


2015-03-01

Knowledge Management: Collaboration versus Concentration in Open Plan Workspaces

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Recommended Citation

Walsh, J. (2015) Knowledge Management: Collaboration versus Concentration in Open Plan Workspaces, *DIT Level 3*, Iss. 12 - March 2015. doi:10.21427/D7NT9S

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DESIGNING WORK

Collaboration versus Concentration in Open Plan Workspaces?

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Abstract: This paper looks at the design of open-plan offices, particularly in relation to the impact of spatial design on different work-modes. It briefly examines the history of the open plan office, looking at how today's typical open-plan workplace has evolved. It considers how workplaces can be successfully designed to facilitate the seemingly conflicting requirements of supporting both collaboration and concentration.

Key words: cellular offices; cubicles; linear workspaces; bench workplaces

1. Introduction

Over the last 50 years the office landscape has been dramatically transformed as organisations have moved knowledge workers *en masse* from cellular offices to open plan workspaces. Open-plan offices are now predominant across both the private and public sector and across most industries and job functions. While cost, technological advancements and a more mobile workforce are certainly major factors in any organisation's adoption of open plan, well-designed "collaborative workspaces" are frequently credited with driving innovation and productivity through better communication and knowledge sharing, breaking down of silos, fostering staff engagement and team cohesion, and increased creative interaction.

While there is relatively little dispute that open-plan workspaces can enhance collaboration, an increasing amount of research describes the negative effects on other work modes. In particular, poorly considered open plan office layouts have been shown to have a negative effect on activities that require focus, concentration and contemplation, such as reading and research. A 2013 study conducted by Architecture practice Gensler showed that 53% of employees surveyed said they were regularly disturbed by others while trying to focus in open plan spaces (Gensler, 2013, p. 8) while another study found that 60% of open plan workers were dissatisfied with sound privacy (Kim & De Dear, 2013, p. 22).

Assuming there will not be a return *en masse* to the traditional, space hungry, cellular office for knowledge workers, what have we learned so far, and how can spaces be designed to support different work-modes, combining the seemingly conflicting requirements of supporting both collaboration and concentration?

2. Breaking the Wall: cellular office to cubicle to open plan

The idea of a modern, purpose-designed office came about in the late 19th century, facilitated by the use of steel girders to create large, open floor plates reducing the necessity for internal load-bearing walls that would previously have created rooms. However, up until the 1960s, open-plan areas were generally seen as a place for clerical workers, secretaries and typing pools, with single tables arranged in a strict forward-facing layout, not dissimilar to a typical classroom. Managers and knowledge workers were allocated cellular offices, with a desk, meeting space and even relaxation/casual meeting space.

Since the 1960s, there has been a dramatic change to the typical personal workspace allocation for the knowledge worker. "Action Office", a furniture system designed by Robert Propst for US Furniture manufacturer Herman Miller, was the first office "cubicle" system. Action Office was designed following extensive research into office work and information flows with the intention of providing more privacy to typical open plan workers such as clerical staff, with the purpose of reducing distraction and increasing productivity. In practice however, as real estate in major urban centres became increasingly expensive the invention of the cubicle facilitated the move out of cellular offices for knowledge workers. By in principle providing a level of privacy and personal space within a large open space, the cubicle was seen as an acceptable workspace for the increasing knowledge workforce.

However, according even to its creator Propst, "The cubicizing of people in modern corporations is monolithic insanity" (Lohr, 1997). The cubicle provided workers with a walled-off personal space, attempting to replicate a cellular office but on a much smaller scale (Figure 1). Cubicle walls, usually at 5ft (150cm) high, were intended to provide both acoustic and visual privacy, but in practice many workers felt more self-conscious as they knew they were surrounded and could be overheard by others but couldn't actually see them. From an information/knowledge flow point of view, the cubicle did nothing to improve workplace communication, with workers now required to phone (or later email) colleagues who they had no visibility of but who may only be a couple of "cubes" or aisles away. According to Francis Duffy, founder of DEGW, an architectural practice specialising in workplace design, cubicles, often referred to as "pig-pens", were a poor compromise describing them as "a disease, a pathology of the office.... It doesn't give you privacy, it doesn't give you control over your environment" (Kremer, 2013).



