring the impact of space on human and business performance.

The idea that the design of office space can measurably affect employee productivity, and that it might be possible to measure those effects, is a relatively new one. It was first introduced in the groundbreaking work of BOSTI Associates in the mid 1980s. The new discipline of facilities management, which began with the founding of the International Facilities Management Association (IFMA) in 1983, advanced the idea.[2]

Instrumental in founding IFMA, Herman Miller, Inc., has taken the lead in developing measures that gauge the contribution a facility can make toward realizing an organization's strategic objectives. Herman Miller researchers have developed different types of measurements that help companies quantify the degree to which specific workspace design features affect employee behavior, health, and performance.

This research summary reviews a sampling of projects that Herman Miller researchers have conducted with companies over the last few years to measure the effect of the workplace on business outcomes such as the speed and cost of business

processes and the quality of decision making. Although the detailed results of these projects are confidential, the findings have broad application. The discussion begins with background on the approach Herman Miller researchers use.

Combining Lean Principles and Six Sigma Methodology

In addition to providing a place to work, the intention of most office design projects is to address organizational and business objectives. Those objectives may or may not be well defined—or even explicitly agreed to—by the stakeholders in the new workspace. Further, once employees have moved into the new workspace, there is rarely a systematic assessment of the success of the design response in terms of the original business objectives. Even less frequent is any formal ongoing assessment of the performance of the workplace and facility management services within the framework of business objectives.

Thus, given the increasing pressure on organizations to leverage all capital investments (including buildings and interior space) in pursuit of business goals, the effective design and management of the facility is playing an increasingly important role in corporate success.

Herman Miller researcher Michael O'Neill, Ph.D., and his colleagues have developed workplace measurements that use quantitative behavioral and business metrics, data-gathering tools, and analysis methods. Their approach also incorporates the rigorous data collection and analysis methods of Six Sigma and the bias toward action and participant involvement of the Lean principles that Herman Miller uses throughout its organization. Lean involves a participatory process that focuses on making immediate changes to remove waste, continually improve processes, and create value for customers, whether internal or external to the firm.

The Herman Miller approach also incorporates Six Sigma methodologies that, as in manufacturing, objectively measure the performance of the workspace and supporting processes. In the design and management of the workplace, Six Sigma processes are used to track variations in customer evaluations of the design of the work environment, such as ergonomics, support for communication, and privacy, as well as the quality of facility services. If an evaluation exceeds Six Sigma limits, it suggests that the design of the workspace (or facility management processes) needs to be fine-tuned to better meet user needs. Thus, the assumption is that reducing

variation in these evaluations will improve the quality of the workspace and services.

According to O'Neill, "This approach brings a cross-functional group together to collaborate and share points of view. It yields a measurement process that works with the dynamic characteristics of organizations, and it links investment in design features to human performance and financial outcomes for the business." [3]

The Workplace as a Strategic Tool

Many organizations are changing their views on the role of their facilities as they confront the challenges of doing business in an increasingly competitive global economy. They are faced with the need to incorporate and support the use of rapidly advancing technology, to streamline work processes, and to promote creative thinking and collaborative work.

Central to the Herman Miller approach is the notion that work environments can be another tool, along with people, culture, management structure, and technology systems, that contributes to achieving an organization's goals. Aligning facilities with the firm's

business strategies delivers benefits that go beyond cost savings to enhancing worker effectiveness. As O'Neill puts it, "The cost side of the equation is still important; however, that is only part of the issue. Effectiveness involves more than this. We want to increase the quality of employees' output as well as the amount of work they perform."[4]

It is evident that many organizations are taking a strategic approach to their buildings and furniture. A recent study, for example, found that 60 percent of facility managers, designers, and architects surveyed view facilities as a strategic tool. That compares with 40 percent of respondents who considered facilities a capital asset.[5]

The study also found that respondents in the strategic-tool group were more likely to have incorporated specific objectives into their office projects. These objectives included:

- Increasing productivity and process efficiency
- Reflecting and changing culture
- Supporting the use of technology
- Improving collaboration
- Supporting the flexibility and agility of the environment[6]

The following studies provide examples of how Herman Miller has worked with companies that take a strategic approach to workplace design. These studies relate to the objectives listed above. They provide an empirical rationale for selecting and using office furniture and designing spaces to achieve business objectives.

Increasing Productivity and Process Efficiency

Managers intuitively believe that open and flexible office space, when combined with employee knowledge of how to take advantage of the benefits of that type of space, will lead to increased productivity and, ultimately, to improved business results.[7] It is hard to find studies that can support these convictions with evidence, but Herman Miller has developed methods of analysis to empirically test the connection between workplace design and business process efficiency.

