December 2001

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Abstract

Today, a growing number of researchers view ethical issues as the key source of an organization's long term success. This paper suggests that nothing is ethically neutral and problem formulation, perhaps the most crucial step in decision support systems design, is no exception. Consideration of these issues is critical and often looked in the decision-making process, particularly problem formulation. We present an issue contingent model for ethical problem formulation that integrates Jones' (1991) moral intensity paradigm with Mitroff's (1997) strategies for more holistic decision making.

Keywords: Problem formulation, ethics, decision support systems

Introduction

As corporations expand in scope, they begin to affect the lives of an ever larger number of people in many and varied ways, including their culture, their social and political systems, their economies, and the natural environments in which they live. Today, a growing number of researchers are concerned that organizations need to consider the larger picture of the organizational environment and take a long-term view when making decisions in this complex milieu of forces. Many view ethical issues as the key source of an organization's long-term success (e.g., Mitroff, 1997; Ackoff, 1999; Senge, 1995; Mitroff and Denton, 1999). It is claimed that ethical behavior is the heart and soul of business, and that long-term profits and ethics are intrinsically related (Primeaux and Stieber, 1994).

On the other hand, many researchers contend that the spiritual (or ethical) dimension has been missing from the prevailing scientific paradigm in the academic and business communities. With the exception of very few authors (Stead and Stead, 2000), a moral and ethical component has been all but ignored in the strategic management literature. Mitroff and Denton (1999) argue that today's organizations are impoverished spiritually and that many problems come from this impoverishment. Schaef and Fassel (1988) believe that many organizations are addicted to control, fear, suppressed feelings, sabotage, disrespect, distrust, dishonesty, … and are functioning addictively, both in terms of individual personnel and as a whole system. This diverts attention away from the impact of organizational decision making on employees, the community, society, and the environment.

Business philosopher Charles Handy (1994) asks, "What is a business for?" He insists that the purpose of an organization is not to make a profit. Rather, it is to make a profit in order to continue to do things or make things. Profit is a means to other ends and not an end in itself. Handy states, "A requirement is not a purpose" (1994, p. 159). According to Peter Senge (1995, p. 18), Russell Ackoff at the Wharton School of Economics says, "profit is like oxygen. If you do not have enough, you will not be around long; but if you think life is breathing, you are missing something."

A recent empirical study of spirituality (ethics) in the workplace reports that senior executives and managers associated with organizations they perceive as more spiritual (ethical) also see their organizations as "more profitable" and they are able to deploy more of their full creativity, emotions, and intelligence in spiritual-based organizations (Mitroff and Denton, 1999). The authors claim that profits follow directly from being ethical. Verschoor (1998) studied the link between a corporation's overall financial performance and its commitment to ethics with the 500 largest U.S. public corporations. The empirical study shows that there is a statistically significant linkage between a management commitment to strong controls that emphasize ethical and socially responsible behavior on one hand, and favorable corporate financial performance on the other.

The objective of this paper is to suggest that nothing is ethically neutral and problem formulation, perhaps the most crucial step in decision support system design, is no exception. Furthermore, consideration of an expanded set of factors in DSS design and decision making in general, may lead to better organizational performance in the long run. Shareholder benefits include increased profits and payoffs, while the public at large benefits from more socially responsible behavior that considers wider perspectives of problems. In the next section of the paper, we discuss how values influence what we consider to be problems in the first place. Next we examine the views of some authors on ethics and decision making. However, consideration of these issues is critical and often overlooked earlier in the decision-making process. Consequently, we present an issue-contingent model for ethical problem *formulation* that integrates Jones' (1991) moral intensity paradigm with Mitroff's strategies for more holistic decision making (1997).

Problems and Values

Organizations recognize that something is a problem when things are not as they *ought to* be. Mitroff and Linstone (1993) note:

> *What we call a "problem" is not only a reflection of our values but of our ethical commitments, of what we believe ought to be. Especially in the social realm, something is a problem because things are not as they ought to be. Thus the gaps between what we desire and what we can accomplish are not merely measured by a few perspectives. Instead, they constitute ethical and aesthetic gaps as well. Consideration of aesthetics and ethics thus play a fundamental role in our selection of problems and in the means we use to address them* (Mitroff and Linstone, 1993, p. 171).

Thus, ethics and problem formulation are inseparable. Just as in the design of solutions, defining problems requires both moral judgment and expertise, and the boundary is never easy to draw (Ulrich, 1988). When problem formulation occurs without considering ethical aspects of the problem, the decision maker and organization are likely to be solving the wrong problem, or committing a "Type III" error (Raiffa, 1968). To Churchman (1971), solving the *right* problem makes an *ethical difference* in human affairs, that is, it leads to the betterment of the human condition, rather than simply making a *significant difference* in human affairs (Mitroff, 1997).

