The Application of the Theory of Reasoned Action to Senior Management and Strategic Information Systems

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In recent years MIS research has been concerned with the development and use of information systems to achieve a competitive advantage. One of the many encompassing issues related to this topic is the need to gain the support and commitment for such systems from senior management. Although previous research has discussed some of the difficulties with and reasons for senior management’s reluctance to adopt strategic information systems, there does not appear to be the application of any integrated theory or framework to this problem. In this paper, we discuss an established and well-researched theory, the Theory of Reasoned Action, and we provide a basis for how it can be applied to the acceptance of strategic information systems by senior management. Initially, a general discussion of competitive advantage and strategic information systems is provided as foundation. Next, the Theory of Reasoned Action is discussed in detail. Finally, the theory is applied to senior organizational executives, with an emphasis on a methodology, to uncover some of the underlying reasons for resistance to adopting strategic information systems.

During the past several years, a considerable amount of empirical and conceptual research has been devoted to the study of competitive advantage. Much of this research emanated from the work conducted by Porter (1980). His research concerned competitive forces with which an organization must contend, along with various strategies an organization might adopt to deal effectively with those forces.

Building on Porter’s general characteristics, many MIS researchers have recently investigated the application of information technology (IT) to achieve a competitive advantage in organizations. Such use of IT is often referred to as strategic information systems (IS). Prominent MIS researchers who have examined strategic IS include McFarlan (1984), Bakos and Treacy (1986), Rackoff, Wiseman, and Ulrich (1985), Parsons (1983), and Benjamin, Rockart and Scott Morton (1984). McFarlan, for example, suggested that companies use IS to: build barriers to new entrants, change the basis of competition, generate new products, build in switching costs, and change the balance of power in supplier relationships. Parsons expanded McFarlan’s work by suggesting that IS can have a strategic impact if used to: change an industry’s products and services, change an industry’s markets, change an industry’s production economics, affect a firm’s buyers and suppliers, prevent customers from using competitors’ products and services, preclude new competitors, alter the degree of rivalry, and support one of Porter’s three generic strategies. Bakos and Treacy (1986) and Benjamin et al.
Despite the numerous claims offered by many researchers, Clemons (1986) provides a note of caution regarding strategic IS. Simply making a company’s operations better may not result in strategic IS. If anyone can do it, a company’s competition will not change, thereby denying a competitive edge for the organization. Firms must also differ in their ability to develop and exploit even essential systems if those systems are to become and remain strategic. He also argues that a company must have the ability to sustain a competitive edge; if competitors copy the system, the first company will lose its competitive edge unless it enhances the system or in some way continues to distance itself from competitors.

The advantages and disadvantages surrounding strategic IS notwithstanding, several prominent and successful examples are provided in academic and practitioner publications. These include American Hospital Supply’s on-line customer order system, American Airlines’ SABRE system (Wysocki and Young, 1990), and Frito Lay’s product and pricing system for route salespersons and retail customers (Callan, 1989).

Despite successes such as those just cited, an area of much concern has been the difficulty associated with convincing senior management of the strategic impact of IS on organizations. In a recent study Lederer and Mendelow (1988) found that top management’s lack of awareness about strategic IS and the opinion that such systems are strictly for operational use were the primary reasons for senior management’s reluctance to recognize the strategic impact that IS can have. This feeling persists even after many have attested to the importance of strategic IS (Clemons, 1986; Clemons & Kimbrough, 1987; Clemons & McFarlan, 1986). Lederer and Mendelow (1988) have also discussed techniques to overcome senior management’s reluctance, important steps if these systems are going to help an organization develop a competitive advantage.

From the previous review, it is clear that the strategic use of IS can provide a competitive advantage to organizations. However, it is also evident that many organizational decision makers, including senior executives, may be reluctant to adopt or even consider such systems. If IS researchers are to be able to influence such decisions and try to help organizations develop competitive strengths, they need to have a firm understanding of why such reluctance exists.

What appears to be missing in much of the research on this topic is an examination of the possible underlying reasons for management’s reluctant behavior regarding strategic IS. Specifically, what is essential is the application of an established theory or framework to address such behavior and examine its determinants. Such a research perspective can assist MIS researchers and corporate managers in identifying the bases for resistance to adopting strategic IS, and then, to design more effective ways to overcome that resistance.

One approach might be to merely study top managers’ attitudes toward strategic IS in hopes of understanding their future behavior toward them. Many researchers in MIS, psychology, and other disciplines have studied attitude, attitude change, and satisfaction. Noteworthy among these are Lucas (1973, 1974a, 1974b, 1975a, 1975b) and Ives, Olson, and Baroudi (1983) in MIS, and Triandis (1971) in psychology. A richer study of behavior, intention, and other behavioral determinants, however, would provide a more complete assessment of senior management’s position regarding strategic IS. In particular, Fishbein and Ajzen (1975) have developed a theory, the Theory of Reasoned Action (TRA), that examines attitudinal and normative influences on behavior which might explain the reasons for senior management’s resistance to the concept of using IS technology to achieve competitive advantage.

