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**THE IMPACT OF THE WORKPLACE ON EFFECTIVE EMPLOYEE  
PERFORMANCE IN CORPORATE AMERICA**

**BY**

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**Submitted in partial fulfillment of the requirements  
for the degree of Master of Arts in Corporate and Public Communication  
Seton Hall University**

**2001**

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## Chapter I

### Introduction

The underlying theme in "Corporate America" is the desire to compete. The competitive spirit drives most Americans unlike any other civilization on the planet. Americans want to be the best, to look the best, and to have the best of everything. However, the United States has a culture that desires the best of everything without having to do anything to attain those goals. The corporate environment is not too much different than the social culture. The corporate climate has a culture that wants the appearance or allusion of superiority. Along with the appearance of success must go the appearance of the physical work environment. The office building or office park appearance must match the ego of the developer and owner. The office environment has, in most cases, never been designed for anyone other than the developer or owner. The time has come for "Corporate America" to roll with the winds of change and adapt a work environment that is designed for and around the proper audience. "A work environment's reason for being is to support the people who work in it" (Anonymous, 2000.

<<http://www.workstage.com> . [Homepage]).

The corporate real estate business has outgrown many American cities. The trend, over the past 10 to 15 years has been, to move to the suburbs to an "office park" environment and out of the high-rise office building. The corporate culture has also made adjustments recently, in that its focus is moving towards the idea of teamwork. "What a modern office must be is a work space designed to effectively use new and emerging technology while accommodating changing organizational structure and enabling employees to work more as a team" (Overstreet, 1999, p. 2). It has been the understanding of the author that the corporate real estate and construction of office environments has not undergone a significant change in almost 30 years. The author

gained much of the background for the study while being involved with the largest privately owned corporate real estate company in the state of New Jersey, Gale & Wentworth, LLC. The author gained more insight into the industry while involved with Workstage, LLC, a subsidiary company of Gale & Wentworth, LLC.

It is Workstage, LLC that plans to revolutionize the corporate real estate industry. The mission of the company is: "A work environment's reason for being is to support the people who work in it" (Anonymous, 2000). The author used the experience with the company to help understand the delay in modernizing the industry to suit the needs of the ever-changing corporate culture. "Office innovation is the translation of social, organizational and technological developments in office accommodation concepts" (Anonymous, 2000, <<http://www.workstage.com>, [Homepage], Dutch Ministry of Housing, "Spatial Planning and the Environment"). If the Dutch Ministry of Housing were accurate with their research then this study would not be necessary. It seems reasonable to the author that the social, organizational, and technological developments must come together to create an office environment that is suited for the transitional corporate culture.

The corporate culture has continuously changed during the Internet-age. While the technology is unstoppable there is one thing that will almost always be certain - - the need for face-to-face meetings and team collaboration. "If designers were able to work with a clear understanding of the relationships between human behavior and the environment in which they work, they could create office environments where these effects would be both positive and beneficial" (Deasy & Lasswell, 1974, p.9). Deasy and Lasswell further discusses that without such knowledge, "the behavioral effects of design are haphazard at best and disastrous at worst" (p. 9). In a study done by the Building Owner's and Manager's Association (BOMA) it was

found that 98% of employees are concerned with the appearance of the building and 97% are more conscious of the appearance of the common areas other than the lobby (Anonymous, 2000, <<http://www.workstage.com>, [Homepage]). The BOMA survey only goes further to prove that the same “disease” that corrupts the minds of the developers, owners, and designers of these office buildings has corrupted the employees that works within these mirages of employee bliss.

### Research Question

How critical is the composition of the physical work environment to effective employee performance in “Corporate America” today?

### Subsidiary Questions

1. Why has it taken 30 years before there has been any major attempt at changing the corporate real estate industry?
2. Where is the industry moving?
3. What would be the ideal work environment?
4. Are current office buildings detrimental to employee health and the environment?
5. Is there a current trend towards revolutionizing the office environment?

### Purpose of the Study

The author will address these questions with a study consisting of both past and present literature on the subject. The author believes it is necessary to understand where the corporate office culture has been in the past before truly understanding where the corporate office culture is moving in the future.

## Need for the Study

Office environments need to be designed around the idea that the employee is the most important aspect to consider during design. Buildings need to be designed to appeal and inspire the person that passes by, but more importantly it must inspire those that work within. Corporate America is full of different means of attracting employees. Especially in the age of today's corporate culture, it is the office environment to which employees are drawn to most. "As the research demonstrates, they (owners and architects) are two very different types of talented professionals who can collaborate to achieve more modest—yet quite meaningful—results" (Walton, 1988, p. 173). Walton (1988) discusses further that "...by working together, these individuals have used design as a tool contributing to immediate financial objectives, long-term business strategies, and favorable acclaim by critics" (p. 173).

The ever important aspect of American corporate culture is the "bottom-line." It is the goal of this study to provide the necessary evidence that leads to the need for a carefully crafted office environment that will maximize employee performance within "Corporate America." Walton (1988) insists in Architecture and the Corporation: "For the optimum outcome, the planning and decision-making technique should respond to corporate goals, the firm's own expertise, the building functions involved, and to whether a project is a repetitive or a unique commission" (p. 173). When these factors are carefully articulated, the finished work will validate the observation made by Thomas Watson, Jr. (as cited in Walton, 1988), the legendary chief executive of a legendary corporation, who said:

In the IBM Company, we do not think that good design can make a poor product good, whether the product be a machine or a building or a promotional brochure or a businessman. But we are convinced that a good design can materially help

make a good product reach its full potential. In short, we think that good design is good business (p. 174).

As Walton makes evident with his research on the subject of office design, it is clear that he does not stand on the shoulders of one of the giants that came before but has maximized his company's output by being very selective and cautious about designing a space that would enhance his employee performance.

In "Corporate America" the author believes that there will be an intensified review of the effect of the office environment. There has been a great deal of research done on the effect of the industrial work environment and its many problems with poor design. Until recently, there were not many that were concerned with the effects of the hazards related to working in an office building. The idea of Sick Building Syndrome and the amount of waste that is produced by office building products and materials have recently become "hot topics" in the corporate real estate industry.

