

The Spatial Effect of Office Layout on Workers

When one thinks of a typical working office in America, the first thing that comes to mind is probably a cubicle. The ominous clacking of keyboards is background noise for the sporadic ring of a phone call or muffled voices of a conversation. Occasionally, a coworker may pop his/her head in to ask if the three o'clock conference is confirmed. Working in a cubicle is exactly where all college graduates would say they do not want to end up. The norm in today's society is that unless one happens to get promoted to a window office, one is stuck in the dreaded cubicle. Negative stereotypes of cubicles have been reinforced through movies like *Office Space* and comics like *Dilbert* which poke fun at the cramped quarters and uniform feel of the cubicles (Chen, 2011, para. 13). In offices today, cubicle use is on the decline. Big corporations like Intel are reducing the size of office space in favor of smaller more temporary work stations (Chen, 2011, para. 4). Not only are companies downsizing to save money, but the new office space designs are more eco-friendly with fewer and slimmer panels (Chen, 2011, para. 18). To discover whether or not newer designs are truly a better alternative to cubicles, one must ask the following question: how does the design of a workplace encourage higher employee satisfaction, greater efficiency, and greater collaboration?

How Robert Propst Changed Office Space

Before designers began to take serious interest in how satisfaction, productivity, and collaboration were affected by the environment, offices were created to fit the most people possible in the least amount of space. In the 1940s and 1950s, most large offices were designed

in a “bullpen” fashion, with rows upon rows of open desks and without audio or visual division from person to person (Sullivan, 2013, para. 4). Also referred to as the “classroom,” such an office was often noisy with no privacy whatsoever, each employee having one desk among a sea of others (Lagorio-Chafkin, 2014, p. 13). There was no consideration given to privacy in the workspace because, frankly, no one had considered it important to workers. However cost effective the “bullpen” layout appeared, the reality was it was simply not efficient. Eventually, the German influence of *Bürolandschaft* --summed up as “cultivated chaos”--was introduced to create a more open environment (Saval, 2014, para. 5). The new design no longer separated executives from other workers in efforts to eliminate the unofficial social hierarchy and to increase communication (Saval, 2014, para. 5). It used movable partitions and plants as a way of separating work space, while keeping an open environment (Saval, 2014, para. 5). Two major problems with this plan were, first, those who were comfortable working in a private office had trouble concentrating in the louder environment and, second, it was also easy for workers to take advantage of others’ space by moving partitions to create a bigger office for themselves (Saval, 2014, para.6). Some organizations that attempted this plan found it just as inefficient. The law firm Tuft and Lach and the George Washington University’s daily news service both switched to open plans, but found the poor organization to be too chaotic (Eggers, 2012, para. 1-2 and 11-13).

Robert Propst was dissatisfied with this ineffective system and set out to find a better solution. He began studying different workers in their office environments to look at “how the world of work operates” (Herman-Miller, 2014, para. 3-4). In 1960, he was promoted to President of the Herman Miller Research Corporation where he took it upon himself to improve the current “wasteland” of office life (Herman Miller, 2014, para. 4). In 1964, he released his

first Action Office plan which caused a stir in the design community, but did not sell incredibly well (Lagorio-Chafkin, 2014, pp. 4-5). He continued to research, and by 1968, he released the new and improved Action Office II; it included three felt-paneled walls that sectioned off workspace (Saval, 2014, para. 8). His intent was to section off vast amounts of space using up to three panels that allowed for flexibility (Lagorio-Chafkin, 2014, p. 6). The flexibility, in turn, led to increased productivity, since one space could be used for multiple purposes. Its popularity continued to increase, and it is estimated that by 1998 more than 40-million Americans were working in this design (Saval, 2014, para. 8).

Business Has Changed Since 1960, Yet Offices Haven't

Since the death of Robert Propst in 2000, business as a whole has morphed dramatically, changing the needs of workers. As technology advances, companies have adapted in order to use available resources better. The large stationary desktop computers have been replaced with mobile laptops, allowing employees freedom to work in a variety of places. Also, more documents are stored electronically as opposed to on paper, meaning less space is needed for file storage. Over time, workers have become more flexible, but office space has not, and this is a problem. One reason offices should be more flexible are the increase in both temporary employees and in employers to allowing their employees to spend time working from home (Taylor, 2012, "Workforce and Working Hours," para. 1-2).