For example, when a professional services organization moved employees from four buildings into one facility that incorporated new furniture and design concepts intended to make the most of the flexibility of the interior space to support individual work and group collaboration, Herman Miller conducted a study to measure the results. The new workspace had fewer workstations than employees, and used a "hoteling" concept in which highly mobile employees could check in to unassigned workspaces as needed.

Employees who were not as mobile were given assigned workstations. In addition, the overall space was sprinkled with a mixture of large and small meeting spaces and supporting technology. These were intended to be used for impromptu meetings, thus enhancing collaboration and the overall efficiency of work processes.

Three groups of employees (a total of 1,135 people) were surveyed at three different points in time. The two experimental groups were made up of participants who moved into the new environments. One of these groups received ergonomic training, the other did not. The third group, whose workplace did not change and who did not receive any additional training, served as the control group. Data were gathered from each group once before the move and training, and twice afterwards.[8]

Using Business Process Analysis (BPA) methods to track the time and costs related to eight ongoing internal business processes, researchers found that the experimental group who received new workstations without training experienced a 5.5 percent reduction in process cycle time. The experimental group that received both new furniture and training in how to use their new workplace reduced their process cycle time by 10.55 percent. Both were statistically significant measures.

Researchers also used compensation data to calculate the cost of each process based on the number of times the process occurs each year. The annual cost savings per employee was $7,500 for the experimental condition in which employees got only the new workspace, and $15,000 for the experimental condition in which employees received the new workspace and training. There was no change in process time for the control group. Further analysis of the data showed that the flexible workspace and the ergonomic training were directly responsible for the process cycle time reductions.[9]

> The experimental group that received both new furniture and training in how to use their new workplace reduced their process cycle time by 10.55 percent.

In another study that analyzed data gathered from about 1,200 office workers, researchers plotted process cycle times for a repeatable business process (Website design and implementation) against an independent assessment of the quality of output of the group responsible for that process. Employees in the experimental group moved into a new work environment designed to foster collaboration. Researchers found that their process cycle time decreased by 7.5 percent while assessment of work product quality increased by a statistically significant amount compared to employees in the control group.[10]

Other studies have shown the effect workspace design has on business outcome measures. At a North American location of a global courier company, researchers gauged the influence of consolidating 360 employees from five locations into a new, built-to-suit structure. The company's real estate group asked Herman Miller to create a strategic plan to document, quantify, and justify the effects of the consolidation and workplace redesign.

Measures showed significant results in two key areas. Decision-making time was reduced by 40 percent. Departmental responsiveness increased by 31 percent. Researchers concluded that 80 percent of the benefits the company achieved at this site were attributed to the interior space design and 20 percent resulted from improved adjacencies due to the consolidation.[11]

When the corporate real estate group of a large financial institution wanted to gauge the effectiveness of new, updated office space on the behavior and performance of employees who manage investment portfolios, it teamed with Herman Miller. Among other factors, the question of whether the new workspace supported the functional and work process needs of employees was critical to answer.

Researchers surveyed workers before they moved into a redesigned space and again after the move was complete. Using multiple regression models to determine if workspace design has any direct effect on these business outcome measures, they found a significant positive impact on two account service metrics that reflect the quality, speed, and accuracy of portfolio managers.

The first of these measures is the total number of accounts (measured on a monthly basis) managed by the group. The more accounts handled, the better the productivity. After the move to the new space, the number of accounts managers handled increased by 89 percent.

The second measure involved the number of reports created by the group on a monthly basis and, specifically, the number of inquiries managers must make to complete them. The fewer the inquiries, the more efficient the process. After the move, the number of inquiries dropped by 35 percent. While these results do not correlate to any specific environmental features or behaviors, they do indicate that the move to the new space was a significant predictor of the increase in these performance measures.[12]

Reflecting and Changing Culture

The effectiveness of an organization and its ability to reach its business goals are strongly influenced by its culture—its attitudes, beliefs, and values. A recent human resources study of more than 400 North American companies found that certain culture-related practices not only correlate with improved financial returns but are leading indicators of increased shareholder value. The practice of creating a "collegial, flexible workplace," was found to increase a company's market value by nine percent.[13]

Workplace facilities can be designed to support organizational human resource practices and to represent an organization's culture both to its employees and to the world at large. Tracy Brower, a workplace knowledge consultant for Herman Miller, says, "Culture is not mysterious. It is something that you can systematically manage by focusing on certain areas." She advocates thinking about "which elements need to be enhanced to get the desired culture."[14]

An organization seeking to change its culture can signal that change through the way it allocates space—private offices suggest an emphasis on independent work, open offices imply teamwork—and by embedding visual cues that symbolize values and attitudes.[15] And the impact of workplace design on culture can be measured, as Herman Miller has shown.

