

Architectural Communities of Practice: A Preliminary Investigation of a Source of Professional Identity

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I spoke to an architect acquaintance of mine recently, a colleague with whom I had worked at a large corporate firm several years ago. She told me she had recently purchased a building, an old single story commercial storefront, that she planned to renovate into living and studio space for herself. "Finally," she said, "I have a chance to do real architecture." I knew what she meant. To be able to do "real" architecture is to be able to satisfy one's urge to design and build to one's satisfaction without having to compromise to building committees, bosses, and someone else's budget—all the encumbrances that make architecture more of a business enterprise than an artistic pursuit. Yet, I couldn't resist asking her, if those constraints are not integral to "real" architecture, then just what had we been doing at that corporate architecture firm? "That," she replied, "was just a job."

Why is it that we architects can so easily distinguish between our idealized image of architecture and the reality of practice? The answer lies in the way in which we construct our professional identities. When we think about the profession of architecture and what it means to be an architect, we think in terms of our collective identity as an "occupational community" (Van Maanen and Barley, 1984). Like Kuhn's (1970) notion of a scientific community, the occupational community of architecture has its own taken for granted assumptions, paradigms, symbolic generalizations, shared commitments, values, and exemplars. It is the "espoused theory" of our occupational community, Cuff (1991) suggests, that essentially frames the way architects think and act. When my friend distinguished between "real" architecture and "just a job," she was expressing the tension, identified by many observers (Cuff, 1991; Saint, 1983, 1996; Blau, 1984; and Larson, 1993) that inevitably arises when professional ethos is amismatch for actual practice. If this tension is indeed inevitable, then what can architectural educators do to help their students manage it in the future? "Can we," as Andrew Saint (1996) asks, "educate and empower the profession to negotiate the relationship between image and reality?"

A COMMUNITY OF PRACTICE PERSPECTIVE

As important as our sense of our occupational community is

to our professional identity, I believe that in our adherence to its idealized and often quixotic imagery and values, we fail to acknowledge the power of our everyday practices as a source for knowing who we really are. By solely identifying with a broader set of occupational precepts and values, we fail to recognize and assign proper accord to the local knowledge (Geertz, 1983) and values that shape and are shaped by our everyday work.

Recent literature in business management and organizational theory provides the background for this argument. Business management and organizational theorists in recent years have suggested that over-reliance on officially espoused theory—the canonical knowledge promoted by organizational managers as the right way to do things—can kill individual initiative and cripple innovation (see for example, Peters and Waterman, 1982). In response, management literature is giving the people that actually do the work their due. Non-canonical practice—the way work is actually accomplished—and local knowledge are now considered to be as valuable assets and sources of organizational learning and adaptation. Some of the best work on this line of thinking comes from Seely Brown and Duguid (1991) at Xerox Palo Alto Research Center. They suggest that work is accomplished in "communities of practice," communities of shared experience which acquire their own taken for granted assumptions, cultivate their own specialized knowledge bases, and which are guided by unique social and cultural patterns. The community of practice concept originated from the work of education theorists Lave and Wenger (1991). To these educators, learning is more than knowledge transfer or skill acquisition; it is "legitimate peripheral participation" in a community of practice, the opportunity to gain a foothold in, and ultimately become a contributing member of, a social group.

When we look at work, architectural and otherwise, from a community of practice perspective, we see that it requires more than just technical knowledge and skill, it also requires social and cultural expertise. There are certain rules, roles, perceptions, and sets of power relations to master (Lave and Wenger, 1991). These social characteristics of communities of practice greatly influence how people make sense of and

act upon work situations.