### Objectives

The author believes that through the design of the study, there will be a positive addition to the growing material on the topic of office space design. The first objective of this study is to provide the reader with an understanding of where the field of office space design has emerged. The second objective is to provide the reader with insights from leaders within the industry that will serve as a primary resource. The final objective of the author is to provide the reader with a guide of where the industry is heading and to what the industry is striving towards. The underlying theme in this study is to provide the reader with solid foundation as to the essence of



effective office space design and its effect on the overall employee performance and the ever important "bottom-line."

#### Definition of Terms

Bay space- the area that makes up the entire interior of the office from floor to ceiling

Ergonomics- "Investigates the relationships among furnishings, equipment, and human comfort" (Walton, 1988, p. 11).

Green Building- "The construction with ecological awareness. It involves making conscious choices in the selection of building materials and on-site practices to achieve conservation of energy, water, and other material resources. As well as minimizing construction's impact on the environment, Green Building seeks to lower health risks to installers and occupants" (Anonymous, 2000, <<http://www.wodehousebuilders.com/green.htm>, [Homepage]).

High performance building- "New building projects are taking shape throughout the country today, calling into question the performance level of more typical construction endeavors, and prompting us to ask just how far our conventional buildings are falling short of the mark. At the head of the class are a series of energy- and resource-efficient projects that are reaping meaningful energy and cost savings along with important associated benefits" ("High Performance Building Guidelines: City of New York", April 1999).

Sick building syndrome- "The term "sick building syndrome" (SBS) is used to describe situations in which building occupants experience acute health and comfort effects that appear to be linked to time spent in a building, but no specific illness or cause can be identified. The complaints may be localized in a particular room or zone, or may be widespread throughout the building" ("High Performance Building Guidelines: City of New York", April 1999).

Skin- the physical features of the exterior of the office building (glass, siding)

## Chapter II

### Review of the Literature

#### Ergonomics

In order to understand the nature of the corporate office environment, it is necessary to understand the backbone of office space development. In the early 1970's the term ergonomics became the "buzz word" around the industry. In 1973, Modern Office Procedures published an article written about the innovation in office design called ergonomics. The article was entitled "Ergonomics: A Breakout on a New Discipline" (Anonymous, 1973, p. 49). The article covered such topics as workstations, work environment, office layout, and job satisfaction. The research showed almost 30 years ago that with a more concentrated effort on workspace design, employers could increase productivity and morale. The research also provided answers as to which areas of workspace design were important to the ergonomic study such as, the employees' response to the work environment, the employees' use of personal workspace, and the employees control over external factors.

In 1975, Modern Office Procedures published a second article concerning ergonomics. In the article "Ergonomics: Definition of a Work Word" (Anonymous, 1975), the research went beyond the superficial layers of the first article. The research showed that the first article had merely touched the surface of what major impact ergonomics has on the workspace. The goal of the research was to give office space designers a new and improved path for success in terms of office environment design. It was within this article that the author found just what the article set out to accomplish: a definition of the word. Modern Office Procedures define ergonomics as a discipline that pulls together the human physiological factors that make an effective workspace,

and the psychological factors on how employees react to a workspace and environmental change. Ergonomics offers management a yardstick that can be applied to any office design. The term involves tools, material, equipment, furniture, and methods of work and organization of work, as well as lighting, acoustics, color, interior climate, and spatial layout (Anonymous, 1975, p. 45). If the builders and designers can embrace the knowledge of ergonomics, imagine what an asset it would be for the employers understand the power of ergonomics in their workplace.

Ergonomics was broken down to its purest form several years later in a Canadian Datasystems in an article by Fraser T. Morris (1983) entitled "Shaping the Electronic Workplace to the Worker". Morris (1983) defines ergonomics as the study of "man-machine" interface or "human factors engineering" (p. 60). Morris (1983) wrote, "designers must think of the workstation as a workplace where man determines the design of the whole system in such a way as to minimize human liabilities while maximizing human capabilities" (p. 61). Four factors must also be taken into consideration by ergonomists "the user, the task, the workspace, and the overall environment" (Morris, 1983, p. 61). Morris notes the very difficult position corporations are in to see the direct effect of workspace design, but it will be apparent in the "bottom-line".

In the October 1997 issue of Telemarketing & Call Center Solutions, Lisa Terman and Howard L. McKean wrote in their article "Proper Ergonomics: More Than Product Specifications" that ergonomics is not just for uniform design that all workspaces should adhere to. Good ergonomics means fitting the workspace to the body rather than forcing the body to fit the workspace (Terman & McKean, 1997, p. 90). The article goes further to point out that a positive ergonomic environment means more than just issuing specifications that detail proper placement of monitors, keyboards, worksurfaces, and other workstation features. That is because no two employees are shaped the same or even work the same (Terman & McKean, 1997, p. 90).

According to Terman and McKean, it is the neglect of ergonomics within the personal workspace that leads to employees seeking workers' compensation due to poorly designed workspaces.

Perfectly sane people spend hundreds of dollars or more each year on exercise programs, fitness gear, stress reduction, and a host of other things designed to improve their well-being. Meanwhile, at the office, they put up with equipment that induces almost as much pain and suffering as a solid rear-end collision, Alan R. Earls (1997) writes in his Computerworld article "ErgoWise: A Personal Guide to Making Your Workspace Comfortable and Safe" (p. 102). Ergonomic issues may require some expense to address adequately. But there can be a measurable payoff in productivity, particularly, in reducing time lost from work and the frequency of more serious upper-body and cumulative trauma injuries (Earls, 1997, p. 102).

In September of 1999, Business Week's Frontier published findings from a 6 yearlong study based on a small company in California. The graph entitled "The Economics of Ergonomics: How One Company Spends Its Dollars Wisely" (Anonymous, 1999), breaks down ergonomic costs from 1993 to 1998 at Claim Net. Claim Net, a 23-employee company based in Irvine, California. New employees receive all-new equipment to fit the individual worker. Existing furniture has been modified in some cases by adding keyboard trays and other accessories. In addition to listed expenses, every employee is entitled to \$20 per month toward a health-club membership. After incurring close to \$6500 in ergonomic expenses between 1993 and 1998, Claim Net broke that number down to \$93 per employee. A small price to pay to ensure employee satisfaction, safety, and maximum performance.