Figure 1: Typical office cubicle system

While the cubicle was the dominant workspace allocation for office workers in North America, the more European solution was an open plan layout of “workstations” or L-shaped “corner desk”. Typically, workers are positioned together in clusters of 4-6 people; while concentrating they could look away from others but turn around to face each other for casual meetings, team work etc. (Figure 2). The larger depth in the corner of the desk facilitated large CRT monitors, while to the left or right workers had a space to turn to for reading, writing and paper-work. Light-weight divider screens (as opposed to the thicker Cubicle screen) were typically 50cms from desk height – enough to easily see who was there or have a conversation if you lifted your head up, while giving a level of visual privacy when working.

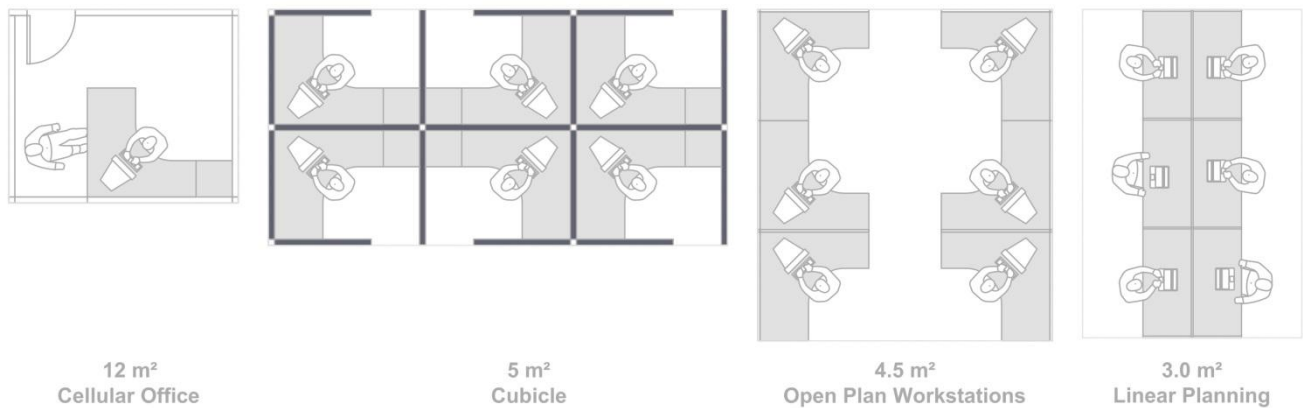


Figure 2: Evolution of the office layout with typical personal space allocation for the knowledge worker

As technology got smaller and flat screens replaced CRTs, the corner space of L-shaped desks became empty, unreachable and redundant. “Linear Planning” was born as the most efficient use of space (Figure 3). However, unlike L-shaped desks which create a rectangular “personal zone”, linear planning with straight desks fails to define a worker’s personal space.

New Ways of Working

A reaction to the inward looking isolation of the cubicle is the idea of “New Ways of Working”, a phrase coined by Francis Duffy in his book “The New Office”. Facilitated by advances in technology such as email, mobile phones, smart phones, VOIP, etc, work has become much more mobile and the lines between work and personal time and space have become increasingly blurred, as work has moved from desk to wherever you have access to communication/ technology. The inside of the workplace too has changed with many organisations adapting the idea of the “Collaborative Workspace”; where offices are designed with the intention of encouraging collaboration and increasing creativity, knowledge sharing, engagement and productivity.

When Pixar were building their new 15,000sqm campus in 1999, Steve Jobs insisted that there would only be one toilet block, positioned in the centre of the building. According to Brad Bird, a director at Pixar: “[Jobs] realized that when people run into each other, when they make eye contact, things happen. So he made it impossible for you not to run into the rest of the company” (Bird, 2008). The idea is that “chance” meetings and

conversations in open-plan environments can lead to unplanned collaborations that tend to happen less frequently in more traditional cellular office or cubicle workplaces.