Propst had no foresight into the changes that would occur in the business world when he created his "Action Office." He intended to reverse the hectic atmosphere of the bullpen and give workers a place of their own. Employers can agree that certain aspects such as employee satisfaction, greater productivity, and increased cooperation are beneficial to the company as a

whole. Propst strove to achieve all of these benefits by partitioning workers into individual cells that would minimize distraction, but still allow interaction (Saval, 2014, para. 7). Unfortunately for Propst's sake, cubicles have morphed from making office productive to symbolizing low-wage drudgery. Competitors of Herman Miller built off of Propst's widely popular design by adding more panels and partitioning the offices even further (Lagorio-Chafkin, 2014, p. 7). This led to an overly utilitarian feel, creating unrest in the office, especially as layoffs increased (Saval, 2014, para. 10). In the 1980s and continuing into the 1990s, the cubicle tended to discourage innovation, cause unhappiness, and decrease productivity (Lagorio-Chafkin, 2014, p. 9).

Google Defies a Traditional Office Space through Creative Design

Google has worked to reverse this effect through its innovative office designs. It was started by two Stanford students, Larry Page and Sergey Brin, and from the beginning, it was clear Google was a different type of company (Google, 2013b, "1996," para. 1). In 1999 when the company first moved to its Mountain View location, it set a tone different than did the average workspace. As the company continued to grow, it focused increasingly on establishing a productive environment in which staff could work creatively and collaboratively.

Today, Google's headquarters are still in Mountain View, but its markets have expanded to include offices all over the world (Google, 2013b, "August 2001," "October 2002," "September 2004," "October 2004," "November 2005," and "December 2011"). Each new office that Google opens is personalized for the city that it is in, like the ceiling panels designed to echo *Stroopwafel*, a famous Dutch cookie in the Amsterdam offices (Taylor, 2014, para. 5 and photo 2). Google proudly portrays its multicultural workforce through these office designs. In addition,

there are new types of workspaces within each building. One strategy that Google has found to be successful is a room called the “Garage” (Google, 2013a, “Inside Google Mountain View [Global HQ],” para. 5). In this conference room, every table, desk, and chair are on wheels and writing on the walls is encouraged (Hunt & Caster, n.d.). Not only is this design element more popular than other office spaces, but in it workers get more done.

That such a layout strategy is so popular suggests that one of Google’s main focuses is on employee satisfaction, as clearly demonstrated by its consistent ranking as number one of The Fortune 500’s 100 Best Companies to Work for. Employee satisfaction can be defined by a lack of negative sensations and can be broken down further into physical, functional, and psychological comforts (Feige, Wallbaum, Jansen, & Windlinger, 2013, pp. 11-12). Of course, there are more factors than design layout that go into worker happiness, like ability to get along with co-workers and current salary earnings, factors not addressed here. A study published in the *Journal of Corporate Real Estate* examined different office buildings layouts and which of these were more user friendly (Feige, et al., 2013, p. 7). The study, for instance, found that offices having operable windows with naturally ventilated systems often scored higher in employee satisfaction (Feige, et al., 2013, p. 25). Besides basic levels of comfort, one must also take into account that in order for employees to be satisfied with work, they must also be motivated (Oseland, 2009, p. 245). Motivation requires stimulation to a certain degree, but too much stimulation can cause stress. This stress will not only reduce employee happiness, but also have an effect on productivity (Oseland, 2009, p. 245). Work engagement and comfort are directly related; the more engaged an employee is, the greater his or her chances are of being productive on the job. In fact, there was as high as a 25 percent difference in productivity found between comfortable and uncomfortable staff (“The Impact of Office Design,” 2005, “Comfort,” para. 1).

Google takes many steps to ensure that employees feel satisfied with the space they work in. At the Mountain View headquarters in California, there is an extensive variety of workstations to accommodate all employees. Large open windows give the space a friendlier feel, and the vibrant color schemes chosen are meant to inspire creativity (Google, 2013a). Although changing the structure of buildings would be difficult and costly for other companies to absorb, inspiration can be taken from the employee-focused attitude of Google. Comfortable seating is a simple way to increase employee happiness. Finding a strategy that will increase employee happiness will increase employee engagement which leads to a more productive environment.