In the September, 1999 edition of Business Week's Frontier a breakdown of an ergonomically efficient workspace was provided. "Anatomy of an Ergonomic Workstation"

(Anonymous, 1999) provides a detailed description of what should be a part of a complete workspace. The position of the top of the computer screen should be at eye level (or lower for bifocal wearers); a telephone headset in order to avoid neck strain; elbow, wrist, arm, foot, and back support as needed and feasible; height adjustable desks; typing surface at elbow height, with elbows about 90 degrees; arm extension should not exceed 15 inches; place frequently used materials in front of worker to reduce twisting motions; chairs that are adjustable in seat height, back-rest height, angle, and lumbar support; finally to provide sufficient space for whole body to turn.

#### Design for a New Workplace

Increasingly, architects, interior designers, facilities managers, and furniture companies are assuming a new role: strategic consultants familiar not only with blueprints, but also, with human behavior and organization (Hamilton, Baker, & Vlastic, 1997, p. 2). It is no longer these groups' jobs to boost executive egos, but rather boost productivity. Industry Week published an article by Jill Jusko (2000) entitled "Unproductive Office Designs," in which she conducted a survey that found that more than 70% of managers surveyed gave their corporations an office space grade of "C" or below when asked to evaluate its impact on productivity and achieving business objectives (p. 14). Jusko (2000) also found that a survey conducted by Hixson Incorporated (design firm) showed that 61% of the managers surveyed were so frustrated with their organization's office space that they would be willing to sacrifice nearly one-half of their annual bonus check to improve the workplace (p. 14). Kenneth M. Drange (1985) published an article in ARMA Records Management Quarterly entitled "Planned Workspace: A Partial Answer to Productivity Improvement," in which he noted that the costs of workstations can be

justified on the basis of their functionality, adaptability, durability, quality, beauty, and space efficiency (p. 25).

It is no secret that effective office design increases employee productivity. In fact, a study done by Robert Sagot (1997) in Office Systems has proven that relaxed work atmospheres lead to higher employee morale and more productive work environments (p. 26). Companies are paying more attention to employees' needs and providing them with comfortable and flexible workspace systems that create optimal working conditions. Permanence is no longer an issue, and today's office furnishings must have furniture that can accommodate sudden shifts, whether those shifts are department reconfigurations or changes in the workforce. Combining the right elements when modernizing an office is crucial, and companies need to consider office design and their employees' needs, whether those employees are full-time or part-time (Sagot, 1997, p. 27).

Gone are the designs of yesterday, such as the Alcoa Building in Pittsburgh, Pennsylvania. When it was built in the 1950's, 2,000 company employees streamed into the 31-story tower every morning, each to work in a private, 12-foot by 15-foot office (Hamilton, Baker, & Vlastic, 1996, p. 1). It would be impossible to find the same in today's Alcoa Building. Alcoa boasts an executive suite of open cubicles and an area for impromptu meetings: "the communication center," featuring televisions, fax machines, newspapers, and tables to encourage team/group meetings (Hamilton, Baker, & Vlastic, 1996, p.1). "It's like being at home in your own kitchen and sitting around the table, CEO Paul H. O'Neil (as cited in Hamilton et al., 1996) says happily" (p. 1). Alcoa's program began "from the top down," to determine whether or not it would be a company-wide initiative. Alcoa, as of 1999, has abandoned its 31-story office

building for a state-of-the-art facility featuring “communication centers” on every floor. The focus of today’s office building is to foster teamwork and group collaboration.

The leaders in the \$9.5 billion office furniture design and manufacturing industry, Steelcase, Haworth, Herman Miller, and others—are scrambling to crank out the right products for these new workplaces. They are adding mobility—putting wheels on desks, tables, and file cabinets and trying to manage the spaghetti of cables that office equipment can generate. Furniture that use to project an image of stability, now speaks directly to the need for flexibility. Deborah Durham-Vichr (2000) wrote in her Washington Business Journal, article “New Furniture Lets Everyone Wheel Around,” that “mobile furniture is trying to break the cubicle down” (p. 1). “The last great workplace innovation, ‘open space office plans,’ that ended up creating cubicle hells, are actually hard to change, especially when work spaces hang off panels, Chris Banks, a design principal for Gensler, said ... Mobile furniture is not new, it has been included in workspace layouts since 1993-94, but it is getting better” (Durham-Vichr, 2000, p.1). Designers and companies complain they still have to do a lot of custom work to get just what they want, but that should go without saying. “Some of the new office designs do not win awards, but they do address nitty-gritty business goals quite dramatically” (Hamilton, Baker, & Vlastic, 1996, p. 5).

Inhale Therapeutic Systems in Palo Alto, California, decided to redesign their work environment based on the CEO, Robert B. Chess’ background in the changing workspaces. Chess formally worked as a staff member in the White House. He found that his colleagues were obsessed with their proximity to the president. Chess decided that Inhale could not afford to be wasting time worrying about such nonsense. So, the entire staff of 65 employees, including Robert Chess, sits in large cubicles that he calls “bullpens.” There are not any walls or barriers

of any kind between them. "It forces everybody to talk to each other all the time, and the lack of private space eliminates gossip and reduces the need for memo writing. It also gets top managers scattered among the troops" (Hamilton, Baker, & Vlastic, 1996, p. 6).

Questioning ancient assumptions has also allowed Mobil Oil Corporation to save big bucks and help employees work better. After a company wide study, Mobil (as cited in Hamilton et al., 1996) realized existing office-space guidelines, which assigned space largely by company rank, were obsolete and occasionally, counterproductive. Mobil reformulated guidelines by job function instead of rank, and the company settled on basic space sizes that were interchangeable. For example, 75 square feet is now the standard, one-person office; 150 square feet is a two-person office or a manager's office; 300 square feet is a conference room or a file-storage office. That replaces half-dozen more staggered sizes just for personal spaces. These changes cut Mobil's costs close to \$100 million a year (Hamilton, Baker, & Vlastic, 1996, p. 6).

