Design and Administrative Behavior: How Designers Fit into the Decision-Making Process of Organizations

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Herbert Simon's seminal work *Administrative Behavior* (1947) outlines in great detail the process of making decisions that organizations utilize. Indeed, for Simon, the purpose and structure of organizations should be to make decisions and then to act upon them. This decision-making process has several stages that I am calling identification, representation, planning and design, selection, and evaluation. At each stage, there seems to be opportunities for designers (as outside consultants, in-house staff, or even as managers) to help make, in Simon's terms, "efficient," "good," and "quality" decisions.

It is important to note that for Simon, no major decision in an organization is made alone, rather it the work of many, and indeed, organizations should be structured for just this purpose:

> The term organization refers to the pattern of communications and relations among a group of human beings, including the processes for making and implementing decisions (p.19).

Organizations provide environments that develop personal qualities and habits; the means for managers to exercise authority and influence over those who perform the work at hand (the "operators"); and the management of information, all towards "a pattern of coordinated and effective behavior" (p.2).

In this paper, I will attempt to reconstruct the process and methodology for decision-making that Simon lays out in very thorough detail. Since Simon doesn't do this in a linear

manner and each stage has many different components, it is likely that there are alternate ways to outline his process. I have shaped my interpretation with an eye towards design and designers.

Identification

The first stage of the decision-making process is probably the simplest, yet the most crucial. It involves the identification of problems and opportunities that arise in the organization's environment. In order for an organization to deal with a problem, it must first notice it, and this is not as easy as it seems. In a theme that occurs throughout the decision-making process, the problem is typically not enough information, but rather too much:

> In the world in which we actually live, at any given time we notice only a fraction of opportunities that are objectively present, and only a small part of the problems. A major initial step—and by no means an assured one—…is to extract opportunities and problems from the confusion of the environment—to attend to the right cues (p.123).

These problems are of two types: well-structured and ill-structured (p. 128). Ill-structured problems, the types of problems that designers would be involved in, have no clear potential solutions.

Designers, with their attention to users and contexts of use, as well as engagement with user research and product testing (i.e. things outside of the organization), are well-equipped to be what Simon calls "an "interface" for identifying, obtaining, and ingesting [this] information selectively and for translating it into formats that are compatible with [the organization's] internal information flows and systems" (p. 241). These formats will likely be in the forms that designers are familiar with making: words, images, and diagrams, and

should be focused on *surprise*. Surprise, as Simon reminds us, "focuses human attention" and occurs when "we are knowledgeable about a situation and something unusual (contrary to our knowledge) occurs" (p.123). Deliverables that present problems and opportunities should take this surprise factor into account. These deliverables will also likely *be* the representation of the problem.

Representation

Once a problem has been identified (possibly by a designer), it needs to be represented in some manner; only after which then can a decision be made to act on the problem. "Some problems are very hard as the world presents them, but very easy when they are reformulated properly," notes Simon (p.125). Designers, used to both modeling and presenting complex information in digestible form, are especially well-suited for this task.

Representations are used in two ways: to break through organizational inertia (engendered by previous decisions that have brought stability to the organization (p.76)), and to define the boundaries of the problem space, so that efficient "exploration" of the problem space can be undertaken during the next stage of decision-making: Planning and Design (p.127).

The representation phase has one crucial action in it: the decision to act, to address the problem or opportunity, and this has to do with the organization's goals, its purpose. "Purpose provides the principle criterion in determining what things are to be done" (p.4). The organization's goals, as well as its values, will play a greater role in the Selection phase later on in the process and even in the next phase, Planning and Design.

Planning and Design

The Planning and Design stage is the most complicated part of the decision-making process. It is also likely the longest phase, time-wise, in the process and also the phase where designers can contribute the most.

Planning and Design is divided into two major sections: the development of a system of values and the creation of possible lines of actions based on those values (p.62). Each will be dealt with separately.

Before solutions can be suggested, a system of values based on the goals of the company need to be determined, with those values being ranked based on how they relate to the goals of the company. The goals in this case become *constraints* and guide the possible courses of action that will be generated later on. They will be used to synthesize alternate solutions and used to test the satisfactoriness of any proposed solution (p. 155).

Designers, typically through research and strategic discussions, can help devise and give form to these values, goals, and constraints. This typically takes the form of what has been traditionally called the "creative brief:" a document that should not only show these values, but also the metrics that should be used to test any proposed solution.

Once that value system has been established, it's time for the heart of the decision-making process—at least for designers—and that is the finding of a set of alternative solutions to the problem that has been identified and represented.

All alternatives should be based on a number of things that Simon calls *premises*. These include the facts (or suppositions of facts), values, side conditions, and constraints (p.23). These premises are subject to *influence*, a major force in organizations which Simon

defines as anything or anyone that places "partial limits upon the exercise of discretion" on another (p.307). Influence can radically alter the premises.