An Issue-Contingent Model of Ethical Problem Formulation

Recently, the importance of ethics in decision-making processes has been the focus of many studies (e.g., Chau and Siu, 2000; Carlson et al., 1999; Primeaux and Stieber, 1994; Jones, 1991; Rest, 1986). A number of researchers (e.g., Ferrell and Gresham, 1985; Rest, 1986; Hunt and Vitell, 1986; Dubinsky and Loken, 1989) proposed different ethical decision-making models. For example, Ferrell and Gresham (1985) proposed a contingency framework for understanding ethical decision making in marketing. Rest (1986) proposed a four-component model for individual ethical decision-making and behavior. Hunt and Vitell (1986) developed a positive theory of marketing ethics. These models focused on ethics in decision making, none addressed ethics in problem formulation specifically.

They all stressed the importance of recognizing moral issues or an ethical component in managerial decision making. Hunt and Vitell (1986) argued that if the individual does not perceive some ethical content in a problem situation, then the rest of the decision-making model does not really matter. Thus recognizing an ethical component is crucial. Jones' (1991) decision-making model recognizes the significance of perceiving moral issues, what he calls moral intensity or characteristics of the moral issues. Moral intensity is "a construct that captures the extent of issue-related moral imperative in a situation" (1991, p. 372). Moral imperative is the requirement to act in a manner consistent with one's moral beliefs. The component parts of Jones' model include the magnitude of consequences, social consensus, probability of effect, temporal immediacy, proximity, and concentration of effect. His definition of those six parts in the context of decision-making are:
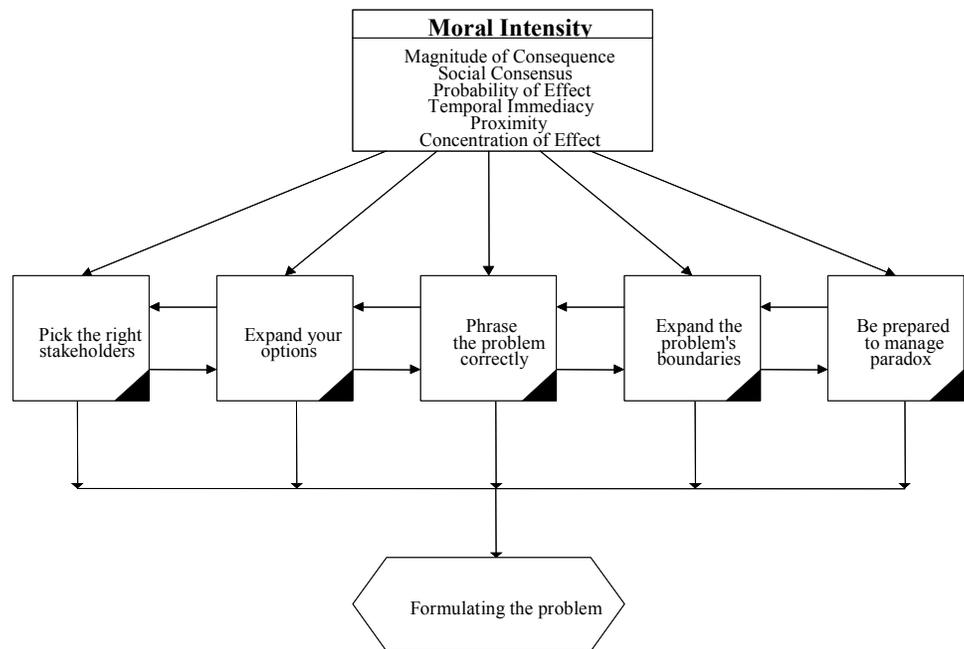
- The magnitude of consequences – the sum of the harms (or benefits) done to victims (or benefits) of the moral act in question.
- Social consensus – the degree of social agreement that a proposed act is evil (or good).
- Probability of effect – a joint function of the probability that the act in question will actually take place and the act in question will actually cause the harm (benefit) predicted.
- Temporal immediacy – the length of time between the present and the onset of consequences of the moral act in question.
- Proximity – the feeling of nearness that the moral agent has for victims (beneficiaries) of the evil (beneficial) act in question.
- Concentration of effect – an inverse function of the number of people affected by an act of given magnitude

We believe that moral intensity is closely related to awareness of what Mitroff and Nelson (1999) refer to as "interconnectedness." That is, if stakeholders or groups have "a basic feeling of being connected with one's complete self, others, and the entire universe" (Mitroff and Nelson, 1999, p. 83), the chance of ethical problem formulation occurring will greatly increase. Therefore

what we call an issue-contingent model of ethical problem formulation must contain ethical components, and allow DSS designers and decision maker(s) to perceive the moral intensity of a problem situation, and to be aware of interconnectedness.