The author's research led to an underlying theme in modern workspace design that is, image is all-too important. Not only the visitor's impression of the office, but more importantly, the image the employees have of the office. Employees want to be proud of the place that they work each day. Managing Office Technology published an article entitled "What image does your office convey?" by an Anonymous author(s) in August of 1997. The theme throughout the article stressed the importance of how the appearance of a company's office can be the difference between signing new businesses and losing potential clients. Mitch Tarzian (as cited in Anonymous, 1997), president of Tarcom Corporation, a general contracting/ construction management/ design/ build firm, believes that, "A positive image is one of the most important sales tools you can have. The image your office projects about your business affects how



visitors relate to you and your staff, what their expectations about you are, and how they react toward you. Thus, it is important that you take a critical look at the appearance of your office-through a visitor's eyes, as it were-and do not ignore indications that your office needs a facelift" (p. 25).

An office is in jeopardy of projecting a poor image when: (a) the color schemes are outdated; (b) the ceiling systems look shabby; (c) heating, ventilating, and air conditioning systems are inefficient; (d) workspace is used inefficiently; (e) lighting is poor and inefficient (Anonymous, August 1997, p.25). The trends for improving the workspace concerning these five major points are as follows: (a) interior office color schemes have been using more earth tones and patterns; (b) ceiling improvements are usually a minor modification that can make a tremendous difference (for example, acoustical ceiling tiles are available in various sizes and designs, and can be installed in a short period of time); (c) HVAC systems can become quickly inefficient with improper care, which in some cases leads to a 10 to 15 year lifespan; (d) asking employees about their workspace needs is the first critical step to maximizing the office floor plan; (e) lighting can be best improved by effectively combining overhead and task lighting at each workspace (Anonymous, 1997, p.25). Although maintaining an appropriate, up-to-date office image is an ongoing task that requires careful planning, the reward-a respected, approachable, professional image-is more than worth the effort (Anonymous, 1997, p.25).

#### Who Should Be Involved in the Process

In 1985, Patricia M. Fernberg published an article entitled "Designing the Workplace for the Knowledge Worker," in Modern Office Technology. In the article she predicted that by 1990 that to 40 million workers in the United States, or half of the workforce, will be using computers

in their daily work, and most of them would be knowledge workers” (p. 73). But, more importantly, Fernberg (1985) found that worker comfort and a flexible workspace could improve worker productivity because they “enhance feelings of well-being and control over the environment” (p. 73). Fernberg’s research also found that a major obstacle to gaining the most efficient workspace system, maximizing the idea of ergonomics, was being impeded by the lack of cooperation between the designers and manufacturers over whether the employers should be involved in the design and implementation of such workspaces (p. 74).

The changes made in the new millennium are for most organizations a matter of survival. According to a survey done in 1999 by the American Society of Interior Designers (as cited in Sunoo, 2000) employees ranked the look and feel of their workspaces as their third most important consideration, after salary and benefits, in deciding whether to accept or decline a job (p. 38). “People, knowledge, and technology need to be integrated and supported by the physical environment to achieve success, says David P. Secan (as cited in Sunoo, 2000) workplace development consultant and principal of Elkins Park, Pennsylvania-based Secan Associates. People represent a company’s largest and most important asset. But corporate real estate and facilities represent the second” (p. 38).

The challenge for organizations in creating the most effective work environment is that the people that should be involved in workspace design, human resources professionals, for the most part are left out of the equation (Sunoo, 2000, p. 39). “The responsibility for change in the workspace is usually given to those whose priority is cost cutting and efficiency,” says Dorothy Leonard, co-author of When Sparks Fly (Workforce, “Igniting Creativity”, October 1999). Sunoo (2000) writes, “Human Resources best understands employees’ behaviors, needs and functions. In the best of scenarios, human resources, information systems and real estate staff

should come together as a team. By doing so, you are more likely to transform a traditional workspace design based on entitlement to one based on today's real-time, teamwork processes" (p. 40).

### The Need for Flexibility

In 1981, Elroy C. Jopling wrote an article for CA Magazine, entitled "Offices Without Walls – Flexibility Without Limits," in which he promoted the new concept of open floor plan design for offices. Jopling depicts an office that can boost productivity by giving employees a sense of ownership over their personal workspace. Almost 20 years ago, Jopling described an office environment that is for the most part in use today, however it is only to be constantly "tweaked." "The efficient use of space is extremely attractive when one considers soaring space costs, employee turnover, and energy costs" (Jopling, 1981, p. 75). An article written 20 years ago, that still in its essence can be applied to the evolving design of office environments and the constant need for flexibility.

Rows of tiny, identical, walled desks are no longer the norm in office design (Thomas, 2000, p. 1). Flexibility should not be considered unfeasible. Diane Caldwell, an interior office space designer, argues against corporations that ignore the long-term benefits of outfitting employees with the proper workspace. "Comfort equals productivity, Caldwell said (as cited in Thomas, 2000). The need for flexibility is very important in office space. Everything needs to be within a comfortable reach" (p. 2).

The business leaders of today are aware of the direct connection between the success of their businesses and the effective design of their office facilities. Therefore, "they demand that their facilities be performing assets - - not fixed assets - - and they maintain high expectations for

the ways in which their facilities function” (Meadows, 1998, p. 1). Meadows provides four outlining points for an organization’s success, as it relates to flexibility in the design of its office space: First, having moved beyond the baseline expectation that their office facilities simply support work, they have come to require that they actually enhance their organizations’ work processes and missions; Second, they expect their facilities to assist in the attraction and retention of employees; Third, they expect their facilities to reinforce existing corporate culture or serve as a catalyst to cultural change; Fourth, they expect that these offices perform for them today and in the future, yet they are unable to define the future (Meadows, 1998, p. 2). If business leaders are unable to predict the future, then they must rely on what past designs have been in both trends of work style and office and building technology. According to Meadows (1998), in order to maximize flexibility in office space design, four items need to be considered: site, building, interior, and support systems.

