

Constructing New Educational Paradigms: Creating Reconfigurable Organizations in Professional Design Education

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The fixed person for the fixed duties, who in older societies was a blessing, in the future will be a public danger.

– Alfred North Whitehead

SOCIETY, THE ORGANIZATION OF WORK, AND PARADIGMS FOR PROFESSIONAL EDUCATION

The paradigms that have driven higher education communities are founded on the principles of the organization of work that has influenced all of society. Professional education, accreditation, and professional Licensure have evolved from the expectations that a defensible, relatively fixed, body of knowledge exists. Change within the design professions begins with the transformation of the consideration of work in modern culture and society. Bodies of knowledge, that were once considered fixed, are being transformed by new forms of team organization, the increasing importance of the search for new knowledge, and entirely new roles for design professionals in society. The societal demand for rapidly reconfigurable organizations will dramatically effect how professional curricula are developed. The nature of the university is about to be entirely reconsidered.

Peter Drucker, in a foreword to the book *The Organization of the Future*, inspires thoughts regarding the evolution of society away from traditional work models. The earliest models of social organizations were focused on the specific work to be done. This was reflected in the control that the earliest design professionals derived from their positions within guilds. As large organizations emerged in the middle of the nineteenth century they came to be defined by the nature of accomplishing different aspects of work within a greater framework. This concept of organization, derived from the military organization of Frederick the Great, provided the foundation for the manufacturing business that grew in the early twentieth century. The shift in importance from the work itself, to getting the work done as one aspect of a larger purpose, is a basic refocusing of what is important and who is in control of the process. The evolution of the large corporation, led by Henry Fayol in the mid-nineteenth century, and developed by Henry Ford in the early twentieth century, led to the emergence of business units founded on core competencies with a market focus. This balance led to the birth of new disciplines, as there was a sudden need for those who could re-engineer products based on market demand. The reorganization of General Motors Corporation by Alfred Sloan, in the early-mid twentieth century, completed this transformation. "As General Motors goes, so goes the nation," became common wisdom in the United States. The compartmentalization that accompanied the development of the manufacturing unit firmly determined a specific role for the designer as a service provider to the business unit. While the master artisans/builders were always dependent on a patron, their role as generalists

was secure. The role of the design professional as a service provider to a business unit has defined a specific role for the individual characterized by a specific body of knowledge.

The formation of professional societies and university design curricula followed the evolution underway in society and began to appear in the mid nineteenth century. The definition of each of these is dependent on a defensible body of knowledge and an accepted pattern of performance. The increasing specialization of the design professions continued with great intensity throughout the twentieth century. Within the university specific curricula evolved into academic departmentalization. Just as the business unit evolved to balance core competencies with a market focus, so too the professional society and the academic department struggled to match their roles within differing societal organizations, even while they have been required to remain faithful to core competencies. The processes of accreditation and professional licensing emerged to insure that each understood and met their responsibilities. Leaving the discipline, crossing among professional responsibilities, or expanding the role of the design professional was discouraged. New knowledge was to be applied, not expected to be generated by the design professional or academician. The master artisan had been transformed into an individual with a particular role in a societal organization.

This is a time of rapidly transforming attitudes toward work and the nature of the organization as a social network. The nature of the organization in the new model is dependent on the people who comprise the social network. It is the strengths of individuals who define this reconsidered definition of work within a social network. Most significantly, the movement is away from the idea that there must be one ideal structure. This presents the opportunity to realize the value of diversity. Many structures, operating simultaneously, must be created for different kinds of work, people and cultures. The rate of change, which modern society has accepted as the norm, requires organizations that are constantly and easily reconfigured. Professional programs within major universities have evolved structures diametrically opposed to such a structure. The very nature of the university structure must be challenged. Department units have become a unit too large and fraught with the politics of exclusivity to respond to networked interests of individuals either within the university or in society. Single schools of thought no longer exist, nor is it appropriate for them to exist. The time has come to reconceive the organization of professional studies to reflect the principles of a reconfigurable organization.

CREATING THE RECONFIGUREABLE EDUCATIONAL EXPERIENCE

Creating a reconfigurable organizational structure requires a will-

ingness to question traditional structures and to let loose many assumptions that make life in the academy stable and predictable. Four fundamental issues must be addressed to stimulate the evolution toward a reconfigurable organization. The creation of efforts across traditional disciplines is the first stage of this evolution. Cross functional teams formed of individuals who compose and re-compose along special interests will stimulate change beyond the fixed limitations of traditional departments. Building on the capability related to specific functions that further challenge traditional notions of the academic department represents the second stage. The specific interests and expertise of individuals define functional groupings and provide a benchmark for the strengths of the larger organization. Such groupings provide a home for the individuals who configure and reconfigure organizations. The third important aspect of the evolution toward a reconfigurable organization is characterized by recognizing the importance of individuals as a resource to the organization. This attitude toward people requires a change in the manner by which individuals are motivated and awarded. Diversity in this structure is highly valued. Changes in tenure are unavoidable, but such change should benefit individual initiative greatly. Finally a reconfigurable organization must overcome the preconceptions imbedded in traditional notions of professional accreditation and licensure. The professional curriculum often represents the consensus of the expectations of both licensure and accreditation. Therefore, it is reasonable to expect a major transformation in the definition of curriculum, the means by which it is delivered, and its relationship to the conduct of the profession. No less should be expected than new forms of partnership between the academy and those who must accept graduates as colleagues. There is no substitute for individual accountability.