A community of practice perspective helps to address the issue raised in the "Speakable Practices" category in the call for submissions for this 86th ACSA Annual Meeting: "deciding the nature" of the reality of architectural practice. The concept underscores the observation, made by Cuff (1996) and others, that there is no single reality of architectural work, but multiple forms of practice. A community of practice perspective takes this observation further by helping us recognize that every work setting, whether it is doing "real" architecture or "just a job," comprises its own unique community of practice that is, in turn, situated in its own particular material, socio-cultural, and technological context. It is these contexts which account for a great deal of the differences among practice settings, and which make both technical and social learning necessary in order to transfer from one to another. Each community has its own of technical knowledge, "collective memory" (Orr, 1990), strategies, rules to follow, roles to enact, expectations to fulfill, management styles, blends of personalities, and relationships with clients, consultants, and competitors. This perspective also helps us bear in mind that communities of practice can be both homogeneous, consisting only of architects, or heterogeneous, consisting of individuals from various disciplines. Finally, it helps us see that relationships, both cooperative and competitive, among various communities and clients are fundamental to everyday practice. Thus, when we look at architecture from this perspective, we see a field which is far from being a monolithic occupational community; we see an interdisciplinary and interconnected community of communities of practice.

RESEARCH IN PROGRESS

My current research utilizes a community of practice perspective to focus on architects who serve the needs of large organization clients--clients that are involved in extensive and ongoing building design and construction programs. These architects are worth studying because large organization clients have become a dominant force in the architectural market and they are increasingly setting the agenda and standards of architectural practice (Gutman, 1988). According to the American Institute of Architects (AIA), one in six architects works in a corporate or governmental setting rather than in a traditional architecture firm, and this proportion is expected to grow (AIA, 1996). Further, more and more consulting architects find themselves providing services to experienced clients who have a clear sense of their building needs and who aggressively manage design to ensure the quality of their buildings.

My current research provides insights about the nature of practice, through ethnographic description and interpretive analysis of a single case study of a practice setting which serves an organization client. I use a community of practice perspective to provide leverage in understanding this practice setting, and to reflect on how educators might use the perspec-

tive to better prepare their students to negotiate the tension between espoused professional theory and everyday practice settings.

The community of practice that is the focus of this study is an interdisciplinary group of architects, engineers, construction managers, and user groups who have been assembled by an organization client to manage the construction of a new research and development facility. The client is Chrysler Corporation, a major automobile manufacturer and a prime example of the kind of client which influences on the manner and content of architectural work. This community of practice is especially interesting because it is embedded in the client's organizational context, it is interdisciplinary, and because it is an example of "project partnering," a management strategy that is becoming increasingly common in the design and construction industry. Partnering attempts to avoid the adversarial and litigious nature of most building projects by establishing formal processes to develop and maintain cohesive relations among the various partners, and align them in terms of culture, organization, training, and technology (McCullough, 1993).

Chrysler is currently involved in the construction of a \$360 million research and development facility which is being added onto the Chrysler Technology Center (CTC) in Auburn Hills, Michigan. The addition, known as the Powertrain Expansion, will house testing facilities for engines, transmissions, and other automotive assemblies. Over a period of six months, I have observed the architectural community of practice that is charged with managing construction for the project. While my findings are preliminary, they suggest that a community of practice perspective is indeed helpful in understanding the nature of this work setting, and provides leverage for delineating the differences between the image of architectural work suggested by professionally espoused theory and the work that these architects actually perform. In this paper, I discuss three characteristics of this community of practice which differ from an idealized view of practice:

1. The architectural practice setting mirrors the client's corporate culture.
2. Architectural work in this community of practice is interdependent and relational.
3. Design and construction practice are organized in the manner of a master builder.

1. THE ARCHITECTURAL PRACTICE SETTING MIRRORS THE CLIENT'S CORPORATE CULTURE,

We usually think of architects and clients as wholly separate entities who, despite their contractual relationships with each other, maintain distinct cultures and organizational boundaries. In this setting, however, the distinction between architect and client is blurred because the architectural community of practice is embedded within the client's organizational milieu. In fact, this community of practice is so highly

reflective of the culture of the host organization, it appears that the design and constructing of the building resembles the way Chrysler designs and builds cars.

Chrysler's corporate culture is characterized by its embrace of an interdisciplinary "platform-team" approach to product development. In the 1980s, Chrysler became deeply influenced by the "lean production" techniques utilized by Japanese automobile companies, most notably Honda (Levin, 1995; Yates, 1996). Chrysler abandoned its practice of, in Detroit parlance, "over the wall" vehicle development in which designers passed their work on to engineers, who in turn, passed their work on to manufacturers with little coordination among these groups. At the CTC, product planners, designers, product engineers, and manufacturing engineers are organized into platform-teams, a move which eliminates the barriers among departments that traditionally hamper communications among various functions. In addition, parts suppliers are brought in early in the process, and are essentially "given the keys" to the CTC so that their parts can be designed in coordination with the rest of the vehicle.