The site, for both urban and suburban office buildings in the future, is concerned with the environment and security. Environmental concerns center around being able to provide employees with outdoor amenities, so as to maximize the physical landscape. By utilizing the outdoor landscape, corporations can provide employees with the option of working outside. Security issues for the site need to be squelched, giving employees peace of mind (Meadows, 1998, p. 3).

The building should follow the idea of form following function. “Simplicity will characterize these buildings – simplicity of massing, structure and skin” (Meadows, 1998, p. 3). Meadows (1998) predicted that there would be a movement towards structural “skeletons”, in which the only fixed elements, will be structural. The buildings other design elements will be completely flexible: partitions, lighting, flooring, ceiling, power and air distribution systems. It

will be these trends that will give architects the chore of creating beauty from the “functionality and utilitarian nature of the building” (Meadows, 1998, p. 3). Meadows makes his boldest and most accurate forecast with in his description of the future flexibility of office buildings in his description of what the bay space (footprint) will expand. “We will see a continued trend toward larger building footprints with standards of 50,000 square feet, long span structures, exposed columns at a minimum of 40 feet and greater core-to-glass dimensions...resulting in standard finished ceiling heights moving from nine feet (the current standard) to 10 feet and perhaps beyond” (Meadows, 1998, p. 3). The benefit of a larger bay space is that the flexibility for office space design will increase dramatically because of the expansive open space not apparent in present office building design.

Interior design will also be driven by functionality according to Meadows (1998). “Everything within the interior environment will be movable and interchangeable. Movable walls, furniture and accessories will create a ‘plug-and-play’ that will be easily modifiable to respond to changing business mission and culture, market conditions and the need for a diversity of work settings appropriate to a changing work force” (p. 4). The flexibility will also give employees control over their personal workspace. “The manipulation of environmental services such as air temperature and distribution, power, and lighting” will be given to employees (Meadows, 1998, p. 4).

Building systems include mechanical; wire management (for electrical, voice and data), lighting, and security to ensure better quality, capacity, and flexibility (Meadows, 1998, p. 5). Mechanical design will center on energy conservation and the ability to expand as the workforce grows. Wire management is most efficient and flexible when underfloor systems are utilized. Lighting will be improved with the larger bay space, giving more access to natural light and

indirect lighting. Similar to the individual air control, it will also be effective for employees to raise or dim their workspace lighting.

Rusty Meadows (1998) stresses the flexibility of office space design in the future for corporations' own survival purposes. "So, as we look to the future of the office building, we see buildings designed for simplicity and functionality, with a focus on supporting constantly evolving corporate cultures, organizational structures and work patterns. As architects, we strive to meet the continual challenge of providing performance for today and flexibility for tomorrow" (p. 4).

### Technology in the Workplace

The problem facing the corporations of today concerning technology is the simple fact that they cannot keep pace. The office buildings in which they are located do not help the cause. In James Overstreet's (1999) article in the Memphis Business Journal, he said, "If American companies are implementing business strategies and technologies that are like fast-flying jets, then workplaces in which these tactics are being executed are more like the Wright brothers' first glider" (p. 1).

Overstreet (1999) compliments corporations on making tremendous strides in reorganizing the company hierarchy. Organizations are becoming more and more "flat." Overstreet describes how companies are embracing the "horizontal" organizational structure across the country due to its great effectiveness compared to the traditional corporate model (p. 1). However, Overstreet is quick to point out that, "While all of these revolutionary changes are quickly being accepted, most companies have failed to recognize a key element in accomplishing all of these goals: office design" (p. 2). John Atkerson (as cited in Overstreet, 1999) vice

president of Memphis Business Interiors, a leader in providing office furniture, furnishings and design, supported Overstreet when he said, "The technology, the business processes and the people have changed significantly over the years. The one thing that is missing is the workplace" (p. 2).

Nearly every company regardless of size is seeking a connection to the Internet, a tool necessary to establish everything from intranets to virtual offices, and e-commerce. "The modern office is a plug-and-play environment, and that requires total connectivity," says Jim Young (as cited in Overstreet, 1999, p. 2) president of Memphis-based SOS Systems, a full-service connectivity company and office design consultant.

The term "office of the future" gives most desk-dwellers claustrophobic visions of smaller and smaller workspaces. But bottom-line-conscious execs salivate over the potential savings to be gained from the flexibility of offices without permanent walls (Lambert, 1998). Lambert (1998) wrote about the "plug-and-play" workspaces for Business Week Online, to announce Haworth (office furniture makers), new product; DataThing. DataThing was designed to appease the connection nightmares corporations face as they hire, fire, and move people around in today's high-tech, plugged-in workplaces. DataThing was designed as a modular system. It did not require "after hours" work by technician crews to run the necessary voice and data lines. "When it is time to rearrange the office, unplug the cubes, move them around, and then snap them back together like networked Legos, without having to untangle the accumulated Ethernet, phone, or fax spaghetti" (Lambert, 1998, p. 1).

So while companies are seeking plug-and-play offices, they are also demanding plug-and-play buildings. As a result, the corporate real estate industry is seeing the re-emergence of what, in the mid-1980's, was known in the real estate community as "smart" buildings

(Overstreet, 1999, p. 1). "With corporate offices undergoing dramatic changes that are being driven primarily by technology, the same is holding true for the facilities that house these offices, as landlords are under increasing pressure to provide flexible buildings" (Overstreet, 1999, p. 1). Success in the Information Age will require workers to interact frequently and exchange ideas; something that certainly cannot be done in the closed landscape design, and is difficult even in the open landscape that is lined with 12-by-12 boxes (Overstreet, 1999, p. 2).

### Health and Environmental Concerns in the Workplace

In 1995, Toni Meixner wrote about the growing health concerns that have resulted at the workplace. Meixner writes, "Energy problems, first encountered in the early 1970's, necessitated a reevaluation of construction practices and materials. The effort to reduce dependency on foreign oil resulted in more energy efficient building practices. Unfortunately, the new buildings were no longer able to 'breathe'. As the recirculation of the inside air increased, so did the ever-growing list of contaminants. Gradually the air has become a breeding ground for a number of ailments resulting in Sick Building Syndrome" (Meixner, 1995, p. 1). "Sick Building Syndrome (SBS) occurs when building occupants experience acute health and comfort effects that are apparently related to the time they spend in the building, but in which no specific illness or cause can be identified" (Meixner, 1995, p. 1).

