INFORMATION AND IDEAS FOR CALL CENTER DESIGN AND PERFORMANCE

SCOpE

KSBA Kingsland Scott Bauer Associates Pittsburgh, PA

TAKE ME TO YOUR CFO: CONNECTING CALL CENTER FACILITY DESIGN WITH PROFIT

CAN THE DESIGN of your call center facility actually have a direct effect on your company's profitability? Have you long suspected a connection between design and profit? In simplistic terms, it's logical that a pleasant working environment results in happier employees which, somehow, must help the bottom line. The problem is that somewhere in every decision-making process lurks the CFO demanding a "business-case" (return on investment), analysis of any design solutions that costs more than the lowest cost, baseline call center. After all, that's the way capitalism works — in business, the ultimate goal is profit. If we can't make a direct connection between a business decision and profit, the decision can't be justified.

The issue relative to call center facility design is, how do we prove conceptual ideas in empirical terms that can be understood and approved by our "financial gatekeepers?"

First, let's put the potential of good call center design in economic perspective. In 1990, IFMA (the International Facilities Management Association) and The Electric Power Research Institute completed a study of 70 million square feet of office space that indicated, if the cost of personnel is included, the cost to build and maintain office facilities is only 15 percent of the total, with the remaining 85 percent going to salaries (see chart on page 2). Unfortunately, the facilities management and design professions still focus on the 15 percent associated with construction and operations, while the vast potential for savings associated with the 85 percent salary component, goes largely untapped.

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Some would argue that the ability to influence productivity through design is dubious at best and certainly difficult, if not impossible, to prove empirically. However, in the last 10 years, substantial research has been completed that demonstrates the effect design can have on increased productivity of building occupants. Some examples:

- Springer's *Improving Productivity in the Workplace: Reports from the Field* (Springer Associates, Inc., 1986) describes 48 studies that examine how the physical environment, furniture, equipment, facility management and changes in work procedures affect work performance.
- The Rocky Mountain Institute, in their booklet entitled *Greening the Building and the Bottom Line, Increasing Productivity Through Energy Efficient Design* by Joseph J. Romm, U.S. Department of Energy and William D. Browning, Rocky

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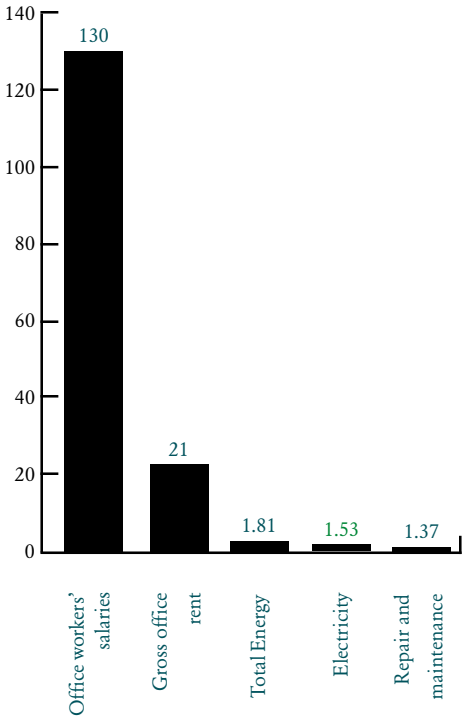
Average Annual Commercial Expenditure
(dollars per square foot)



Source: *Building Owners and Managers Association; Electric Power Research Institute;* Statistical Abstract of the United States, 1991.

Mountain Institute, 1994, describes eight case studies of companies that undertook the challenge of increasing the energy efficiency of their buildings. All projects were successful in reducing energy consumption; however, an unintended corollary result was a substantial increase in occupant productivity that, in economic terms, far outweighs the value of the energy savings.

- Springer studied the impact of ergonomically designed furniture on performance and productivity of VDT operators at a major insurance company, which concluded that the best ergonomic furniture had a 10 to 15 percent performance improvement over normal conditions, with one-third of this attributable to improved seating. [Springer, T .J. VDT Workstation: A Comparative Evaluation of Alternatives, *Applied Ergonomics*, Volume 13, Number 3, September (1982), pp. 211-212.]
- Aetna Insurance has completed several before and after studies of upgrades from open, bullpen-furniture arrangements to enclosed cubicles. Productivity increases ranged from 5 to 21 percent.
- Michael Brill, president of BOSTI, has conducted research on office productivity for more than 15 years. His research considers a collection of 18 "facets" . . . things like physical enclosure, aesthetics, privacy, furniture, status, communication, temperature control and lighting. Data obtained from research involving some 8,000 workers in 80 organizations suggest that the theoretical upper limit of benefits from "perfect" workspace could be as much as 20 percent of annual salaries. (Brill, M. with Margulis, S., Konar, E. and BOSTI, *Using Office Design to Increase Productivity*. Buffalo, NY: Workplace Design and Productivity, Vol. 1, 1984, Vol. 2, 1985.)

These are scientific studies, empirically defensible, that demonstrate the phenomenal potential of increased productivity. Let's look at how productivity might impact a call center by "doing the numbers" with a call center example. Although call center personnel, density, and compensation varies drastically, let's assume a 30,000 square foot space, populated by 300 individuals who make an average yearly compensation of $20,000. Our experience indicates that, depending on a variety of factors, the cost to "fit-out" office space for call center use can range from $22 to $38 per square foot. Assuming the average cost of $30 per square foot is borrowed at 9.5 percent for 10 years, an increase in the staff productivity of 15 percent will pay the debt service for the entire construction cost necessary to improve the space for call center use.