The Powertrain Expansion project is managed according to the same platform-team. Representatives from the consulting architecture, engineering, and construction management firms work side-by-side with Chrysler staff in a building adjacent to the construction site. Interdisciplinary work teams are assigned responsibility for major functional areas for the project: Powertrain Test Cells, Powertrain Support Labs/Rear Wheel Drive, and the Scientific Test Facility. Team members are mixed together both organizationally and spatially without particular regard to discipline or firm affiliation. They constantly interact with each other through formal meetings, informal conversations, and electronic media in order to monitor and supervise construction activities which are a short distance away. When a problem crops up on the construction site, very quickly a group of architects, engineers, construction managers, and client representatives can issue instructions for the contractors to proceed. Fluidity in responding to field problems is possible because the members of the community of practice are unencumbered by physical distance, organizational boundaries, and formal channels of communication.

Chrysler's embrace of the tenets of lean production is so pervasive throughout the corporate culture, that it has become second nature to the architects involved in this community of practice. Several years ago, the book *The Machine That Changed the World: The Story of Lean Production* (Womack, Jones, and Roos, 1990), made the rounds as "required" reading among Chrysler's various departments including the staff architects. Chrysler's staff architects have learned the language of lean production, and in the course of doing their work have adopted such lean production concepts as "continuous improvement," "statistical process control," and "stretch goals." Thus, a key characteristic of this architectural community of practice is that the architects have absorbed enough of the client's corporate culture to become part of the "machine" of lean production.

2. ARCHITECTURAL PRACTICE IS INTERDEPENDENT AND RELATIONAL.

According to the idealized image shared by the occupational community of architecture, architecture is practiced in its purest form when it is done autonomously; that is, in the manner of an independent artist-architect (Cuff, 1991). One implication of this idea is that all one needs is one's own talent and expertise to practice effectively. The nature of the Powertrain Expansion project and the way it is managed, however, requires this architectural community of practice to operate in a manner that is dependent upon day-to-day interaction and cooperation with client representatives and other design and construction professionals. Further, there is a high degree of reliance on relational practice, that is, the kind of work that is necessary to build and maintain a social atmosphere that is conducive to accomplishing group work. Jacque and Fletcher (1997) describe the work of relational practice as: smoothing conflict, creating a sense of team, sharing knowledge, and embedding competency in others. Relational practice is integral to all work settings, although its value is seldom explicitly acknowledged. In this setting, relational practice is explicitly acknowledged. A variety of tactics have been purposefully adopted by the community of practice to enhance its capacity to do relational work:

- The work setting is physically divided into distinct cross-functional team areas. Clients and consultants are represented on each team. Office partitions are low and circulation aisles are wide, a layout which encourages chance meetings and quick visits with one another.
- Various meetings are held many times throughout the week to ensure that individuals will have regular contact with each other and many opportunities to be informed of new issues, update others, and construct joint interpretations of issues that arise.
- Participants can learn the status of unresolved issues by looking them up in "Lotus Notes," a work group computer program. This program keeps track of all meeting minutes, and includes internal memos which detail pending issues.
- All members of the community of practice received special training in interpersonal relationships and group dynamics. The members also carry laminated cards in their wallets that describe the "rules of engagement" about team work (for example, "Have respect other people's opinions.")
- Various artifacts are displayed which express the spirit of teamwork. Hard hats, coffee mugs, magnets, a prominently displayed banner, team jackets, and other paraphernalia are emblazoned with the combined logos of all three consulting firms as well as the Chrysler pentastar.
- The community of practice and the major building contractors conduct regular self-assessments of their performance against a set of mutually agreed upon measures. Many of these items are distinctly relational in character: "Enjoy and appreciate others' individuality and give them