Meixner points out symptoms associated with SBS such as: headaches, nausea, dizziness, respiratory problems, coughing, wheezing, and eye, nose or throat irritations. According to Meixner's report, Building Related Illness (BRI) is an even more serious condition than SBS. "BRI is brought on by exposure to the building air where symptoms of a diagnosable illness are identified (e.g. certain allergies or infections) and can be directly attributed to environmental



agents in the air. BRI's account for a 69 percent increase in requests for investigation by the National Institute for Occupational Safety and Health over the last fifteen years" (Meixner, 1995, p. 2).

Meixner (1995) breaks down the foundation of SBS and BRI into two categories contributing to Indoor Air Quality (IAQ) problems: (a) Heating, Air Conditioning, and Ventilation (HVAC) systems, and (b) contaminants. "The HVAC system controls the circulation of air throughout the building, the introduction of fresh air into the mix, and the filtration of airborne particles. Poorly ventilated or seldom cleaned, these systems can pump contaminants through the building again and again" (Meixner, 1995, p. 2).

Sick Building Syndrome (SBS) and Building Related Illness (BRI) were the environmental buzzwords for the 1990's according to Meixner (1995). Especially for the chemically sensitive segment of the population, SBS and BRI will hopefully explain the chronic discomfort that they have been experiencing. However, Meixner also points out that since Americans spend 90 percent of their time indoors, whether it is at home, the workplace or entertainment spot, it is quite possible that the less chemically sensitive could be affected.

The author would like to include an excerpt from an article published in the June 2000 issue of Business Week Online by Michelle Conlin, entitled "Is Your Office Killing You: Sick Buildings are Seething with Molds, Monoxide - - and Worse." The author found it to depict quite vividly what "Sick Buildings" have the power to accomplish over time.

Everything was running perfectly that spring afternoon at the courtyard-style Best Western Springdale in the suburbs of Cincinnati. Room service was humming along at a reliable clip. The floral-patterned comforters were getting fluffed. Kids were splashing in the pool. Then, suddenly, General Manager Jim Crane got an emergency call about a leak that was turning

Room 529 into a virtual waterfall. Within minutes, he and the hotel's burly engineer were ripping apart the room's walls. Inside, they found something out of a B-grade horror movie: a deathly smelling mold so gooey and hairy it seemed like it was breathing. Crane soon discovered that, like the Blob, the *Aspergillus* strain of mold was everywhere: swarming through the bathrooms, sprouting out of ceilings, and creeping through the ventilation and vending machine areas. This was May 1998, and for the next year Crane worked to rid the hotel of the mounds of black growth. He knew they were a disaster for guest relations, but what he did not realize was that each time he took a breath, he was inhaling the mold's toxic fungal spores. These bioaerosols landed on the delicate mucous membranes of his airways and lungs, causing chronic inflammation and eventually leading to a medical diagnosis of hypersensitivity pneumonitis. The condition further scarred his lungs and eventually progressed into pulmonary fibrosis, a disease that is painful, debilitating, and sometimes even fatal. Slowly and invisibly, his workplace was killing him. (Conlin, 2000, p. 1)

Repetitive Strain Injury (RSI) is another health concern that has been often overlooked in the past because most believed it to be associated with a "blue-collar" lifestyle. "For the delicate muscles and tendons in the fingers and wrists, rapidly pushing buttons thousands of times an hour can be just as stressful" (Elmer-DeWitt, 1994, p. 2). Dr. Emil Pascarelli (as cited in Elmer-DeWitt, 1994), director of ambulatory care at St. Luke's/Roosevelt Hospital and co-author of "Repetitive Strain Injury: A Computer User's Guide" said, "When you are working eight hours a day at the same task, you are essentially an athlete. Unfortunately, too many people are trying to run in the Olympics when they are not in shape for it" (p. 2). The chore for corporations now is to take the necessary steps to aid in preventing such ailments related to RSI.

MacWorld magazine, based in San Francisco, made strides when two employees were forced to take a leave of absence due to severe RSI. The company heeded the warning and began to adjust the workplace by adding adjustable, modular furniture and equipment. "We took the approach that it was a partnership between the employees and the company. The employees have to do some things, like take breaks and take care of themselves, and we have to provide them with the tools, equipment and education," says Shelly Ginenthal (as cited in Elmer-DeWitt, 1994), MacWorld's director of human resources (p. 3). MacWorld is not RSI-proof, they are ergonomically correct. "The new equipment and the training necessary to use it can be expensive. But the cost of doing nothing could be even higher, both for the employer, who may end up in court paying damages, and for the RSI sufferer, who may never type again" (Elmer-DeWitt, 1994, p. 4).

## Chapter III

### Interviews

Stanley C. Gale  
Gale & Wentworth, LLC  
Chairman and Chief Executive Officer

#### Executive Profile

As the company's founder, Stanley Gale leads the operation of a global property portfolio concentrating on the sourcing of equity opportunities and the establishment of joint venture partnerships with financial investors and institutions. He is responsible for establishing policies, procedures and the overall strategic direction of the organization, implementing programs embracing quality service, providing total client satisfaction, encouraging community involvement, and insuring the firm's distinguished reputation. He also has an ownership interest in the New York Yankees baseball team, the New Jersey Nets basketball team, and the New Jersey Devils hockey team.

#### Interview

##### Question:

How critical is the physical work environment to office space design today compared to when you first began working in the corporate real estate industry?

##### Answer:

The design of the physical work environment is very critical. Buildings used to be designed from the outside in, now we are designing them from the inside out. The buildings may look great, but if they are not flexible enough to allow the building to

function, then they are behind the times. Ten percent to 15% of an organizations budget is allotted for the cost of occupancy. Eighty-five to 90% is allotted for salaries. People are the most important aspect of any organization; we must treat them as such.

