DISCOVERING DESIGN IN THE ORGANIZATION: REFLECTING ON TRENDS IN DESIGN AND MANAGEMENT

ABSTRACT:

This exploratory paper looks at trends in design and management. Its aims are a) to familiarize designers with management practices and theories that directly relate to design methods and design principles: *Evidence-Based Management*, *Design Thinking*, the *Design Sciences* and *Design Management* (which has its roots in design practice); b) to show how each approach interprets design thinking and design methods for a particular management area; c) to point to the potential of fragmenting design within the organization and finally, d) to call for more design research into design and the organization.

1. INTRODUCTION

Management has been aware of design for a long time. However, only recently has management become interested in the activities and the principles involved in designing. There are now several areas in management and organizational studies in which design thinking and design methods are consciously being looked at. Each study area serves a different purpose. To illustrate this, this paper uses the examples of Evidence-Based Management, Design Thinking and the Design Sciences. Each represents a separate research effort into design and the organization and approaches design from a different angle in a particular management context. This is strikingly different from another stream of research and practice on the topic, Design Management. Design Management has its roots in design practice. Evidence-Based Management, Design Thinking and the Design Sciences, are united by their effort to bring design practice or design thinking to managers. In contrast, Design Management has focused on instilling management skills in designers.

This paper reports on recent efforts in management and organizational studies to utilize design thinking and design methods. It then explores the implications of each approach for design research. Here it highlights the possibility that the already deeply fragmented studies of management and organization might impose the same fate on the art of design. For example, Evidence-Based Management (Rousseau 2006) explicitly focuses on design methods in the absence of design principles. On the other hand, Design Thinking (Martin 2007) emphasizes integrative thinking without being explicit about methods. These tendencies to fragment design in the organization find further manifestation in research into the Design Sciences (see Journal of Applied Behavioral Sciences, August 2006). The author then offers an alternative way to view these developments, following Claude S. George, Jr. (1968) analysis of management thought and its history. From this vantage point, we can embrace the various efforts at design as newly emerging forms of design in the organization.

The paper begins with a brief description of *Evidence-Based Management*, *Design Thinking,* the *Design Sciences* and *Design Management*. Subsequently, I explore the differences in their basic concepts and examine how each links (or does not) to design principles and design methods. This allows us to map *Evidence-Based Management* (Rousseau, 2006) against *Design Thinking* (Martin, 2007), the *Design Sciences*, and *Design Management* from the perspective of design research. With this in mind, I turn to the problem of fragmenting design in the organization. I use the example of the Tax Forms Simplification Project by the United States Internal Revenue Service to show that this can be a problem for design.

2. DESIGN AND MANAGEMENT: FORMS AND CONTENTS

I discuss three current explorations into design from the management field (Evidence Based Management, Design Thinking, Scientific Management) and relate them to the current explorations into design and the organization by design management (problems: what is design management? What is design? What is management? Who is a design manager?). Design Management might be able to prepare designers for their leadership role in the organization.

EVIDENCE-BASED MANAGEMENT

Evidence-Based Management (for convenience I will use the abbreviation EBM) is a significant development in management practices that signals a shift from decision-making to decision-generation. EBM originated in the medical field in the form of Evidence Based Nursing (Rousseau 2006). The Centre for Evidence Based Nursing at the University of York defines quotes the following definition from DiCenso, Cullum and Ciliska (1998):

> Evidence Based Nursing is the process by which nurses make clinical decisions using the best available research evidence, their clinical expertise and patient preferences, in the context of available resources.

EBM emphasizes small experiments that produce leaning and insight, challenge current conventions and generate new paths for solving organizational problems. With its emphasis on making and evaluating (trial-and-error), EBM connects directly to design methods. It focuses on continuous iterative processes that involve prototyping, testing, evaluating, and refining. In addition, EBM suggests that the organization is no longer viewed as a kind of Über-Form from which all internal activities flow. Instead, it is turning into a prototype (Pfeffer and Sutton 2006). EBM facilitates the shift form Organizational Design conceived of as "form" (in the way of structure, hierarchy, layout) to "forming" in the sense of "designing" the organization. As it is doing so, it is interesting to notice that EBM is neither explicit about design thinking nor about design principles. In the extreme this could mean the employment of design methods in the absence of design principles.

