# New Metaphors for Office Design

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This paper by Jay Brand explores the irony of applying metaphors from information technology – a machine-based discipline – to move the field of office design away from a machine metaphor and toward more creative, motivating solutions for workers.

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## Some New Metaphors for Office Design

Although most of the businesses fueling the recently booming economy continue to experience changes at an ever-increasing rate, the office furniture industry represents one major exception. Indeed, the contract furniture market certainly benefits from businesses spawned to create distribution networks and the other infrastructure components necessary to support this explosive growth in technology and its many applications in consumer products, but it apparently has not undergone the same pace of transformation. Office workers demand ever faster computers, ever more convenient software, and flawless interfaces to link all of their gadgets and productive wizardry, but they seem forever content to implement this array of electronic magic inside the dull, lifeless, hopelessly uniform environments almost universally lampooned as "cubicles."

While information, computer, communication, and multimedia technologies endure a dizzying array of diversity and variety in their product offerings, the inside of most office buildings has changed comparatively little since the industrial revolution. Why does this apparent dichotomy exist between the advancement of the technological tools that "knowledge" workers take for granted and the environments in which that technology typically gets implemented? Why can't we experience the same kinds of changes in office environments that we have come to expect from information and communication technologies?

For answers, we must start with a few very important milestones in the development of modern offices, beginning with the industrial revolution. With few exceptions, many of the advances that resulted in huge increases in manufacturing and distribution efficiency for products like automobiles came from the basic strategy of "divide and conquer." The translation of designs into affordable consumer products demanded a very large, efficient process comprised of many different contributing subprocesses, each operating on the premise of massive routinization and ruthless cutting of waste. Wasted material, wasted movements, and wasted activities all contributed to a higher cost for the product. The answer was to have each of the myriad individual contributions to this vast mechanized system of production designed with ruthless efficiency to do the same thing over and over again in exactly the same way. The overall purpose of this wonderful mechanism would only be clearly visible from the perspective of management or the customer.

Thus did Henry Ford implement the ideas outlined by his buddy, Frederick Taylor, in the book, The Principles of Scientific Management. Leaving out some of the details for the sake of brevity, the basic development process went something like this: First, individual car chassis were laid out side by side in vast rows inside warehouses, and teams of engineers would move from one to another, contributing the same bolt or part to each one. Later, Henry hit upon the bright idea of moving the chassis past the workers rather than the other way round, and the assembly line was born. This represented the ultimate in process efficiency—no wasted movement, no superfluous activities—just efficient, hierarchical arrangement of workers and work processes, organized around building cars rather than to benefit workers. Indeed, individual workers were discouraged from thinking creatively; such control resided at the top, and robots (as they do now in many cases) could have done the job of most workers.

The bull pen offices that dominated the first office complexes were modeled after the same vision of efficiency. Providing the individual contributions that accumulated into professional products and services, office workers mirrored their blue-collar counterparts on the factory floor. Even the "floorplates" of early office buildings could well have supported assembly-line production processes: One worker's "output" became the "input" to neighboring workers, until some final product emerged from these white-collar factories. Ruthless efficiency and the elimination of waste at every level of the early organization reflected the mechanization so prevalent in manufacturing. Each worker contributed but a tiny piece of the overall production puzzle, and their uniform, repetitive tasks could be best supported by efficiently identical (easily designed, specified and monitored) environments.

The brief dalliance with open plan offices in the 1960s provided a much-needed change of perspective. For an historical moment, office environments were actually designed around the human needs of their occupants. Functional groupings and attractive complexity became part of office designs, a radical departure from the mechanical repetition and uniformity of assembly lines. Ironically, "The Action Office," an idea for flexible partitions and work tools to designate ever-changing "office spaces" within open-plan offices, eventually resulted in a return to mechanization, routine, and uniformity in office environments. As real estate costs began to soar in the 1980s, facilities managers increasingly used the "open-office" concept as an excuse to squeeze more and more workers into smaller and smaller, repetitive, identical spaces. Fewer and fewer of the necessary amenities for ideal implementation of the open-office concept—things like functional flexibility, personalization, plants, visually complex ceilings, sweeping views, tasteful use of color and architectural variety, and plenty of room—could be found in corporate offices, and the emphasis on individual (end-user) control of the work environment increasingly gave way to the centralized planning of facilities managers.