For example, researchers recently worked with a global telecommunications firm to study the effects on employee perceptions of the workplace and their behaviors over the course of a facility redesign project. Researchers surveyed 1,329 employees prior to their moving into the new environment and 1,019 after the move.

The survey collected data on nine different topics, including the impact of the redesign on culture and values. Survey results showed a 21 percent increase in how the new workplace supports culture and values compared to before the move. Significant among the other measures was the ability of the new space versus the old to attract talented people (19 percent increase), to help them identify with the company (14 percent increase), and to help retain talented people (13 percent increase).[16]

> Survey results showed a 21 percent increase in how the new workplace supports culture and values compared to before the move.

Supporting the Use of Technology

For organizations such as global telecommunications companies, there is great incentive to show how they effectively use their own technologies. One in particular knew it must become a showcase for its products and that its facilities had to demonstrate to employees and customers alike how it was "walking the talk."

The firm undertook a redesign to create a physical workplace that would support the company's strategy of supporting mobility for its people, services, and technology. Specific objectives included improving productivity and "creating flexible, mobile, and collaborative ways to work."[17] The workspace was redesigned to provide a variety of nonassigned individual and collaborative workstations and other locations (such as break rooms, long counters, and lounge areas). In addition, technology to support this type of group work and mobility requirements was implemented.

Researchers began a workplace metrics study for this company to examine the effects of the workplace redesign on employee behavior and perceptions of the workplace. They surveyed a random sampling of over 1,000 employees before and after the redesign.

While pre-move responses showed that employees were relatively satisfied with how the former workplace supported individuals and teamwork through technology, the post-move survey revealed statistically significant improvements. After moving into their new work environment, the number of people who agreed with the statement "I have the appropriate technology to effectively get my work done" rose by seven percent. The number who agreed that "My team has the appropriate technology to perform well as a team" increased by nine percent.[18] As an example of how every aspect of organizational change has an impact on every other aspect, the study found a 26 percent increase in agreement with the statement "I believe [our company] is taking advantage of the technology we offer our customers." This increase is significant because employees were very satisfied with technology use before the change. As one employee commented, "We live and breathe our own technology—cool!"[19]

HermanMiller

Improving Collaboration

According to Herman Miller researchers, "A work environment that eases human interaction and promotes a sense of belonging—building social capital—can help people collaborate, perform better, and identify more closely with their organization."[20]

In a study of the effects of a new work environment on 180 employees of a North American apparel manufacturing company, researchers tested the hypothesis that a more open work environment design concept would enhance collaboration and improve internal group work processes. Researchers surveyed two groups of employees at two points in time. One group received the experimental intervention of a new workspace; the other group, which had no changes made to its workspace, served as a control group.[21]

The original workspace was a mix of traditional panel workstations and private offices, with one large meeting space for formal meetings and no smaller meeting spaces for collaboration. The new workspace was redesigned using systems furniture with a very open design and a variety of small meeting rooms that could be used to support informal, unplanned meetings between small groups of employees.

Data were gathered from each group before and after the workplace changes were instituted. A construct representing "workplace effectiveness" was created that included seven hypotheses. Among the variables were:

- "Workspace helps employees feel like team members and enhances participation by team members"
- "Workspace supports collaboration and easy shifts from individual work to collaboration"
- "Workspace supports access to others and contributes to sense of belonging"

Researchers performed a factor analysis on all the variables used in the survey to uncover patterns of response. The results showed a significant 11 percent improvement in employees' evaluation of workplace effectiveness between the control group who remained in traditional workspaces and the experimental group in the new, more open workspaces.

Although the new workspace represented a huge change for employees, six months after the move, 82 percent of the employees, when asked if they would move back to the space they had previously occupied, declined. Employees in the new workspace "experienced enhanced collaboration and group work process, and increased sense of belonging to the organization, due to the effects of the redesigned, highly open workplace."[22] Post-move comments from the experimental group provide another perspective on how the workplace supports enhanced group work process and collaboration:

- "Our functional group has high teamwork needs that are greatly assisted by the workspace."
- "The open design creates opportunities to interact more regularly with individuals outside of my specific team."
- "The setup allows our group to make decisions that normally would take days to contact everyone about, and now we can make a decision quickly and respond to customers in a timelier manner. It also allows us to compare processes and see which is more efficient."[23]

In a similar study conducted for a food-manufacturer, researchers measured improvements in specific design features that support collaboration. These design features included more small meeting spaces located near work areas that could be accessed by employees without reservations. Employees in the new workspace reported a 25 percent increase in satisfaction with the design of meeting spaces and an 18 percent increase in satisfaction with the availability of appropriate meeting spaces within the facility.[24]

> Employees in the new workspace reported a 25 percent increase in satisfaction with the design of meeting spaces.