MANAGING AS DESIGNING

Managing as Designing (Boland and Collopy 2004) is a consequence of the design and construction of a new business school at Case Western Reserve University in Cleveland Ohio. Studying the design process of Frank Gehry, Boland and Collopy became interested in design thinking and design methods to address "wicked problems" (Buchanan 1992) in the organization. A conference, a book, and a video presentation established Managing as Designing quickly. However, there have been few developments recently and it appears that EBM might have emerged in response. The contribution of Managing as Designing is its shift from Design to

Design*ing* in the organization. Boland and Collopy (2004) have therefore created a bridge for design into the organization itself and with that increased the potential for design to effect changes.

DESIGN MANAGEMENT

Design management started out with a rather simple task: familiarize managers with design and designers with management (Borja de Mozota 2003). This need for education on matters of business for designers and for matters of design for business managers led to the establishment of the Design Management Institute in1975. The DMI is still the most prominent face of the design management movement. However, while there are more corporate design managers today than ever, there is also increased confusion about what it is that a design manager does or what design management is (Best, 2006). As the role of design in the organization is in flux, the role of the design manager is shifting as well. It appears that for a long time, design management meant to put "management" into design. Now that organizations are seeking alternatives to their existing management models, the trend is to put "design" into management.

Design Management constitutes an effort by designers to move up in the organizational hierarchy, into the ranks of managers. Designers would acquire management skills and then be in a position to lead an organization's product development projects. He or she would do so in a more effective manner than a manager without a design background, as he or she would understand the creative processes and the needs of creative talent. Sometimes, however, the role of the design manager has been closer to one of product development manager who has her roots in the field of engineering.

The potential for design managers to instill changes in the organization is great. However, more often than not, design managers are trained to control, contain and sustain design initiatives. This leaves little room for inquiry and invention. If Design Management continues to focus on managing the design process, it is actually limiting the role of design in the organization. Design Management as it is currently understood and practiced, actually prevents design thinking and design methods to infiltrate the organization. In an ironic way, Design Managers might actually function as gatekeepers that keep design away from the organizational core.

THE DESIGN SCIENCES

The Design Sciences are emerging in the areas of behavioral sciences.[1] In the US, the National Science Foundation ITR Science of Design Award promotes research into the Science of Design.[2] Underlining its

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[1] See for example: Bate, P. ed. Bringing the Design Sciences to Organization Development and Change Management. Journal of Applied Behavioural Sciences, Vol. 43, No. 1 (March 2007) or Boland, R., Jelinek, M., Romme, G. Organization Studies as a Science of Design. Organization Studies, Vol. 26, No. 9 (2005).

technical interpretation of the design sciences, the foundation offers awards "for projects that will bring creative, scientific advances to the design of software artifacts and systems."[3] The Dutch *Design and Science Community*, in contrast, "discusses the relationship between Design and Science"[4]

Design researchers, too, are exploring the concept of combining the arts of design with the measures of science. Ken Friedman (1997) describes the "science of design" as "a warm, rich science that combines industry and art" before he admits the "the challenge [...] to shape an effective process of design that yields effective outcomes." He sees the benefit of Scientific Design in allowing the design process to become visible and therefore traceable. Further, he argues that the "scientific" design approach means that one "starts with the parameters of the problem," unlike in a non-scientific design approach, "with the look and feel."

The idea of design sciences is problematic since design, while systematic and rational, is not a science in the traditional sense. At this point, it appears that researchers engaging in the design sciences are mostly concerned with applying scientific tools to study and capture design thinking and design methods. Promoters of design sciences tend to argue that they are employing managerial tools to "translate" the complex and fuzzy aspects of design into manageable programs and spreadsheets. By imposing a scientific framework on design thinking and design methods, the very potential of design to instill new ways of thinking and behaving is compressed and absorbed by the existing organizational environment.