This shift back to the efficiency and mechanization of assembly lines has destroyed the original intent of the open office plan, with predictable consequences for individual office workers. We need some new, revitalizing metaphors to rejuvenate office planning and design. Ironically, I feel that some useful metaphors can be borrowed from that modern bastion of mechanization and efficiency—information technology. How about drawing a loose analogy between computer hardware and office furniture? In the same way that hardware provides the structural foundation for the infinite flexibility and variety of software platforms—which ultimately make computers useful—so office furniture and work tools should provide a supportive yet flexible environment for the variety of social networks and dynamic liaisons that constitute the activities that make modern offices useful.

The development of the technology and infrastructure to support the internet can augment this extended metaphor for office design. The internet functions much like a vast computer network, using temporary linkages among many different computers ("servers" and "routers") to relay messages from one user to another across vast distances, virtually instantaneously. While spatial location is essentially irrelevant to this digital communication process, the dynamic, functional connections that support internet messages have several parallels with the activities in modern

offices. Informal work groups form and disband in a seamless cornucopia of functional linkages. Furniture and work tools that can quickly convey a sense of place for teams, but can easily be re-configured to support individual work, represent the necessary structural "hardware" for this ever-changing social "software."

Just as the World Wide Web relies on an amalgamation of "lower-level" computer networks connected by transient, functional linkages in an ever-increasingly spiral of complexity, so the forming and disbanding of teams and other informal clusters derived from the shifting social landscape of flat organizational structures can best be supported by mobile, flexible, reconfigurable, end-user controlled office environments. Without such support, the organizations of tomorrow may not be able internally to adapt quickly enough to match the increasing speed of marketplace challenges.

To meet such shifting demands, user-controlled, mobile furniture, consisting of flexible, mobile infrastructures interacting with each other and an appropriate set of work tools in a variety of ways, might constitute the "hardware" and "firmware" of future offices. Within such physical environments—perhaps partly defined and constrained by functional spatial clusters (which themselves would be flexible and re-configurable), an endless variety of activities at the "software"—or social—level would thus find room to grow. Haworth's Crossings™ line of furniture comes close to this vision for the ultimate purpose of office environments—to unleash the infinite human potential smoldering in the dynamic social networks that characterize ever-changing organizational landscapes.

One final piece must be added to this extended information-systems metaphor for offices of the future—biological complexity. The self-evident success of the natural world suggests that we could do worse than mimic its obvious comfort with diversity and the relinquishing of control. Natural systems change and adapt to environmental challenges in unpredictable ways. For example, the interactions among the myriad pieces of an ecosystem cannot be controlled or predicted, but they have been successfully modeled as processes living on the edge of chaos--successfully walking the line between adaptive complexity and hopeless disorganization. Interestingly, the models of such systems thrive best when their "control"—the nodes where system updates begin—resides within the lowest levels, without a central plan. If a centralized control scheme tries to impose order and uniformity on such delicate, simultaneous homeostasis, the most surprising and adaptive responses of these systems cease.

Office environments in many ways must reflect the complexity and effective disorder of ecosystems. Perhaps also like ecosystems, offices may tend to thrive when control can be maximally exercised at the level of individual end-users. Ideally, their malleable environments can obey the dictates of the dynamic social mindscape, providing flexible support for technology and work processes that simply remain unpredictable, difficult to measure, but possible to harness with the right balance between divergent complexity and a common, passionate vision. From this freedom to explore many different possible scenarios will emerge exceptional creativity and innovation. Many ideas thus spawned may eventually fail, but a few might just change the world.

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