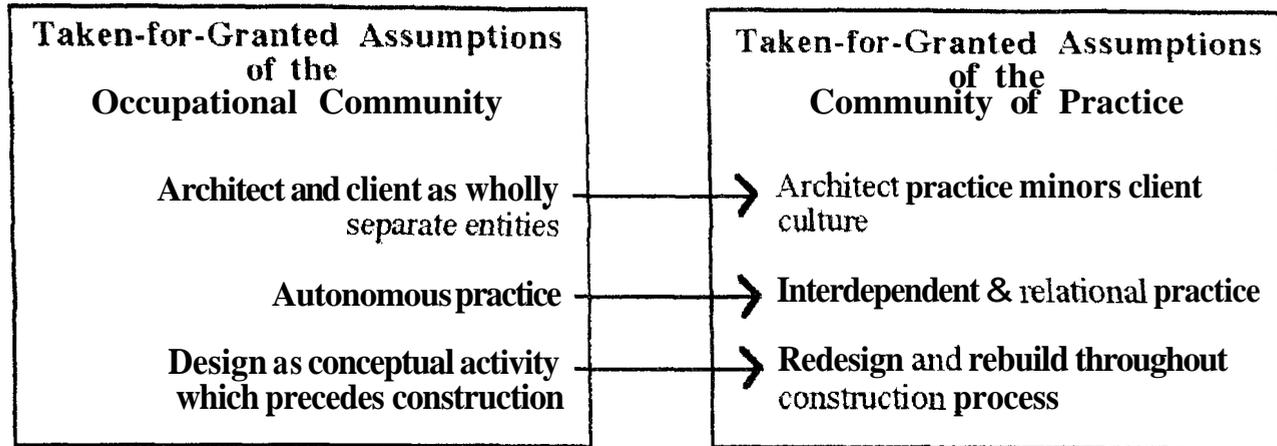


Fig 1 Assumptions of the occupational community subsumed by assumptions of the community of practice

space," and "Maintain high job morale and cooperative attitudes among all project participants."

While all of this overt emphasis on communication and team work may seem somewhat contrived (even some of the members sometimes joke about it), it is nevertheless apparent that this community of practice expends great effort to enhance its relational practice.

3. DESIGN AND CONSTRUCTION PRACTICES ARE ORGANIZED IN THE MANNER OF A MASTER BUILDER.

Espoused theory of architecture holds that design is an intellectual act that precedes and guides the physical act of construction. The value that architects place on design as a purely conceptual and creative activity is perhaps best expressed by Alberti's *De Re Aedificatoria* (cited in Ackerman, 1980):

"The building of something that seems functional, and which is without doubt suited to the program and the available funds is not so much the work of an architect as of an [ordinary] builder. But to design in advance, to formulate by good judgement what is to be resolved and perfected in every part, that is peculiar to the genius that we seek."

According to this statement, designing in advance of construction is what defines the role of the architect. In the Powertrain Expansion project, however, architects are integrally involved in construction management, and the division between design and construction is not so easily drawn. This project management approach therefore can be thought of as a contemporary version of a master-builder because the roles of architect, engineer, builder, and client are combined into a single community of practice. By intermixing design and construction disciplines and client representatives into a single work setting, the traditional disjunctions between building design, engineering, construction, and use are greatly

reduced (though hardly eradicated). Architectural plans and specifications were developed prior to construction, however the process of building the building is dynamic and improvisational. The original construction documents were but a snapshot in time—a best guess—and, since then both the technical complexity of the building and changes in the program necessitate close coordination between the actions of the building trades and architectural redesign.

A substantial amount of the need to redesign results from the input of the eventual users of the facility. The users are mostly automotive engineers, a group with a reputation for being incessant tinkerers bent on continuous improvement. Now that the building is under construction, the users see the spaces that they will move into and seek to alter it to suit their needs. Despite the fact that these changes increase costs and wreak havoc with the schedule, Chrysler's staff architects seem willing, even to relish in their ability, to meet the challenge. The staff architects are committed to creating a state-of-the-art research facility, and genuinely want to serve their "customers." One architect displays a sign at his workspace: "The customer is the ultimate judge of your work." Contrast this message with the oft-quoted declaration of Howard Roark, architect-hero of Ayn Rand's *The Fountainhead*: "I don't build in order to have clients, I have clients in order to build." For the architectural community of practice at Chrysler, clients and users are the reasons for building, not the other way around.

