Workplace Strategies for Dynamic Organizations

Excerpt - Organizational Dilemmas and Workplace Solutions - Workplace Cost, Density, and Effectiveness

Becker, F. (2000) Offices That Work: Balancing Cost, Flexibility, and Communication. New York: Cornell University International Workplace Studies Program (IWSP).

Under pressures to reduce cost, the first tactic for many organizations is to increase density. It is fast and relatively inexpensive, compared to leasing more space.

Density Varies Widely

Our research found tremendous variability in density across firms, and within the same office type. The eight firms studied, all with a common e-commerce business focus, ranged from a web-development group housed within a large corporation's headquarters and web-development groups spun off from large, established corporations, to startup dot.com firms.

The usable square feet using the IWSP Group Density measure (comparable to the Building Owners and Managers Association measure, but focused on the area where a group or department resides within a floor) for employees in team-oriented bullpens ranged from 51-106 s.f.; in cubicles from 71-144 s.f.; and in offices from 112-235 s.f.. Generally, but not always, the more enclosure, the larger the size range. The BOMA floor density measure showed the study firms ranging from 76 s.f. to 200 s.f.. The average s.f./person for different office types using the IWSP Group Density measure ranged from a low of 64 s.f./person in team-oriented workstation pods to a high of 153 s.f./person in private offices. The sample was too small to draw any solid conclusions, but it is worth noting that the lower densities (more s.f./person) were not always associated with the larger, more established corporations. Densities simply varied by office type within and across the business units studied.

Group Density (Average)	Company A	Company B	Company C	Company D	Company E	Company F	Company G	Company H
Private Office	132	134		112		235	152	
Shared Office		131	93		92		76	
Cubicle	144	92	70	49		120	71	
Pod						64		
Bullpen	51		57		63	61		106
Boma Floor Density (Average)	192	200	191	87	76	162	221	299
WSP Floor Density (Average)	186	200	177	87	76	155	221	287

Density and Cost

Team-oriented bullpens and pods reduce costs for a simple reason; they require less space than high-paneled cubicles and closed offices.

	Bullpen Config.	Pod Config.	Cubes	Office
Size of the Workspace	50 s q. ft.	75 s q. ft.	100 s q. ft.	150 s q. ft.
Number of Workspaces	90	60	45	30
Number of People in each configuration	90	60	45	30
Density per Person	110	165	220	330
Cost per Person @ \$20 per sq. ft.	\$2,200	\$3,300	\$4,500	\$6,600

Results of the cost analysis for three sites with a 10,000 square feet space plan. Source: Ramani, 2001

To capture the impact of different office types on cost, we did some simple "order of magnitude" calculations. A space plan with 10,000 s.f. was able to accommodate 90 workspaces in bullpen configuration (50 s.f. each), 60 workspaces in pod configuration (75 s.f. each), 45 cubes (100 s.f. each), and 30 offices (150 s.f. each). Assuming in all cases that of the 10,000 s.f. that 2000 s.f. would go toward support space, 3000 s.f. toward circulation space, and 500 s.f. toward what we called "inaccessible" space (e.g., server rooms not intended for daily work activities), this left 4500 s.f. for whatever type of office we were considering. Using this form of analysis, the floor density within each workspace ranged from a high density of 110 s.f/person (all bullpens) to a low density of 330 s.f/person (all closed offices). At an assumed annual rent cost of \$20/s.f., the differences in cost per employee ranged from \$2,200 to \$6,600.

While these cost figures are rough, they do capture the fact that there are significant reductions in real estate cost associated with higher density. When that fact is coupled with the less well-accepted one that the more open type of work environment actually enhances communication that promotes work effectiveness, one begins to have an

answer to part of the wicked problem we posed at the beginning of this report: How does one enhance work effectiveness while reducing costs? The answer, our research suggests, is more team-oriented bullpens and pods.

Our research, like others, , , shows that the typical high-paneled cubicle, the kind made infamous by the Dilbert cartoons, is almost universally disliked and generally dysfunctional. Contrary to conventional wisdom our research suggests, however, that the answer is not necessarily closed offices, but rather some form of team-oriented bullpen or pod. This kind of more open environment, if implemented on a small, team-oriented scale, provides opportunities for communication and concentration. And it can do it at lower costs (because of higher densities). Such environments are not perfect. None are. Our interview data show is that the presumed trade-off between the greater concentration and fewer interruptions in the private closed office, and the higher levels of communication but more distractions in the open office, is not as clear as commonly thought. By creating an environment in which workers get to know each other well, and can easily visually learn and observe cues about when interruptions are best timed, the more open environment of the team-oriented bullpen benefits both communication and concentration.

Preferences vs. Effectiveness

Such team-oriented offices are not the first choice of many workers, especially if they have not been personally experienced. But it is worth distinguishing between preferences and effectiveness. They are not always synonymous.

Most employees, when asked what type of office they prefer or feel they are most productive in, will answer "closed" office. If what they have experienced in their working life is an "open" office that is a high-panel cubicle, then it is not surprising that they would prefer a closed office. At least until recently, relatively few American workers would have experienced a well-designed cluster or pod arrangement. The predominant office type has been the high-paneled cubicle that flooded offices for the two decades between 1970 and 1990s (and which are by no means absent today).