The design of work environments for collaboration is now seen as a key contributing factor to business success. According to the Gensler 2008 Workplace Survey, “Top-Performing companies spend 23% more time collaborating than average companies and consider collaboration more than twice as critical to job success” (Gensler, 2008, p.12). The design of spaces that encourage collaboration has been widely adopted by the Technology sector and well beyond. According to Paul Pegler, of Her Majesty’s Treasury (UK), as part of the Treasury’s redevelopment project (2003) ‘more than seven miles of internal walls were removed.... This physical change was symbolic of much deeper cultural, business and technology transformation within the Treasury, where numerous time-bound organisational barriers were removed to support the more agile and dynamic organisation that is evolving today’ (Allen, 2004, p. xx).

In terms of personal space allocation, in some organisations there has been a shift away from “ownership” of desk or space within the office, with ideas like “Hot Desking” where workers work at whatever desk or space is available or “Hoteling”, where workers book a desk or space in advance of needing it, typically used by workers who are in the office less frequently or work across different buildings.

There has also been a clear movement towards the idea of the “bench” and “agile” spaces that can adapt to different tasks, staff numbers and needs. The concept behind the bench is very simple, and is based upon a large table, where anything that defines territory or impedes collaboration, such as legs, vertical supports, fixed side screens, are removed or minimised in order to create an uninterrupted, large work surface for any task from meetings, to paper work, to laptop use (Figure 3/4).

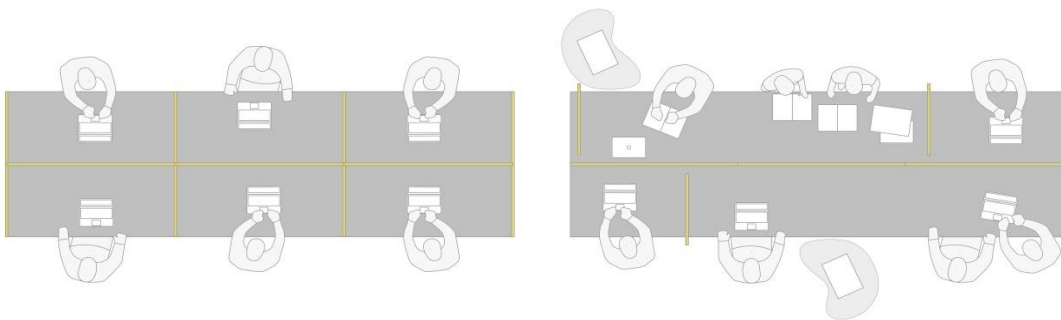


Figure 3: Linear planning versus bench

In reality, many organisations use these ideas of smaller personal space allocation and a more collaborative workplace as a way to increase employee density, but frequently fail to cater for the need for other work modes, particularly concentration.



Figure 4: Vitra Joyn, office “Bench” system.

However these solutions were never intended to be standalone and only really work as part of a well-designed scheme where other work modes (Gensler define 4 modes; Collaborate, Focus, Learn, and Socialise) are taken into account and properly catered for.

So what's the solution?

Gensler's 2013 Workplace Survey reported 2 key findings:

- “1. When focus is compromised in pursuit of collaboration, neither works well.
2. Workplaces designed to enable collaboration without sacrificing employee's ability to focus are more successful.” (Gensler, 2013, p. 6)

Choice is also pointed out as being particularly important by the Gensler study. According to Susan Cain writing in the New York Times, workplaces tend to be designed for extroverts who are happy to work in open plan spaces with plenty of interaction with others, while the needs of introverts are ignored.

“Solitude is out of fashion. Our companies, our schools and our culture are in thrall to an idea I call the New Groupthink, which holds that creativity and achievement come from an oddly gregarious place. Most of us now work in teams, in offices without walls, for managers who prize people skills above all. Lone geniuses are out. Collaboration is in.” (Cain, 2012)

But there is also a need for employee buy-in and compromise; assuming, given the choice, most people (even those extroverts Cain mentions) would choose a substantial four walled office, the solution is not to scale down our desires to a mini version (i.e. cubicle) but to create a multi-faceted, well designed workspace with a combination of personal space and shared amenities to provide suitable solutions for different work modes, such as quiet rooms (Figure 5) for individual study, meeting rooms of multiple types and sizes, break out spaces (Figure 6) for casual meetings and refreshment/ kitchen areas.



Figure 5: Quite rooms at Cisco, Penang, Malaysia



Figure 6: Yandex Stroganov office in Moscow, Russia by Za Bor Architects

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