DESIGN THINKING

Design Thinking appears to be the most comprehensive effort to date to explore the role of design from a management perspective. Dunne and Martin (2007) define design thinking as "approaching management problems as designers approach design problems." Design Thinking is closely connected to strategic management (see for example Mintzberg 1994, Liedtka 2004, Ravasi 2005). Design Thinking does emphasize design's ability for inquiry and thus seems to generate a role for design in the organization that is relatively free from existing management paradigms. Design Thinking is also seen as a force in innovation, as demonstrated by its inclusion in the annual innovation conference by the Product Development Management Association (PDMA/IIR Front End of Innovation 2007). It is curious, however, that inquiries into design principles seldom find their way into the exposés on design thinking by management scholars and practitioners. What is perhaps more disconcerting is that "design thinking" as it is currently being explored in management gives the

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[2] Quote taken from http://www.nsf.gov.
[3] Ibid.
[4] Quoted from http://www.designandscience.org. Last accessed August 31, 2007.

impression that it is separate or distinct from "design" when it is at the core of design.[5] Explorations into Design Thinking by design researchers are about core principles centering on people. For Richard Buchanan (2001a and 2001b) for example, it involves the first principle of advancing human dignity and can be traced to four generating principles.

In summary, we might say that design in the organization is currently being explored around shared activities and creative methodologies but that design principles have yet to be addressed or employed. There are several different forms of design research that all have implications for the role design might have in the organization. What emerges from the above discussion is that different management specializations are appropriating design for their purposes. The danger is then that design methods and design thinking are being locked up in management silos from where it can no longer apply its core strength, which is to integrate the very same isolated and disconnected organizational areas. There is then the potential consequence that managers begin to doubt "the power of design" and dismiss it as a fad. As we shall see in the next section, designers themselves sometimes contribute to the impression that the activities of design can be compartmentalized. The example of the IRS Tax Forms Simplification Project also shows that in the outcome both the organization and the designers suffer.

3. DESIGN IN THE ORGANIZATION: A FRAGMENTED EXAMPLE

In systems design, the problem of fragmenting design activities has been noted early on. For example, Bruce Archer (1965) referred to product development in organizations as a "relay race:"

> Research people conduct their own research tasks and hand over their result—like the baton in the relay race—to design people. Design hands over a roll of drawings to development people. Development hand to production and production sales.

In design practice, this can have serious consequences, as the outcome of the Tax Forms Simplification Project by the United States Internal Revenue Service (IRS) shows: In 1978, the General Accounting Office (GAO) published a report on the Internal Revenue Service's efforts to make itself more accessible to the American people.[6] The GAO recommended the IRS seek outside help to "further simplify" its tax forms.[7] While the GAO acknowledged that the IRS already had tried to offer simpler forms, the report bluntly stated that any further simplification the GAO deemed possible and necessary required expertise the IRS did not have within its ranks.

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[5] See David Dunne's commentary and critique to his interview with Roger Martin in Academy of Management Learning & Education 2006, Vol. 5, No 4, p. 517.
[6] Further Simplification of Income Tax Forms and Instructions is Needed and Possible, GAO Report No. GGS-78-74.
[7] Ibid.

The IRS had little choice but to follow the GAO's recommendation to create an Executive Level Task Force and to issue a Request for Proposal (RFP) that invited external expertise to solve this problem. The Executive Level Task Force, referred to either as the Tax Forms Simplification Control Group, or the Long Range Tax Forms Simplification Group, was personally led by the Tax Commissioner and involved all senior IRS officials at the time. The RFP attracted many proposals. A consortium under the leadership of a renowned New York design consultancy, received a two-year contract in September of 1979.[8] The design firm had established a reputation for Plain Language issues and demonstrated its competence as participants in an earlier design project. In short, a design consortium was pulled together to redesign the US tax forms so that they might be more user-friendly for the US Taxpayers. The design consortium included experts in user research, usability research, Graphic design and Plain Writing. The involvement of the IRS as an organization was limited from the beginning, as this statement from the key graphic designer shows:

> The project was successful in that it was kept to a small group of people that shared ideas and pulled all of our good thoughts together. We had a big amount of freedom.[9]