It is also worth examining in closer detail the main complaints about "open" offices. These are about uncontrolled noise and distractions: overhearing co-workers (especially from different departments and disciplines) on the telephone and in informal meetings; and people "popping" in uninvited to chat or ask a question. To a somewhat lesser extent, concerns about confidentiality, especially in functions like human resources, finance, and legal, also frequently surface.

Such distractions undermine work effectiveness, particularly when effectiveness is defined individually and organizationally in terms of individual achievement or productivity. Without doubt, working with others is more difficult and requires more personal adjustments than working alone. But if the key is not maximizing benefit along any single dimension, whether comfort, cost, or individual performance, then the greater effort required in more team-oriented open environments may be justified.

Costs and Benefits of Individual Preferences

The key is deeply understanding not just how people are working currently and prefer to work, but how they might work with different technology and a range of different work settings available to them, inside and outside the office. Because a new way of working is uncomfortable, especially initially and without prior experience, does not necessarily mean it is inappropriate or will not come to be appreciated over time.

Our research suggests, for example, that younger workers are more interested in learning from their peers and more experienced workers, than are older employees. Locating more experienced staff in closed offices, while increasing their comfort level and allowing them to work more productively individually, has the potential to significantly slow the development and learning opportunities for the younger workers. It also has the distinct potential to support the freezing of the older workers' development and skills, since they also lose the benefit of being pushed by younger staff to learn new skills and think in new ways about problems they have developed a fixed way of approaching over the years. Given the need to balance cost and effectiveness, the better solution would seem to be office designs that are more open and dense at the individual desk level, thereby allowing for a good number of enclosed meeting and work areas while still maintaining a moderate density overall. With wireless telephony and laptop computers, workers can easily move to one of the closed offices for a small group meeting or simply to work without interruption.

Zoning

Zoning of activities and functions provides another option for dealing with different needs and preferences for concentration. Locating a software developer within overhearing distance of a marketing person generates conflict. They are working on different problems, using different tools, with different work styles. Some dogs and cats get along; but it is not a good idea to plan on it.

In several of our research sites, what made the team-oriented bullpen effective was just this sort of functional zoning. Software developers sat near software developers; human resource people sat near human resource people. Even, or especially when, crossfunctional teaming is desired, it is critical to provide clusters of people engaged in common work. Our interview data showed that concentration is possible in this kind of open environment because one could judge by looking at the other person and their computer when it made sense to interrupt and when not. It was the high-paneled cube, where to see what the person was doing meant, de facto, interrupting the person, that prompted dislike of "open plan" offices.

Another form of zoning combines physical layout and user protocols or planned etiquette. In this case, as was done in KPMG offices in Stockholm, a section of a floor can be separated by screens from a work area, with those in the "quiet area" not allowed to use a phone, talk with other people, or interrupt another person in the same zone.

Loosely-Coupled Settings

The notion of "loosely-coupled settings" suggests still another way of addressing this issue. Here, the workplace is consciously conceived as including settings both inside and outside the office, including the home, that are loosely connected by the physical movement of people and the electronic movement of information. Employees are not required to work at home, nor are they encouraged to stay away from the office for days at a time. Rather, employees are equipped with the technological support (high speed network access and laptop computers) that allow them to work from home whenever they choose, depending on the work they are doing, the stage in the project they are in, etc. As is the case with many university faculty, this means working at home in the morning, writing and doing other work requiring extensive concentration, and coming in to the office in the afternoon to meet with students and colleagues, deal with administrative issues, and so on. The key is to understand that the office is, for most people, a social space.

Turning the Office Inside Out

Our research, like all other research, cannot provide a definitive answer to every issue or consider every factor a workplace strategist faces. Rather, it strives to generate useful insights grounded in credible evidence that can influence the everyday decisions organizations make as they shape the workplace and its effects on those working in it. For those responsible for developing and implementing workplace strategies, our work over the past two years provides, we think, useful ways of resolving some of the competing pressures for reducing cost and increasing flexibility, while attracting and retaining staff and enabling them to work productively.

We began this report by talking about "wicked problems." They are so because by their very nature they embody competing interests and claims. The one hundred percent solution, the one everyone enthusiastically embraces always remains, like a rainbow, just out of reach. Our research does not change that. The employee who wants a closed

office, for reasons of comfort, professional identity, a sense of entitlement, or to support their own personal work style and productivity, is unlikely to welcome a more open, team-oriented environment. Yet our research suggests that work, even work requiring high levels of concentration, is ultimately a social activity. Individual performance is grounded in the performance of others. If more team-oriented environments can reduce costs, increase flexibility, and help build and strengthen the social ties that underlie the fast flow of information on which organizational agility ultimately depends, then we think such environments make sense.