CROSS-FUNCTIONAL TEAMS: DECOMPOSITION AND CONTINUAL RECOMPOSITION

The dichotomy of caring for and imparting the legacy of a discipline, and the need to seek new knowledge for the very survival of the discipline, creates a stressful situation for traditional structures. A discipline will be rapidly co-opted if the individuals within it remain determinedly fixed on a single way of seeing. In the professional design disciplines individuals must be accomplished and responsible for both interest areas. The assembled team, rather than a fixed comprehensive office, is dramatically changing the conduct of professional practice. Teams are comprised of individuals from diverse backgrounds, representing an array of professions. Team members, who may never have worked together before, are often brought together for a single project with the possibility that they may not work together again. Such a dynamic practice model raises questions of coherence in action, team leadership, accountability, and the importance of a common vision among a team with frequently divided loyalties. Clients have also begun to respond to the assembled team by acting to divide teams and reassemble them by their own preference for individual team members. The ability to conduct design practice within the framework of a complex team is an essential aspect of the successful design practitioner. Cross-functional behavior is expected of the design professional.

The Parthenon, of ancient Athens, is an artifact that is an exemplary product of the master artisan tradition. It is a structure that demonstrates the connection between artisanship and the ability to communicate the values of a society. It is a structure that evolved, from the understanding of science, optics and mathematics, so as to represent a high point in human development. Was this building representative of a culture that evolved in a simpler era? The Greek city states created an environment of great volatility. At best they were a network of social relationships. Yet from this time many of the most fundamental philosophical beliefs evolved. The twentieth century has become a similar period of fundamental questioning in human history. The challenge of this time is dominated by the scale

of the social and technological network, and the capabilities it has presented to humankind. The time of self determined and easily defended disciplinary boundaries is past. This is the beginning of interdependency of people, ideas and disciplines as never before experienced in human development. The academy and the related professions must recognize this societal reality for the opportunity it presents. The potential for a new Parthenon, a structure for the ages, exists. Individuals in the academy and the professions must leave the well defined terrain of their disciplines and join together in metamorphosing ways to discover it. It is the responsibility of the academy to foster the exploration of such a transformation by providing the models for it to occur.

These observations lead to a recognition of the reconfiguration of the teams of individuals and the knowledge necessary to execute a project. Individuals cast in these roles must have the ability to move across bodies of information and relate to diverse professional and cultural value systems. The individuals who can not continually redefine themselves will certainly fall out of a reconfiguring organization. A professional curriculum that is continually evolving will be successful. The challenges to professional curricula include balancing the immediacy required of the conduct of practice with the continual reinterpretation of ancient precepts. Cross functional behavior among individuals is the foundation of a reconfiguring organization. The effect of cross functional relationships within the university will be the creation of curricular experiences outside of traditional department structure. The bringing together of individual faculty of similar functional interests, outside of a traditional department structure, to award an academic credential will become common.

CASE STUDY 1: CONTINUAL RECONFIGURATION

The Case

1. Observations from Professional Practice: Anecdotal Conclusions from 100 Visits.
2. Observations from Industry: The Chrysler Innovation Center.
3. Observations from the Academy: The University of Chicago.

The Implications

1. Traditional practice models are increasingly transformed by the networking of specific capabilities among a disparate group of individuals. The tendency for even the largest offices to seek collaborations has greatly enhanced the ability of individuals and offices to work on a diverse body of work.
2. International practice concerns is effecting the conduct of practice as well as the intentions of industry regarding product development.
3. The time for product to reach the marketplace following design is increasingly reduced by international competition.
4. Innovation within the university is equally effected by seeking connections among a diverse grouping of capability. These collaborations are encouraged at most institutions across disciplinary boundaries. There is an increasing emphasis on cross-functional and interdisciplinary activities.

Deductions

1. Continual reconfiguration is an imperative that will affect the formation of partnerships with industry, the establishment of coalitions among universities, and challenge the structure of the university.
2. The appointment of faculty, the balance of tenured versus temporary faculty, will be toward a more mobile faculty.