The question is, how can this information be used to convince management that good call center design has a profitability payback. Three steps are necessary:

- Understand the elements of good call center facility design.
- Connect those elements with valid research.
- Do the numbers and calculate the return on investment.

What is Good Call Center Facility Design?

Call centers are perhaps among the most complicated business units to plan and implement. They require introspective corporate strategic planning. They involve unique human resource considerations and make use of advanced communications hardware and software technology. Although design needs for call centers should respond to specific situations, there are some universal components to good call center facility design.

- Lighting is critical. The most common physical problem in keyboard-intensive environments is eye strain. A computer screen acts as a mirror, primarily reflecting the ceiling surface. Lighting must be designed to provide uniform ambient illumination at levels high enough to prevent extreme contrast, but low enough to reduce glare.
- Typical power requirements, such as surge protection and uninterrupted power supplies, apply to call center design, in addition to more sophisticated issues, such as power harmonics. Computer transformers tend to shunt a portion of the electronic sine wave, which finds its way back to the main transformer, multiplies and disturbs overall harmonics.
- HVAC (heating, ventilation, and air conditioning) systems designed for typical office space (particularly before the 1989 revisions to the American Society of Heating, Refrigeration and Air Conditioning Engineers [ASHRAE] Code 90.1) are often inadequate for call centers because of their higher density of both people and computers.
- Ceiling height should increase as floor size increases. Large spaces with low ceilings often feel claustrophobic (higher ceilings are also beneficial for penetration of natural light into the space and even distribution of artificial light).
- Proper ergonomic design and training provide excellent opportunities to reduce health care costs and increase productivity.
- Acoustics has been described as the "last frontier of modern office design." There are compelling reasons for open-plan workstations in call centers which, combined with constant verbal communication, make acoustical design a critical challenge. Absorptive surfaces, sound masking systems and thoughtful space layout can go a long way in improving acoustics.

Once the components of good call center design are understood, it is necessary to make a business case for incorporating them into the design solution. An excellent example is ergonomics. The cost to provide good ergonomic support is minuscule compared to the benefit. Since we can connect ergonomics to relevant research by citing the Springer study mentioned above, let's assume the lower number of a 10 percent productivity increase with "ergonomically designed furniture." The cost to provide these amenities includes the following (see chart at right):

Chair	**$ 550**
Adjustable Monitor	**$ 30**
Adjustable Keyboard	**$ 120**
Footrest	**$ 50**
Total	**$ 750**
Call it	***$1,000***

ROI Calculation/Ergonomically Designed Furniture

The return on investment calculation would be as follows:

a)	Cost of Improvements (from above)	$ 1,000/person
b)	Debt service to borrow cost of improvements (assume 9.5 percent over 5 years)	$ 252/person/year
c)	Average DPE (direct personnel expense)	$ 20,000/person/year
d)	Productivity increase (from Springer study)	10 percent
e)	DPE savings due to productivity increase [(c) x d) / 100]	$ 2,000/person/year
f)	Return on investment [(c) / b)]	793 percent!

Other return on investment calculations produce similar results. Personal Environmental Modules cost about $1,500 each but represent a return on investment of over 300 percent. The return on investment for workstation panel heights ranges from 300 to 900 percent, depending on the study cited.

Even with these numbers as justification, skeptics will feel that either the research is flawed or the numbers are simply too good to be true. There are also decision makers who simply don't have the additional money to spend or don't want to spend it. In the final analysis, the underlying argument relates to risk versus reward in business. Risk takers certainly risk failure, but also benefit from the potential for increased rewards. It is, therefore, important to understand your decision maker's attitude toward risk, particularly in light of the competition. Some companies are content to initiate only changes that have been proven in the marketplace, while others tend to be more visionary and willing to assume more risk.

The Future

Most call centers have an "outward focus" where, once a CSR acquires certain skill sets, he or she is encouraged to focus on the customers calling from outside the center. Career advancement involves more formal training to acquire additional skill sets. Then, it's back to the cubes, for more "outward focus."

Current thinking in call center design reflects this process. Call centers include formal (classroom) training spaces and seas of regimented cubicles that, with the exception of access to a supervisor, have no functional relationship to each other. This means that call centers now have a relatively low churn rate (the facilities management term for changing layout configuration) at a time when other high-density office design trends are responding to increasing churn rates by allowing for increased flexibility for change.

As companies increasingly realize the potential for call centers to efficiently provide more complex services to their customers, the result will be a need for more layout flexibility. As centers tackle more complex tasks, classroom education will provide only a portion of the CSR's developmental needs, and the need for informal education derived from communication with fellow workers will increase. The appropriate facilities response will involve the ability to constantly reorganize the space around "service teams" that focus on a specific group of services. Layout configurations should promote informal communication. For example, imagine a cluster of workstations organized around a central conference table that would allow CSRs to confer with each other and their supervisors in between calls.

We feel the best way to "future proof" an inbound or outbound call center is to allow for substantially more layout flexibility than is typical today. Components that should be considered include:

- Uniform, ceiling-mounted, indirect lighting systems that are layout independent.
- Furniture literally on wheels or furniture systems that can be reconfigured overnight.
- Raised floors that allow ultimate cabling flexibility.

Perhaps the best way to put the need for increased call center flexibility into perspective is in terms of how business is evolving. As we move toward the millennium, successful businesses will be knowledge-based and must have the ability to change quickly and efficiently in order to survive. As call centers become an increasingly integral part of a company's success, they must also have the ability to change at the "speed of business."

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