One implication of this viewpoint is that we should consider turning inside out the way we plan offices today. Rather than thinking of the office as a place primarily for solitary activity, from which one occasionally breaks out in time and space to settings intended for social activity, we might design the office primarily as a social setting, from which one occasionally seeks out more private places for contemplation, concentration, and confidentiality. Both needs exist, but with the figure and ground, the primary and secondary functions, reversed. Part of this workplace ecology recognizes, as noted above, that not all work must or does occur in the "office" or in spaces assigned exclusively for one individual's use. The underlying premise is that space, ultimately, is not about real estate. It is about using all of the organization's scarce resources to their fullest potential to meet pressing business challenges. That means recognizing that the office as we have known it over the past 50-100 years is an "idea," not an indubitable form. It is shaped by values, technology, economics, and demography. It started out as a social space, and as we launch the 21st century, it may well become that again.

End Notes:

- 1. Rittel, H. and Webber, M. (1972) *Dilemmas in a General Theory of Planning*, Berkeley, Institute of Urban and Regional Development, University of California.
- 2. Becker, F. and Steele, F. (1995) *Workplace by Design: Mapping the High Performance Workscape*, San Francisco: Jossey-Bass Inc.
- 3. The IWSP research was conducted, in part, by graduate students Kelley Dallas, Amit Ramani, and Anne Scott as part of their Master's thesis research at Cornell University under the direction of the author.
- 4. See Becker, F., and Sims, W. (2001) *Offices That Work: Balancing Communication, Flexibility, and Cost.* New York: Cornell University International Workplace Studies Program (http://iwsp.human.cornell.edu).
- 5. Data was collected at 8 sites that included independent startup firms, corporate spin-off startups, and internal corporate web-related initiatives. Office types

- included private offices, high-paneled cubicles, low-paneled cubicles, shared enclosed offices, team-oriented workstation pods, and team-oriented bullpens. A total of 3,160 interactions among 329 people were observed over a total of 130 hours. Of the 229 completed surveys (47% response rate), 62% were male and 38% were female. Seventy-seven in-depth interviews were conducted.
- 6. Hitt, M. (2000) 'The New Frontier: Transformation of Management for the New Millenium,' *Organizational Dynamics*, 28 (3): 7.
- 7. Schendel, D. (1996) Editor's Introduction to the 1996 Winter Special Issue. *Strategic Management Journal*, 17 (2).
- 8. Dess, G. and Picken, J. (1999) *Beyond Productivity: How Leading Companies Achieve Performance by Leveraging their Human Capital*, New York: AMACOM American Management Association.
- 9. Eisenhardt, K. (1989) 'Making Fast Strategic Decisions in High Velocity Environments', *Academy of Management Journal*, 32 (3): 543.
- 10. McCue, G. (1978) Public Places and Private Spaces: The Psychology of Work, Play and Living Environments, New York: Basic Books.
- 11. Zelkowitz, M., Shaw, A. and J. Gannon (1979) *Principles of Software Engineering and Design*, Englewood Cliffs: Prentice-Hall, Inc.
- 12. Kellner, M. (1991) 'Non-Technological Issues in Software Engineering', *Proceeding of the IEEE 13th International Conference of Software Engineering*: 144.
- 13. Prusak, L. and Cohen, D. (2001) 'How to Invest in Social Capital', *Harvard Business Review*, June 86-93.
- 14. Cross, R. and Baird, L. (2000) 'Technology is not Enough: Improving Performance by Building Organizational Memory', *Sloan Management Review*, 41 (3):69.
- 15. Komaki, J. and Desselles, M. (1989) 'Definitely not a Breeze: Extending an Operant Model of Effective Supervision to Teams', *Journal of Applied Psychology*, 74 (3): 522
- 16. Nonaka, I. and Takeuchi, H. (1995) *The Knowledge Creating Company*, New York: Oxford University Press.
- 17. Mascitelli, R. (2000) 'From Experience: Harnessing Tacit Knowledge to Achieve Breakthrough Innovation', *Journal of Product Innovation Management*, 17: 179.
- 18. See Reference 8.
- 19. Lam, A. (2000) 'Tacit Knowledge, Organizational Learning and Societal Institutions: An Integrated Framework', *Organizational Studies*. 21 (3): 487.
- 20. See Reference 17.
- 21. Nonaka, I. and Konno, N. (1998) 'The Concept of 'Ba': Building a Foundation for Knowledge Creation', *California Management Review*, 40 (3): 40.
- 22. Seaman, C. and Basili, V. (1997) 'An Empirical Study of Communications in Code Inspections', *Proceedings of the IEEEE 19th International Conference of Software Engineering*: 96.

- 23. Comeau-Kirschner, C. and Wah, L. (1999) 'Holistic Management', *Management Review*, 88 (11):26.
- 24. Deveshwar, Y. (2000) 'The Era of the Multi-Faceter Leader', Business Today: 256.
- 25. Berreby, D. (1999) 'The Hunter-Gatherers of the Knowledge Economy', *Strategy & Business*, 16:52.
- 26. Brill, M., Weidemann, S. and Bosti Associates (2001) *Disproving Widespread Myths about Workplace Design*, Jasper, IN: Kimball International.
- 27. See Reference 10.
- 28. DeMarco, T. and Lister, T. (1987) *Peopleware*, New York: Dorset Home Publishing Co.
- 29. See Reference 2.