Once the premises have been defined, the design (or "planning") of alternatives can begin; the general criteria can be particularized by application to specific situations, with only the most plausible alternatives worked out in detail (p.109). By alternatives, Simon means differences in *consequence*: what happens if this particular decision is made. These alternatives will never be the entire set of alternatives possible; humans ability to guess at every consequence and to sort through all the information available is just too limited, even when augmented and enhanced by technology like computers.

How are these alternatives derived? Simon calls it this point a "search activity aimed at enabling the organization to go beyond actions that are already known and understood and to choose novel ones" and goes on to say that

> The alternatives for choice are not usually given but are generated through selective search…in many cases, including perhaps the most important, the alternatives for which an organization is seeking do not exist but have to be created and designed. The task is not to search but to synthesize: to design (p.126).

This then, is the specific task: to take the identified problem and its problem space (the representation), figure in the premises and constraints, and then create situations with consequences (solutions). Although Simon had managers in mind in writing *Administrative Behavior*, this should sound very familiar to all designers. This is at the center of what we do.

By what methods this design is to be done is not given much consideration by Simon. He says that

> The ability, often noticed, of the expert to respond "intuitively" and often rapidly, with a relatively high degree of accuracy and correctness is simply the product of…stored knowledge and the

> problem-solving by recognition that it permits. Intuition,
> judgment, creativity are basically expressions of capabilities for
> recognition and response based upon experience and knowledge
> (pp.128-129).

While there is assuredly some truth to this, I imagine most designers would take umbrage to the reduction of creativity to just an output of experience and knowledge. It's a logical description of a quality that is not rational; indeed, creativity is often maddeningly irrational.

But let us assume that the designer does his or her work and several alternatives are created. Now, a choice must be made.

Selection

Once alternatives have been designed, it's time for the organization's central activity: making a decision among these alternatives to act on. This is harder than it seems. Some decisions, when made, create a new situation that make other decisions in the future impossible. This counts for a lot of the inertia that is encountered in organizations (p.76). Sometimes all the alternatives lead to undesirable consequences and the organization wants to spend more time looking for other options, postponing any choice (p.137).

Organizations make decisions based on a number of factors. Efficiency—"the largest result for the given application of resources" (p.256)—is certainly high on Simon's list, although what alternative is the most efficient can be very difficult to determine. Maintaining "business equilibrium" is also important—the decisions made have to be advantageous to all participants in the organization: entrepreneurs, employees, and customers (p.162). But not every decision can be determined solely by facts, as Simon acknowledges:

> Decisions are something more than factual propositions. To be
> sure, they are descriptive of a future state of affairs and this

> description can be true or false in a strictly empirical sense; but
> they possess, in addition, an imperative quality—they select one
> future state of affairs in preference to another and direct behavior
> towards the chosen alternative. In short, they have an *ethical* as well
> as factual content (p.56). [italics Simon's]

He goes on to say that "decisions may be "good," but they cannot in an unqualified sense be "correct" or "true" " (p.57). "It's continually necessary," Simon writes, "to choose factual premises whose truth or falsehood is not definitely known and cannot be determined with certainty with the information and time available for reaching the decision" (p.60). Indeed, one of the major problems in decision-making that must be overcome is that complete rationality—knowing all the facts and conditions surrounding a decision—can never be fully realized (p.94). Decision-makers can only consider those factors that are closely related to the decision in both cause and time—if even those can be determined (p.95).

What's needed is something that designers, with their training and multi-disciplinary backgrounds can provide: good *judgment*. Designers are used to satisficing, choosing the course of action that is "good enough" without worrying about whether they have found *all* the possible alternatives (p.119). Designers understand that:

> all decision is a matter of compromise. The alternative that is
> finally selected never permits a complete or perfect achievement of
> objectives, but is merely the best solution that is available under the
> circumstances (p.5).

And designers, if they are honest, may also admit that most decisions are "in general, the sheerest guesswork" (p.265).

Evaluation

The final stage of the decision-making process is that of evaluation: figuring out if the decision was the correct one, and, if so, communicating it to the employees of the company for implementation. The designer here can play a role in the development and testing of any products created, as well as in the communication about those products to employees and customers.

As has been noted, it is difficult to say whether a decision is the "correct" one or not. But after the fact, there are signs that a decision was successful. Profit is one, but not the only way, of evaluating (p.272). Quality is perhaps just as important. Was the final product one of quality? One method of determining this is by peer review (p.276). Do other organizations (and perhaps other designers) admire the work? Then perhaps the decision was the right one.

It is fascinating to note the parallels between the decision-making process that Simon maps out and the traditional design process. Simon's period of identifying the problem and opportunity is the same as the design "exploration" or "discovery" phase. Representing the problem is what designers do in conceptual models and the creative brief, trying to narrow down the scope and create boundaries for the problem space. Simon's "planning" is so much like design in its creation of alternatives that he even calls it "design" in some places. Selection and evaluation closely match the development and testing phases of the design process. All in all, there are some interesting connections that make it clear that design and designers do have a place in the decision-making process of organizations. And, in fact, they might even be at the heart of it.