REFOCUSING ON THE WORK: BUILDING ON CAPABILITY IN A FUNCTIONAL ORGANIZATION

Just as the academy has been affected by the nature of the large organization in society, it will be transformed by the concept of

organizations as networks of competencies among individuals in a social framework. The fluidity of this new structure works counter to the historic organization of academic units into fixed administrative departments. Disciplines of study must seek the gray zones that define the opportunities in the networked reality of social organizations. Bodies of information on which disciplines depend for their self identity, have become so dynamic that the notion of departmental structure will only survive as it adapts to information flows from and to many sources related to specific functional capability. Departmental structures maintained as an insulation to change, sometimes defined as outside interference with faculty prerogative, will not survive. A significant restructuring is about to transform the societal definition of life in the academy.

The organization of the academy will yield to ever smaller units founded on specific capabilities. This will facilitate greater interaction among diverse interests of the university, unhampered by departmental interests, and facilitated by the need to build functional relationships. Such a strategy permits the pursuit of many different initiatives without disrupting the entire organization. The effects of this strategy will be the flattening of the structure of the university, and the reduction of an entire layer of administration.

CASE STUDY 2: SHARED LEADERSHIP AND SPECIFIC CAPABILITY

The Case

1. Observations from Practice: The Design-Build Team.
2. Observations from Industry: The Organization of the Future.
3. Observations from the Academy: Educating for the New Culture of Product Development.

The Implications

1. Individuals will find themselves in situations where specific skills are secondary to generalized abilities. The architect as a member of a design-build team must be facile enough to participate in discussions of financing, marketing, construction, and product development.
2. Organizations are evolving toward networked relationships where diverse skills accentuate individual limitations in favor of the strength of the organization.

Deductions

1. Individuals are expected to move from specific capability toward the generalizations necessary to perform as a full member of a team. Industrial designers must be able to perform in situations of manufacturing and cost analysis even while they must accept the contributions of manufacturing floor managers and sales people to the design process.
2. Organizations must accommodate greater team involvement.
3. A greater appreciation for, and an appreciation of, diversity must be more fully integrated into educational experiences.

THE PROFESSOR AS A HUMAN RESOURCE

The concept of tenure as the protection of intellectual freedom loses its meaning when ideas evolve with greater freedom outside of the academic environment. Individuals committed to a single mode of thought, like the individual of fixed duties, have become a burden to professional study. Even the most specialized historian must be prepared to seek new insights to ancient precepts. Tenure will evolve from a focus on protecting the nature of the work, to the concept of the individual as a maturing resource. This concept essentially challenges traditional notions of tenure. Issues such as organizational fit, the willingness and ability to work in cross functional situations, and the openness to continual learning will be defining characteristics of the professor. Similarly, the reward systems for the professoriate will include a flexible compensation plan rewarding directly the value of the individual to the organization, increased

involvement of peers in appraisal experiences, and greater opportunities to expand interests beyond traditional boundaries. While it is likely that some form of tenure will remain for years to come, great change will occur within its structure. Many institutions will continue to forgo tenure appointments in favor of termed contracts. Even in those instances where tenure is not an issue, the faculty as an organizational resource is a valid concept that will transform professional education.

The effects of these observations on the future of the university will be to reinforce the importance of the individual over the traditional structure of the department. Smaller units of organization will provide individuals with greater latitude to form the cross functional relationships that will foster new disciplines.

CASE STUDY 3: INTELLECTUAL ENTREPRENEURSHIP

The Case

1. Observations from Practice: Research, Product Development, and Patents
2. Observations from Industry: The Little Creepy Crawlers in the Night.
3. Observations from the Academy: Intellimedia.

The Implications

1. The creation of new knowledge has become the mark of a vital organization.

Deductions

1. The individual as a valuable resource is becoming a major new awareness of the large organization as the future of new organizations is dependent on the fluidity of product development and the creation of new knowledge.
2. Partnerships and joint ventures among individuals, even within large organizations, will propel the development of new knowledge and products. This tendency will reduce the importance of traditional departmental units and foster an even more horizontal organizational structure.

CREDENTIALS, MEASURES AND ACCOUNTABILITY

Traditional notions of credentials will give way to accountability through performance. Society that is evolving too rapidly for any single set of educational experiences to be uniquely appropriate. This is particularly true as professionals are called upon to move freely across international borders. The consensus required of accreditation and licensure is increasingly impossible to attain. The ability to get the work done in such dynamic situations will undermine traditional notions of academic credentials, accreditation and licensure. Licensure will continue to be a form of consensus regarding the entry level proficiency required of an individual, but with greater specificity for particular regions of the world. The concept of a single degree for licensure may in fact signal the last stand for accreditation procedures. It is a concept rooted in fixed duties for a fixed individual. Curricular experiences must therefore be established to refocus on capability and reflection rather than specific unchangeable bodies of knowledge. Curricular programs must be readily reconfigurable reflecting the demands on the organization of the university. Society is increasingly expecting of the university a flexible educational experience with great relevance to current issues. Such expectations are stimulating educational paths as diverse as the interactive internet and traditional distance learning courses, to community based work and credit for work experience. The delivery of course materials will continually evolve challenging traditional notions of studio and school based experiences. In an environment of continual reconfiguration accreditation loses its imperative. More important than accreditation will be the benchmarking of capabilities and contributions with peer institutions.