Question:

Around what time period did you first begin to see the importance of workspace design?

Answer:

During the 1990s, was where the industry saw the most dramatic change in workspace design. Until then, organizations were still working in cubicles based on a design from twenty years ago. The demand for change, rather the ability to change, is what is driving our industry. When modern technology surged forward, it was up to the industry to try and keep up. Organization's concepts changed, as they were looking to do more with less and become more "service" driven rather than just a "manufacture" mentality.

Question:

Why has it taken such a long period of time for the industry to adjust to the innovations?

Answer:

The corporate real estate industry is "reactive", not "proactive". In 150 years there have been two significant changes in the office building industry; elevators (1909) and air-conditioning (1950). The exterior of buildings has not changed. Contractors are still using stone, pre-cast, concrete, and steel. The industry has come to the realization that the "user" in these buildings is the most important part of the structure: Workstage.

Question:

If you were to create the ideal workspace environment, what would you envision it to be if you were an employee?

Answer:

The workspace would need to be multi-dimensional. It would be comfortable and efficient. The space would allow for a balance between the technical environment and human interaction.

Question:

How critical is office space design to “retention”?

Answer:

An employee enjoying the environment that he/she works in is very important for not only retention, but acquisition and recruitment as well. Employees do not want to be hidden in dark workspaces hidden in a “sea of cubicles.” Employees should be given the opportunity to “sing the song they came to sing.”

Question:

What have been the most repetitive complaints in regards to the corporate real estate industry?

Answer:

Definitely the HVAC, lack of flexibility, and the poor lighting.

Question:

What will Workstage, LLC do for the industry?

Answer:

Hopefully, Workstage will spurn a re-creative idea of how office buildings should be built in corporate America. Also, that there will be others that come along and “piggy-back” off the Workstage concept.

Question:

“Office innovation is the translation of social, organizational and technological developments in office accommodation concepts.” (Anonymous. 2000.

<<http://www.workstage.com> . [Homepage]. Dutch Ministry of Housing, ‘Spatial Planning and the Environment’) What are your thoughts on this statement?

Answer:

The only thing to be changed in that statement is the word “innovation” to “environments.” The industry is most certainly affected by the combination of these three factors (social, organizational, and technological developments).

Donald M. Slaght  
Workstage, LLC  
Executive Vice President

Executive Profile

Donald M. Slaght oversees the North American sales and marketing efforts for Workstage, a new venture Gale & Wentworth has launched in partnership with Steelcase, Inc. He will also lead the development of the sales and marketing divisions of the company, which will develop and outfit new prototype buildings throughout the nation.

Interview

Question:

How critical is the physical work environment to today's office space design as compared to when you first began working in the corporate real estate industry?

Answer:

Real estate development has had two "booms" during my career. From the mid-1980's till 1995-96 and from 1997 till 1999. In those two time periods there were no major changes with office building construction. However, during the second "boom", even though change had not occurred on the exterior of corporate America, major developments were occurring on the interior. Flexibility was the driving force during the second wave of corporate real estate development. Only a small fraction of the industry around the world was maximizing their interior workspace design.

Question:

Around what time period did you first begin to see the importance of workspace design?

Answer:

The early 1990's recession forced corporations to scale down. Corporations began to use the "hotelleing" technique in office space design by bringing cubicles together with a central hub for power distribution. The business world was attempting to use workspace more effectively.

Question:

Why has it taken such a long period of time for the industry to adjust to the innovations?

Answer:



The corporate real estate industry was racing to keep up with technology. Gale and Wentworth was still struggling to gain Internet and e-mail capabilities in 1996. The fact that technology is more affordable and accessible now has given the industry cause to create the needed flexibility in the workspace.

Question:

If you were to create the ideal workspace environment, how would you envision it?

Answer:

“Workstage!”

Question:

How critical is office space design to “retention”?

Answer:

The design of the office space is so important to keep the best employees. It has become such a major factor in hiring employees and making sure they stick around for a while.

Question:

What have been the most repetitive complaints in regards to the corporate real estate industry?

Answer:

The temperature (too hot or too cold), lighting (fluorescent lights irritate the eyes), air (lack of natural air into the workspace), and spatial planning (crowded). The lack of flexibility in the office makes it a costly problem for companies to grow and expand.

Question:

What will Workstage, LLC do for the industry?

Answer:

Workstage is going to change the way deals are made and buildings are built. It will streamline the proposal and entire construction process. The industry will soon be mimicking the Workstage model of development.

Question:

“Office innovation is the translation of social, organizational and technological developments in office accommodation concepts.” (Anonymous. 2000.

<<http://www.workstage.com>. [Homepage]. Dutch Ministry of Housing, ‘Spatial Planning and the Environment’) What are your thoughts on this statement?

Answer:

The statement is a good footnote for the industry. I stand by the statement as a testament to where the industry is moving.

## Chapter IV

### Optimal Systems

An office is more than a place to house employees. These days, it is a place to seek the inspiration of an urban skyline or a peaceful sunset. Not to mention a place to shoot a few hoops, play some ping-pong, take a nap, sip an espresso or build a little buzz. Today's companies seek an environment that quickly communicates an image of success and creativity, one that wows potential clients, reassures investors, attracts hard-to-find recruits, and helps employees forget how hard they are working. Achieving all that can mean going to extraordinary lengths (Kanter, 2000, p. 1). Kanter describes image as not necessarily being everything, but he quickly points out that it does not hurt.

The barriers of what the office space used to be are being broken down. Corporations are seeking workspaces that excite and motivate their employees. Going to the office should not be a burden. "Not so long ago, a well-equipped office meant there were computers rather than typewriters at every desk and maybe a kitchen with a refrigerator and microwave. Today, such features probably represent the bare necessities for life at the office. Now, game rooms, sleeping areas, showers and spacious kitchen and lounge areas that might be wired for computers are in demand" (Wagner, 2000, p. 1). John Knowles (as cited in Wagner, 2000), an interior architect specialist, says "Employees just do not work in one space anymore; they want to be able to act on an idea whenever it hits them. So kitchens are equipped with white boards or computer connections; outdoor courtyards and decks have connections where laptops can be plugged in and comfortable places for people to sit and work outside" (p.3).