The Importance of Productivity and Collaboration in the 21st Century Workplace

Although a positive correlation has been found between comfort and productivity, this does not necessarily prove that one causes the other. The productivity of a workspace can be determined by how efficient workers are as well as by how well the space is being used (“The Impact of Office Design,” 2005, “The Drive for Efficiency,” para. 2-3) There are a multitude of different elements that affect productivity, some of which include noise level, air quality, lighting, and spatial arrangement (“The Impact of Office Design,” 2005). Noise level--too much or too little--is consistently found to be one of the biggest problems in reducing productivity, decreasing it up to 27 percent when test subjects were attempting to complete complicated tasks (“The Impact of Office Design,” 2005, “Noise,” para. 1). In a separate study, although stress levels did not increase, participants subjected to low levels of noise were less likely to attempt tasks and, interestingly enough, did not as often correct their posture, which can affect productivity (Evans & Johnson, 2000, p. 779). According to a study done at the University of

Sydney, employees were more bothered by the noise when they could not see the source (Green, 2013, para. 4). This demonstrates one way in which open offices are more effective. In addition, lighting has an interesting impact on productivity. Natural or at least adequate lighting can increase productivity up to 20 percent and, as an additional bonus, will save employers energy costs since it will be unnecessary to use artificial lights (“The Impact of Office Design,” 2005, “Lighting,” para. 1).

Collaboration is also important to a company that wishes to better itself. Extensive research shows the value of collaboration, proving that it helps increase performance and understanding (Parkin, Austin, Pinder, Baguley, & Allenby, 2011, pp. 32-33). One particular study by Kelly and Caplan showed that the difference between the high and average programming performers was that improving performers had a larger network to consult about technical advice (Parkin et al., 2011, pp. 32-33). In addition to improving performance, collaboration also enhances creativity. Another study found that scientist colleagues who shared their ideas about data with one another had “insights that led to significant breakthroughs” (Parkin et al., 2011, p. 32). Cubicles actually decrease the chances of idea sharing among workers. It takes more effort to visit team members to share in a cubicle design than it would in an open space (Rosenberg & Campbell, 2014, “The Results,” para. 1-2). Fewer physical barriers in a more open floor plan means that coworkers are more likely to reach out to one another.

Google excels at demonstrating its ability to maintain collaboration. Google’s New York City campus was designed to “prompt employees to casually collide,” meaning the designers wanted to encourage conversation among co-workers which would naturally lead to constructive feedback (Alter, 2014, “Google’s ‘150-Foot from Food Rule,’” para. 1-2). Companies can take Google’s ideas and build off of them to increase cooperation within their own offices. Increasing

common areas to provide space for employees to share ideas is one simple way any company can increase collaboration.

Engineering Future Offices

As time and technology continue to morph the business world, new designs of office space will continue to shape how employees work. Many offices today have changed to open design in which employees bring their laptops to work and are free to set up in a number of places (Lagorio-Chafkin, 2014, p. 12). Because these types of offices provide for more collaboration, they increase productivity. This does not mean that the use of cubicles should be completely eliminated. Depending on their personalities, some people may find it difficult to work in open spaces and prefer the secluded feel of a cubicle (Saval, 2014, para. 11). By 2020 we will have a greater mix of generations in the workplace. Their different preferences only further prove the necessity of a flexible office (T. Lane, October 13, 2014, internal slideshow for United Health Group, slide 8). Many companies are already well on their way to rethinking office space. For instance, in June 2014 United Health Group renovated its offices, replacing all the cubicles with temporary work stations and collaborative offices (Lane, 2014, slide 17). The company has projected that since the change there has been a 10% increase in productivity and employee engagement (Lane, 2014, slide 5).

Taking all factors into consideration, the age of the cubicle is coming to an end. Employee satisfaction, workplace productivity, and collaboration are all possible to incorporate into an open design system. Open design allows for productivity as workers can move from place to place and more easily share ideas with one another. To fix the noise issue that often occurs with open offices, companies can easily create smaller conference rooms for employees to work in separate and more secluded environments. A more open plan also saves the company money

by ensuring that desk space will not be wasted if an employee is working from home. The future of the office is uncertain, but one thing is clear; an open office design is superior to the outdated cubicle.