In sum, the organizational and managerial issues surrounding strategic IS are diverse. Many issues could possibly affect senior management’s behavior regarding adopting such systems. It is therefore imperative that researchers approach this problem systematically and base their efforts on a solid theoretical foundation. Fishbein and Ajzen’s (1975) Theory of Reasoned Action may provide this foundation. The theory is discussed in general terms below. Following that, techniques and procedures are presented to apply it to an example of senior executives’ behavior regarding strategic IS. A discussion regarding possible changes to management’s behavior is then presented. Finally, concluding remarks relevant to IS researchers and practitioners are presented.

**Theory of Reasoned Action (TRA)**

Over many decades, researchers have studied the relationship between attitude and behavior. Often attitude has been used quite generically to refer not only to a person’s feelings toward something but also to his/her
beliefs (cognitions) about some object and behavioral tendencies (conations) with respect to that object. Such an all-inclusive definition of attitude has led researchers to select arbitrarily any number of miscellaneous dependent measures as long as the measure appeared prima facia to be related to the issue being considered. What has resulted is an array of often contradictory and inconsistent research findings (Fishbein & Ajzen, 1981).

In contrast to a generic, and often confused, approach to attitude, Fishbein and Ajzen (1975) and Ajzen and Fishbein (1980) have developed a theory concerned with how attitudes are determinants of volitional behavior. In their formulation, an attitude is defined simply and straightforwardly as an evaluation of some object. The object can be physical, social, cognitive, or some course of action such as adopting a strategic IS. An important characteristic of Fishbein and Ajzen’s approach to attitudes is that they stress the needed correspondence in specificity (or “compatibility”) between attitude and behavior when one is trying to predict or understand a behavior. For example, almost everyone would say they have a positive attitude toward protecting the environment, but such an attitude will have only a tiny statistical or substantive relationship with the behavior “recycling aluminum cans at my office.” To understand and predict that more specific behavior, one needs to measure attitude towards “recycling aluminum cans at my office.” In the same way, understanding attitudes toward “information systems” in general will not shed much light on the causes of a specific behavior such as, “adopting a computerized dispatch system for our truck fleet.”

According to the Theory of Reasoned Action (TRA), a person’s behavior (B) is a positive function of his/her intention (I_B) to perform the behavior. Assuming that nothing has arisen in the environment to cause a change in plans, a measure of intention should be the best predictor of behavior. Unlike some other theorists, Ajzen and Fishbein (1980) view an individual’s behavioral intention as a linear function of two psychological variables: (1) the attitude a person has toward performing the behavior (A_B), which is the positive - negative evaluation of performing the behavior; and, (2) a person’s subjective norm (SN_B) regarding the behavior, which is the perceived social pressure to perform or not perform the behavior in question (Fishbein & Ajzen, 1975). Fishbein and Ajzen (1975) also assign weights (w) to these attitude (A_B) and subjective norm (SN_B) determinants; the weights are indicative of the relative importance of each determinant. They can vary from situation to situation and from person to person. However, they are typically estimated via linear regression. The relationships among behavior, intention, attitude, and subjective norm are depicted in Equation 1 (Fishbein & Ajzen, 1981).

$$\text{Behavior} \approx w_1(\text{Attitude}_B) + w_2(\text{Subjective Norm}_B) \quad (1)$$

The parenthetical expression in Equation 1 is often used to predict behavioral intentions, which, in turn, are used to predict behavior. However, on the surface, the equation seems to add little to the explanation of behavior. That, more fundamental explanation, is provided by an examination of the components that underlie attitudes and subjective norms.

An attitude toward performing a behavior, such as adopting a strategic IS, is approximated by a product of the strength of beliefs (bb) that the behavior will lead to each of i = 1,....I salient consequences, and corresponding evaluations (ei) of those consequences. Behavioral belief strengths (bb) are subjective probabilities; evaluations (ei) are personal valences or anticipated utilities. This attitude structure is much like a subjective expected utility. Equation 2 summarizes this relationship (Fishbein & Ajzen, 1981).

$$\text{Attitude}_B = \sum_{i=1}^{I} \text{behavioral belief}_i \times \text{evaluation}_i \quad (2)$$

In general, a person who believes that the performance of a given behavior will, with high probability, lead to mostly positive outcomes will possess a favorable attitude toward that behavior; on the other hand, if the person believes with high probability that mostly negative outcomes will result from performing the behavior, he/she will hold a negative attitude toward it (Fishbein & Ajzen, 1975).

The second factor in TRA that influences intentions is a person’s subjective norm (SN_B) (see Equation 1). The subjective norm is determined by a person’s normative beliefs (nb), i.e., beliefs that j = 1,...J salient individuals or groups think the person in question should or should not perform the behavior, coupled with motivation (mc) to comply with each of the referents. This structure of subjective norm is represented in Equation 3 (Fishbein & Ajzen, 1981).

$$J \sum \text{normative belief}_j \times \text{motivation to comply}_j \quad (3)$$
In other words, an executive’s perceived social pressure to perform a behavior (such as adopt a strategic IS) is a function of how much he/she thinks social referents (such as the board of directors, customers, or employees) would approve, and how much he/she generally wants to comply with their wishes. Figure 1 depicts a schematic presentation of TRA.