Cambridge Incubator's CEO, Timothy Rowe (as cited in Holt, 2000) has embraced the innovation in office design. The small company has translucent plastic walls that double as

whiteboards, which allow for visual thinking. The partitions also filter out sound and allow for natural light to stream into the office. Rowe has designated corner offices as conference rooms for everyone to utilize.

BodyMedia Incorporated located in Pittsburgh, Pennsylvania has designed an office that has transcended the idea of cubicles. Sheets of sheer Lycra fabric separate the workspaces. Figures moving behind the sail-like sheets are seen as silhouettes. The partners wanted a space that encouraged collaboration, but also provided some privacy. Also, to maximize their workspace, BodyMedia put most of the furniture on wheels. By doing this, desks can be rolled together for impromptu meetings; the office is also full of movable whiteboards that can be reconfigured to create instant conference rooms. "We like to encourage the serendipitous exchange of ideas. Even if it does mean your neighbor can see a shadowy version of you dozing off behind the Lycra" (Anonymous, 2000, p. F27).

Escient Technologies, in Indianapolis, Indiana, has a new home called INTECH Park. It is described as a merger between technology and convenience. Escient is located in INTECH One, the first of 16 buildings to be built on the site. Along with 16 office buildings the plans call for a hotel, daycare center, restaurants, and a dry cleaner. INTECH One alone includes a bank, a deli, a Wendy's, a gas/convenience center, outdoor seating overlooking a lake, walking and running trails, bicycle racks and paths, a picnic area, and an area for volleyball and basketball. The office park overlooks the largest city park in the nation, Eagle Creek Park. "INTECH Park has the technology, infrastructure and community atmosphere that businesses like ours need to grow and thrive, says Scott Jones (Anonymous, 2000, <<http://www.intechpark.com>, [homepage]) Chairman and CEO of Escient Technologies, LLC, and Chairman of the Indiana Technology Partnership. "Being located in INTECH Park should significantly enhance Escient

Technologies' ability to function at an optimal level and to attract and keep high-quality employees" (Anonymous, 2000, <<http://www.intechpark.com>, [homepage]). Escient Technologies is a corporation that has made not only their workspace efficient, flexible and user friendly; they have taken it a huge step further and made the work environment complimentary to the workspace.

The author derived most of the inspiration for research from the partnership between Gale & Wentworth, LLC and Steelcase Incorporated. It was here that the author's research manifested itself in the form of Workstage, LLC. Workstage is the product of the world's largest office furniture manufacturer and one of the nation's largest privately owned corporate real estate companies. Workstage was designed to not only innovate the workspace and buildings they are located in, but to transform the industry. It is structured to change the way companies buy, lease, and negotiate commercial real estate. The aim was to create a user-centered work environment at competitive lease rates in new office buildings twice as fast and employing construction methods that are approximately 10 percent less expensive than conventional techniques (Anonymous, 2000, p. 11). "The work environment's sole reason for being is to support the people who work in it. We develop flexible, affordable, and available workspace designed to help companies attract and inspire employees by offering reconfigurable interior space, mobile furniture, universal access to computing and communications technologies, and abundant bandwidth," says Jack Cottrell (as cited in Anonymous, 2000, p. 11), CEO of Workstage. Workstage has four principles in their process: user, flexibility, environment, and speed/cost. The author found Workstage, LLC to be the quintessential leader in the workspace metamorphosis.

## Chapter V

### Conclusions and Recommendations

Steelcase has been pushing the corporate furniture industry to produce the most efficient and flexible office equipment since 1912. The research and development end of Steelcase spends millions of dollars to achieve all that the company sets out to do in maximizing the effectiveness of the workspace. When Steelcase came to the realization that they had designed this product that did everything they wanted it to do, but was being placed in these prehistoric office buildings, they knew something had to give. Steelcase decided to start redefining not only the office furniture industry but the corporate real estate industry as well. The attempt was to design the building around the user and the office equipment and technology that goes into it, not the user around the design of the building. Workstage is what would emerge. The eventual success of Workstage will lead to a corporate real estate overhaul. Yes, companies will still require buildings built in the traditional style, but Workstage inspired design will drive the other end of the industry.

The author began his research as a result of his internship with Gale & Wentworth, LLC and Workstage, LLC. The author had no prior knowledge of the corporate real estate industry. However, as the author's research came to a close, he discovered that his knowledge base in the industry, especially the innovations, was quite expansive.

The author began conducting his research on the Workstage model. He studied all of the different assets, products, mechanical systems, and real estate processes. It was the author's job to report to his superiors on the different facets of the Workstage model they were attempting to sell. When the author finished his initial research he found that the corporate real estate industry was far behind where Workstage was boldly attempting to venture.

The author struggled with the idea that Workstage, LLC was the first of its kind in the industry of corporate real estate. What the author found out as his internship moved on, was that the company was attempting to streamline the long and arduous real estate process. The author understands that the buying and selling of an office building can be extremely time consuming, but how can the industry be so blind to progress. In the author's interview with Stanley C. Gale, Mr. Gale pointed out that there have only been two major advancements in the corporate real estate industry; the elevator and air-conditioning. It seems inconceivable to think that Workstage will not and could not be the next major advancement. Selling an office building is a little different than selling a home. Workstage had a goal to deliver their product anywhere in the country in half the time it takes conventional businesses to deliver an office building.

The author hopes that the corporate real estate industry will soon embrace the future, which is Workstage. Workstage has revolutionized the idea of flexibility in the workspace. The author's research found that it is the idea of flexibility that every business in corporate America strives to achieve. The author confirmed the rationale that it is impossible to predict the future, but he also confirmed the fact that one needs to be as ready as possible. A company needs to be ready to adapt to the world around them, growing and expanding within the culture it coexists. Steelcase thrives on the idea that the problem with the workspace is that there is an unpredictable need for change and that the solution is incomparable adaptability. For corporations to thrive and survive in America's competitive corporate environment, they will need to consider what it will take to set them apart from the others; Workstage.

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