Supporting the Flexibility and Agility of the Environment

The ability to respond quickly to change is one of the major challenges facing any organization in today's highly competitive global economy. Business concerns must constantly rethink and adjust business strategies to meet the dynamic demands of the marketplace, and, with each successive change, management must reconsider the ways in which work is organized and carried out.

Herman Miller found this to be the case when its workplace knowledge consultants worked with an

international telecommunications company to conduct a Future Pull visioning session. Future Pull is based on the work of creativity expert George Land. It encourages participants to go beyond present constraints and use their imagination to generate a future state in which the problems have already been solved. The process uses a powerful software tool that organizes and processes inputs in real time to help reveal critical facility design and performance issues that can make a difference in the success of the business.[25]

In anticipation of constructing a new office building, the telecom's real estate group sought to identify workplace attributes that would contribute most powerfully to the desired culture. As a result of several Future Pull sessions, three workplace characteristics emerged as most important for participants: 1) work and life balance, 2) choice, variety, and flexibility, and 3) nature and light. The real estate group addressed the second and third concerns by giving people more choices for privacy, meeting, and socializing at work, as well as ensuring ample daylighting and views to the outside.[26]

In another study, researchers analyzed the organizational design and work processes in a nonprofit in order to align the design of the interior environment with the business mission of the organization. When "work environment should support flexible work styles" emerged as a guiding principle for design, Herman Miller recommended a workplace design that could "support employees' need to access the facility in a 24/7 fashion, to work from home or other locations, and other variations of traditional work that vary from the 8-to-5, on-site work style."[27]

This study, along with the others included in this research summary, makes it apparent that the old ways of organizing workspaces are not adequate to support ease of communication, collaboration, and employee effectiveness. New concepts for the work environment are required so that people can work more effectively.

The strategic investments a company makes in its physical work environment are really investments in people. And it is people who represent an organization's competitive advantage in the global economy of the future. The results of these studies show that investments made in facilities can result in significant improvements in group work practices and effectiveness.

Perhaps more important, these findings demonstrate that the physical work environment can be thought of as a strategic business tool, much as investments in human capital and information technology are. These studies provide credible evidence that broad workplace strategies to support behaviors that managers intuitively know lead to effective work actually do increase performance and business success.

Notes

1　Robert Kaplan and David Norton, "The balanced scorecard: Measures that drive performance," *Harvard Business Review*, vol. 70, no. 1, January-February 1992, 71-79.

2　Linda Monroe, "By any other name?" *Buildings*, August 2003 <http://www.buildings.com/Articles/detail.asp?ArticleID=1455> (accessed August 2006).

3　Michael O'Neill, Ph.D., personal interview, September 2, 2006.

4　Herman Miller, Inc., "Quantifying and Fostering Organizational Effectiveness." Research Summary 2004 <http://www.hermanmiller.com/hm/content/research_summaries/wp_Quantify_Foster_Org_Eff.pdf> (accessed August 2006).

5　Herman Miller, "Facility Objectives Survey" Internal Report, July 2005

6　*Ibid.*

7　Herman Miller, Inc., "Effects of Work Environment Design and Ergonomic Training on Employee Performance and Business Process," Internal report, 2003, 1.

8　*Ibid.*

9　*Ibid.,* 2.

10　Herman Miller, Inc., "Effects of Work Environment Design on Employee Behavior and Business Process," Internal report, 2002, 2.

11　Herman Miller, Inc., "Measuring Process and Performance Improvements," Internal report, 2003, 2.

12　Herman Miller, Inc., "Workplace Evaluation: Executive Summary," Internal report, 2006, pp. 9-11.

13　Watson Wyatt Worldwide, "Human Capital as a Lead Indicator of Shareholder Value," 2001/2002 Survey Report, 3.

14　Herman Miller, Inc., "Demystifying Corporate Culture." Research Summary 2004 <http://www.hermanmiller.com/hm/content/research_summaries/pdfs/wp_Demystifying_Corp_Culture.pdf> (accessed January 2007).

15　*Ibid.*

16　Herman Miller, Inc., "Workplace Measurement Study: Executive Summary," Internal report, 2005, 4.

17　Herman Miller, Inc., "Workplace Measurement Study: Survey Results Report," Internal report, 2005, 1.

18　*Ibid.,* 21.

19　*Ibid.,* 44.

20　Herman Miller, Inc., "Effects of New Work Environment Design," Internal report, January 2004, 1.

21　*Ibid.,* 5.

22　*Ibid.,* 1.

23　*Ibid.,* 20.

24　Herman Miller, Inc., "Workplace Evaluation Study," Internal report, February 2005, 2.

25　*Ibid.,* 2.

26　Herman Miller, Inc., "Future Pull Visioning Session: Report of Voting," Internal report, December 2006.

27　Herman Miller, Inc., "The Work Environment as a Catalyst for Innovation," Internal report, 2001, 26.