DISCUSSION

The preceding description of the architects at Chrysler demonstrates how a community of practice perspective provides theoretical leverage to provide insights about both the technical and socio-cultural aspects of a work setting. What has occurred in this work setting is that basic, taken-for-granted assumptions that are associated with the occupational community of architecture have been subsumed by new taken-for-granted assumptions that are shared by the members of the community of practice (see figure above). The idealized

image of what it means to be an architect has been reconstituted by these practitioners into a new set of assumptions that enables them to accomplish their work. This study makes clear that the differences between an idealized image of practice and the reality of everyday work is manifested at the level of the community of practice.

A PEDAGOGICAL OPPORTUNITY

For architectural educators, a community of practice perspective suggests that architectural design studios, which are the core settings for learning in the academy, are communities of practice in and of themselves. What is taught is more than simply design skills, it is a way of carrying oneself, relating to others, and engendering commitment to and passion for the field. It is wholly appropriate for design studios to continue to be vehicles for enculturation into the occupational community of architecture. Given the discrepancy between ethos and practice, however, it is just as important to prepare students for participation in communities of practice that await them once they leave school.

Professional training in architecture should not be viewed as socializing students to a pre-determined, static image of what it means to be an architect. Our image of the occupational community of architecture will always conflict with practice. This is true not only because of the sheer diversity of practice, but because architectural practice is always changing—it is constantly being reproduced and produced through the actions of individual architects in specific contexts. Educators cannot know what it will mean to be an architect for any one student because it is impossible to predict where and how he or she will work. Today's students will constitute and reconstitute for themselves what it means to be an architect throughout the course of their careers.

Educators can help their students manage the tension between professional ethos and actual practice by providing opportunities for students to develop the capacity to constitute and reconstitute what it means to be an architect. To accomplish this, educators might organize design studios to help students develop a critical stance toward the espoused theory of architecture. One way to accomplish this would be to organize a design studio based on the workings of an actual architectural community of practice. The idea is not to replicate practice, but to create a pedagogical environment which differs from it. If we take the Chrysler example as a model, for instance, a design studio might:

- Require students to work with "clients" so that there will be an opportunity for them to jointly construct an interpretive framework for judging the appropriateness of the work they produce.
- Locate the studio on the premises of the "client" rather than the architecture school building so that architecture students are encouraged to develop close relationships with their clients.
- Create a relational atmosphere by combining students

from a variety of disciplines, such as architecture, engineering, construction management, in addition to representatives from the client group. Organize students into interdisciplinary teams, and utilize various strategies to enhance their capacity for relational practice (for example: team symbols, training in group interaction, electronic communications, and regular performance assessments).

- To simulate a master builder organization, assign projects that require redesign of a project already under construction. In this scenario, the studio might entail constructing mock-up solutions that could then be re-evaluated, redesigned, and reconstructed in response to technical problems or programmatic changes, or simply for the sake of continuous improvement.

A design studio organized this manner might present some difficult challenges for architecture students. How might they reconcile their aspirations to be independent, autonomous practitioners with an interdependent and relational studio experience? This is where the studio instructor has a critical role to play. Supportive educators would be in a strong position to encourage their students to reflect on this non-traditional studio experience and process some of the difficulties they may feel. Educators would be able to encourage their students to appreciate the new technical skills and social knowledge that they developed in order to accomplish their work, and thus help students understand the value and power of the communities of practice in which they participate.

The point of using the community of practice perspective as a means to explore architectural work is not to denigrate the idealized image that we hold of our occupational community. It is to gain the perspective that a different lens affords of practice and an ever-changing professional environment. The key is to prepare people to see themselves as both members in good standing of the occupational community and as full and valued participants in their future communities of practice. If my friend who had been so quick to point out the discrepancy between "real architecture" and "just a job" had such an educational experience, she might have been better prepared to come to terms with, rather than despair over, the inevitable mismatch between the image and reality of practice.

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