References

Alter, A. (2014.) How to build a collaborative office space like Pixar and Google. *99U*.

Retrieved from <http://99u.com/articles/16408/how-to-build-a-collaborative-office-space-like-pixar-and-google>

Chen, S. (2011, February 8). Goodbye office space? The shrinking American cubicle. *CNN*.

Retrieved from <http://www.cnn.com/2011/LIVING/02/08/shrinking.american.cubicle/>

Eggers, K. (2012, April 24). You thought cubicles were hell? Try open plan offices. *AOL Jobs*.

Retrieved from <http://jobs.aol.com/articles/2012/04/24/you-thought-cubicles-were-hell-try-open-plan-offices/>

Evans, G. W., & Johnson, D. (2000). Stress and open-office noise. *Journal of Applied*

Psychology, 85(5), 779-783. doi: 10.1037//0021.9010.85.5.779

Feige, A., Wallbaum, H., Janser, M., & Windlinger, L. (2013). Impact of sustainable office buildings on occupant's comfort and productivity. *Journal of Corporate Real Estate*,

15(1), 7-34. doi: 10.1108/JCRE.01.2013.0004

Green, S. (2013). Research: Cubicles are the absolute worst. *Harvard Business Review*.

Retrieved from <https://hbr.org/2013/11/research-cubicles-are-the-absolute-worst/>

Google. (2013a). Inside Global Mountain View (Global HQ). *Google*. Retrieved from

<http://www.google.com/about/careers/locations/mountain-view/company/history/>

Google. (2013b). Our history in depth. *Google*. Retrieve from

<http://www.google.com/about/company/history>

Herman Miller, Inc. (2014). Robert Propst. *Herman Miller*. Retrieved from

<http://www.hermanmiller.com/designers/propst.html>

Hunt, R., & Caster, T. (Producer & Director). (n.d.). Go inside Google Garage, the collaborative workplace that thrives on crazy, creative ideas [Video]. Retrieved May 12, 2015, from

<http://www.fastcompany.com/3017509/work-smart/look-inside-google-garage-the-collaborative-workspace-that-thrives-on-crazy-creat>

The impact of office design on business performance. (2005, Autumn). *Management Services*,

49(3), 12-15. Retrieved from www.ims-productivity.com/page.cfm/content/Managment-services-Journal/

Lagorio-Chafkin, C. (2014). Great moments in the cubicle's 50-year history. *Inc.* Retrieved from

<http://www.inc.com/christine-lagorio/50-year-anniversary-of-the-cubicle.html>

Oseland, N. (2009). The impact of psychological needs on office design. *Journal of Corporate*

Real Estate, 11(4), 244-254. doi: 10.1108/14630010911006738

Parkin, J. K., Austin, S. A., Pinder, J. A., Baguley, T. S., & Allenby, S. N. (2011). Balancing

collaboration and privacy in academic workspaces. *Facilities*, 29(1/2), 31-49. doi:

10.1108/026327711111101313

Rosenberg, P. & Campbell, K. (2014, October 3). An open office experiment that actually

worked. *Harvard Business Review*. Retrieved from <https://hbr.org/2014/10/an-open-office-experiment-that-actually-worked>

- Saval, N. (2014, May 9). A brief history of the dreaded office cubicle: The inventor of the widely loathed workspace hoped it would bring flexibility and independence. *Wall Street Journal (Online)*. Retrieved from <http://www.wsj.com>
- Sullivan, T. (2013, January 24). Where your cubicle came from. *Harvard Business Review*. Retrieved from <https://hbr.org/2013/01/where-your-cubicle-came-from>
- Taylor, M. (2012, January 17). How have businesses changed in the last 50 years? *B2B Marketing*. Retrieved from <http://www.b2bmarketing.net/blog/posts/2012/01/17/how-have-businesses-changed-last-50-years>
- Taylor, V. (2014, March 26). Inside Google's Amsterdam office: Waffle ceiling panels, exposed brick and a caravan meeting room. Retrieve from <http://www.nydailynews.com/life-style/google-garage-meets-dutch-pride-amsterdam-office-article-1.1735871>