The professional curriculum embodies the values attributed to the

credentials that distinguish individuals. It is therefore fully involved with the measures associated with professional accreditation and licensure. A continually reconfigurable strategy for the professional curriculum reflects the continual reconfiguration underway within the successful design practice. However, the freedom to move with such responsiveness may call into question the processes related to accreditation. It will not be possible to achieve the broad consensus necessary if every aspect of professional practice and study is continually reconfiguring. Accountability for the educational organization will migrate more directly to the individual student and to the professional constituencies of a university, thereby moderating the responsibility presently felt toward national organizations.

CASE STUDY 4: ACCEPTING ACCOUNTABILITY

The Case

1. Observations from Practice: The Horizontal Professional Organization.
2. Observations from Industry: The Ecology of Commerce and the Interface Sustainability Report.
3. Observations from the Academy: The Ecology Technon and Regenerative Studies.

The Implications

1. Connections between commerce and the implications of commerce on the environment have stimulated the necessity of individual accountability at the highest corporate levels. Such accountability has become specifically targeted at the actions of individuals.
2. In professional design practice accountability is directed to individual performance by law.
3. Individual annual evaluations, reports and career development plans have become an expected aspect of academic appointments. Such reports, although fairly recent, are beginning to be closely monitored.

Deductions

1. Individual accountability is increasingly an expectation of leadership.
2. There is greater concern on issues of ethical behavior.
3. Educational preparation is expected to prepare individuals to make decisions in conflicted situations.

CONCLUSION

Our troubled planet can no longer afford the luxury of pursuits confined to an ivory tower. Scholarship has to prove its worth, not on its own terms, but by service to the nation and the world.

— Oscar Handlin

The evolution of fixed attitudes into reconfigurable strategies for professional education requires considerable change in every aspect of the curriculum and the professorate. The benefit of such an effort will be reflected in a continually evolving, enriched environment for study and practice. Such a strategy places value on the individual, and the willingness of individuals to make connections among diverse aspects of information and experience. Where there is now a reluctance to venture beyond traditionally defined departmental structures, enthusiasm for the frontiers found between traditional disciplines must be apparent. The university must become a place continually being redefined by simultaneous efforts of individuals to seek new partnerships. Reconfiguration in professional education will depend on the following stipulations.

1. Cross-functional activity, reaching beyond the traditional notions of disciplinary knowledge, must be encouraged. Faculty relationships fostering connections directly related to functional, rather than departmental interests, will shape the curricular experiences

of the future. Faculty will be expected to aggressively seek out partnerships across the university.

2. The departmental structure typical of the modern university will yield to groupings of faculty directly related to functional interests. Such interests, including community-based design, computer visualization, and structural investigations among many others, evolve from cross functional activity and will stimulate it further. The implications of this on the university organization will be to remove a level of administration and to entrust more to the faculty. The search for new knowledge will be dramatically shaped by new functional relationships.
3. A fundamental reconsideration of the role and the systems of reward for the professor must take place. Cross-functional activity begins with the experience and expertise of the professor. Teachers will be expected to contribute a form of entrepreneurial energy to the university. Further, teachers will be expected to be continual students thereby remaining at the forefront of the creation of knowledge. The university will have to evolve more flexible reward systems that recognize the value of the individual to the organization rather than any formal recognition of status. Similarly, greater emphasis will be placed on peer review for recognition.
4. Traditional measures of accountability, accreditation, and licensure will give way to the rapid reconfiguration of society and thereby professional design practice of every kind. Curriculum, very much a by product of traditional measures, will undergo continual reconfiguration similar to what is being experienced in the profession. Fixed notions of curriculum depend on fixed notions of the profession and professional responsibilities. Fixed notions lead to fixed people rather than the diversity of talent required in the profession. Therefore, it is reasonable to expect that new instructional methods and technologies will be employed to dramatically effect traditional ideas about curriculum. Traditional methods will be recombined with entirely new strategies.

Continual reconfiguration of societal expectations leaves those in education and practice only the option of creating readily reconfigurable organizations. There is great hope in this challenge. The study and practice of architecture and design will be greatly enhanced by the diversity of thought and action that will follow. The traditional organizational structures have carried the academy as far as is possible within their potential. The reconfigurable organizational structure will dramatically push the academy forward to the benefit of the study of design.

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