1.   Based on Churchman's (1971) Singerian model of inquiry, Mitroff (1997) suggests five broad strategies for helping to assure ethical problem formulation.

2.   Pick the right stakeholders. Never make an important decision or take an important action without challenging at least one assumption about a critical stakeholder; also, consider at least two stakeholders who can and will oppose the decisions or actions.

3.   Expand options available. Never accept a single formulation of an important problem; it is vital to produce at least two very different formulations of any problem deemed important.

4.   Phrase the problem correctly and comprehensively. Never produce or examine formulations of important problems phrased solely in technical or human variables; always strive to produce at least one formulation phrased in technical variables and at least one phrased in human variables.

5.   Expand the problem's boundaries appropriately. Never draw the boundaries of an important problem too narrowly; broaden the scope of every important problem up to and just beyond your comfort zone.

6.   Be prepared to manage paradox. Never attempt to solve an important problem by fragmenting it into isolated and tiny parts; always locate and examine the broader system in which every important problem is situated; in many cases, the interactions between important problems are more important than the problems themselves.

It seems that these five strategies are closely interrelated to one another in that, for example, picking the right stakeholders is expected to increase the chance to expand options and the problem's boundaries, expanding the problem's boundaries affects the ability to phrase the problem correctly, and so on. By integrating Mitroff's (1997) five broad strategies with Jones' (1991) components of moral intensity, we suggest an issue-contingent model of ethical problem formulation as shown in Figure 1.

The issue-contingent model of ethical problem formulation in Figure 1 is based on three propositions. First, a moral issue is present when an individual's or organization's problem formulation may harm or benefit others. Since problem formulations almost always affect others, problem formulation is always a

Figure 1. An Issue-Contingent Model of Ethical Problem Formulation

moral problem as well as a technical one. Second, individuals and groups participating in problem formulation are moral agents in addition to technical problem solvers, whether they may recognize moral issues or not. Third, an ethical problem formulation is defined as a problem formulation that is morally acceptable to the larger system. Thus the model emphasizes the need for decision makers to incorporate moral intensity into problem formulation in general and each of the five strategies in particular.

In this model, we borrow Jones' (1991) terms and interpret them in the context of problem formulation, and suggest that DSS designers and decision makers should consider them in complex situations. Magnitude of consequences would indicate the significance of the impact of the problem formulation on different stakeholders, and allows them to recognize the seriousness of the situation and the significance of their participation. Social consensus is the general information regarding how a certain

problem issue is perceived or understood by the public, and provides stakeholders with a basic understanding of the issue. Probability of effect is the degree of chance their assumptions on the issue might be correct or incorrect. It allows different stakeholders to challenge and test the various assumptions on the issue. Temporal immediacy refers to the length of time between the present and the beginning of consequences. It might help stakeholders to make a responsible problem formulation by taking into account invisible stakeholders such as future generations, and the ultimate stakeholder, planet Earth (Stead and Stead, 2000). Proximity allows different stakeholders to develop the feeling of social, cultural, and physical nearness. It might bring in such terms as caring, heart, love, and trust during problem formulation in addition to the terms of profits and losses. Concentration of effect would identify the stakeholders whose interests would be most affected by problem formulation. It would help different stakeholders to recognize whose interests ought to be first served.

Moral intensity is generally expected to increase if there is an increase in any one (or more) of its components, assuming the remaining components do not decrease (Jones, 1991). Like a number of empirical studies (e.g., Robin et al., 1996; Singhapakdi et al., 1996) suggesting that moral intensity positively influences ethical decision making, it is expected that an increase in moral intensity will positively affect ethical problem formulation. If these six components of the moral intensity are integrated with the five strategies of Mitroff (1997), they may "overcome inconsistencies" and defend the status quo and at the same time "create inconsistencies" and attack the status quo in problem formulation. For example, some components such as social consensus, proximity, and concentration of effect may help different stakeholders search for a consensus on the issue by providing a general social agreement of the problem, by developing the feeling of nearness, and by identifying which stakeholders' interests ought to be emphasized. On the other hand, the probability of effect, magnitude of consequences, and temporal immediacy would continually challenge their assumptions and lead them to (perhaps) suspend their own assumptions. Overall, the issue-contingent model of ethical problem formulation is expected to increase peoples' perceptions and intentions for ethical problem formulation, including DSS designers, decision makers, and stakeholders that may be affected by actions resulting from the decision taken.

Summary

As organizations grow, their impact on society and the natural environment expands. It is increasingly important that organizations include a much broader range of factors in DSS design, and decision-making processes, especially ethical concerns. This may even lead to increased profits in the long run. We have presented a model for ethical problem formulation based on Mitroff's (1997) rule for generating holistic problem formulations, and Jones' (1991) components of moral intensity. We hope this model will be adopted by DSS designers and decision makers and that its use will lead to more ethical behavior by organizations.

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