According to this graphic designer, the design team did one "walk-through" through the IRS during which they got to meet the in-house designers. These in-house designers, however, were not involved in the redesign and had little contact with the external designers. The lack of involvement of those people who issue and maintain the existing tax forms simultaneously presents a lack of learning opportunities for the organization and the design team. From the theoretical perspective developed here, the fact that the design team did not identify and consider this internal group as users, counts as an oversight. Instead of bringing this group of people along with the journey, the design team preferred to dismiss their input since "these in-house designers, they were not the very best designers and they did not have the freedom we had in generating new ideas and concepts." Says a former project member:

> We only worked with a handful of people at the IRS. These were open thinkers who got a special assignment in addition to their other responsibilities.[10]

But the system from which parts were selectively taken in the re-design, pushed back by selectively picking from the results, as the visual designer summarizes: "The IRS accepted a number of fairly original ideas but was unable to accept the overall package."

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[8] This date is established in the report *Tax Forms Simplifications Project: Background, Development, and Status*, prepared by design firm on March 8, 1982.
[9] Author phone interview, April 30, 2005.
[10] Author phone interview, April 30, 2005.

Eventually, the IRS drafts a final report on the Long-Range Tax Forms Simplification Study of which the Tax Forms Simplification Project became the cornerstone. Roughly a month later, the design firm rebuts some of the findings in the IRS final report and expresses its frustration with the project and the organization. The design team mourns a "lost opportunity for major simplification."[11] "The IRS," the design team wrote in a bitter rebuttal to a draft of a final report by the IRS to the project,

> …chose to select bits and pieces of our simplification concepts and overlay them on existing forms. The resulting amalgam falls far short of the comprehensive simplification that the project sought to achieve and represents an irretrievably lost opportunity for fundamental simplification.[12]

There are at least two lessons in this example that relate to the fragmentation of design: First, we can see how designers themselves can contribute to fragmenting design. Second, we can observe how the separation of design activities can harm the design inquiry and prevent the design outcomes to penetrate the organization. While this might be easily dismissed as a historic example, it reminds designers (and hopefully managers) that the innovation they seek and want to generate greatly depends on their abilities (and willingness) to overcome existing fragmentations. Claude S. George Jr. (1968) shows us how we might accomplish this. In his book, *The History of Management Thought*, he "discusses the various schools of management thought and shows the origin and development of each." Perhaps there is a need for something similar in the area of design and the organization. It is quite difficult for designers (and managers, I would argue) to keep up with the different developments in this area. There exist no central areas where one can get information or education on the topic and the issues. It might be too early for a "history," but it might be the right time to begin to "knit together into a meaningful whole the many of the fragments of [design in the organization] that make up the history of this emerging profession."[13]

4. CONCLUSION

This essay shows the importance of studying design in the organization from a design perspective. There is much utility in design for organizations. But in order to become and remain effective, designers need to be able to distinguish between the kinds of design that are becoming or are already part of the organization. As individual, specialized management areas appropriate design, we begin to see a tendency to separate design principles from design methods. This may not be new, and many forms of design have been with the

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[11] "Response to the IRS Report," Final Report Tax Forms Simplification Project prepared by design firm, page 66.
[12] Ibid.
[13] Quoted and adapted to design purposes from the backcover of The History of Management Thought.

organization for a long time. But now that many organizational hopes for innovation and change rest on design, the stakes are rising. As part of the discovery of design in the organization, we need a greater understanding of the particular forms of design in the organizational context. This paper is merely offering a few salient examples from the field of management but there are many more "organizational arenas" in which design is being discovered and explored. These include, for example Innovation, Creativity, and Product Development and approach design from other specialized research domains.

Design in the organization is emerging as a significant research area for design theory and design practice. So far, designers have been conspicuously absent or mute. The purpose of this exploratory paper is to provide new avenues to familiarize designers with how and why design is entering organizations. When fragmentation is the product of the efforts to understand the proper role and place of design in, with and for the organization, both designers and managers have failed—to the detriment of the organization. The author concludes that now is a good time to engage managers and organizations in a conversation about design's ability to overcome fragmentations rather than using design thinking and design methods to reinforce them. Now is the time for design researchers to engage in these important discussions to the benefit of organizations and the emerging field of design alike.

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