Fishbein and Ajzen’s TRA has wide acceptance in many behavioral science disciplines, and has been used empirically in a variety of situations to predict and understand behavior. Examples include women’s choices of occupational orientations, family planning behaviors, consumer behavior, and American voting practices (Ajzen & Fishbein, 1980). TRA has also been adapted to examine user acceptance of computer technology (Davis, Bagozzi, and Warshaw, 1989), and it has been the subject of a recent, strongly supportive meta-analysis involving nearly one-hundred studies (Sheppard, Hartwick, and Warshaw, 1988). The next part of this paper is concerned with a discussion of how this framework might be applied to a senior manager’s behavior regarding the adoption of a strategic IS.

**TRA and Senior Management Attitudes and Behavior Regarding Strategic IS**

Many MIS studies have dealt directly with attitudes, both in measuring them and attempting to change them. Prominent examples include studies by Morrison (1983) who measured individuals’ attitudes toward computers between 1970 and 1983. Although he found time-based differences in attitudes, he noted that positive acceptance of computers by the general populace was not apparent. He found that negative attitudes prevailed, possibly due to the disempowering and dehumanizing effects of computers, fears about computer reliability, and the power that computers seem to have over peoples’ lives.

Many organizational studies involving attitudes have been conducted as well. They have been concerned with how individuals perceive the capabilities of and the need for MIS, the MIS staff, and organizational change in general (Guthrie, 1973; Schewe, 1976; Schultz & Slevin, 1975). Perhaps the most extensive attitudinal studies were conducted by Lucas in the 1970s. He was able to support his proposition that high levels of use of an information system can result from favorable user attitudes about information systems as well as the information services staff. His results also showed that systems usage could be predicted from attitudes about the computer’s potential and attitudes toward the information systems staff (Lucas, 1973, 1974a, 1974b, 1975a, 1975b,1976). Also, Kaiser and Srinivasan (1982) concluded that user attitudes toward an MIS can be an
important indicator of the success of a computer system implementation. Recent attempts at developing more valid and reliable instrumentation to assess attitudes and satisfaction are also worthy of note. Examples include Baroudi, Olson, and Ives (1986), Iivari (1987), Ives, Olson, and Baroudi (1983), Bailey and Pearson (1983), and Doll and Torkzadeh (1988, 1989).

These and other efforts have provided valuable insight toward examining user attitudes and satisfaction concerning MIS, IS staff, etc. On the surface, it might seem advisable to follow a similar path regarding the use of IS to achieve a strategic advantage. However, Fishbein and Ajzen (1975), in the development of TRA, make it quite clear that simply examining global attitudes toward computers is not sufficient to understand a person’s behavior of not adopting a specific IS. What is essential is examining the bases of the specific attitude toward the behavior, beliefs about the consequences of that behavior, and social expectations regarding that behavior.

Thus, when examining strategic IS to achieve a competitive advantage and a senior executive’s intention or reluctance to take action to develop such systems, it would be necessary in part to identify his/her beliefs about the development and use of a specific system to achieve competitive advantage. It would be incorrect to just assess the person’s attitude toward IS in general. Suppose, for example, that a CIO would like to convince a corporate president that a strategic IS, such as an online customer database, could lead to a competitive advantage for the organization. It would first be necessary to determine what the president believed to be the salient consequences of using such a system in his/her company. Salient consequences are those few, perhaps five to nine outcomes that come to the president’s mind when considering the adoption of a specific IS. The belief strengths (how likely he/she thinks each consequence will occur if the system is adopted) and evaluations (how good or bad he/she feels about each consequence) associated with these consequences are the immediate determinants of his/her attitude. The belief strengths could have been developed through direct experience with such a system, through indirect information from outside sources, or they could be self-generated through some inference process (Ajzen & Fishbein, 1980). For example, the president may have directly observed the failure of an attempt by another organization to develop such a system. This direct observation is extremely salient, and the beliefs associated with it tend to overwhelm other data that are perhaps more relevant and systematic. The president may also believe that computer technology, certainly an integral part of strategic IS, is only applicable for operational purposes, believing that information is too intangible to be treated as any sort of competitive resource. Finally, the president may believe that IS personnel are not capable of developing strategic IS based on past failures of IS personnel to deliver systems in a timely manner or to deliver systems which actually work as promised. All of these could feed into the president’s belief system about the consequences of adopting such a system.

On a more positive note, the president might believe that computer technology could produce significant cost efficiencies leading to a competitive edge for the firm. The president might just as easily observe success stories in other organizations with the subsequent belief that his/her personnel are just as capable of developing strategic IS. Some possible salient consequences of adopting a specific strategic IS, such as an online customer database, are listed in Table 1.

Based on the previous theoretical discussion of TRA, a senior manager may believe there are certain salient consequences of adopting a strategic IS, some negative and some positive. At the same time, it is essential to assess the belief strength — how strongly he or she cognitively connects these perceived attributes or consequences to adopting a specific IS. Once the positive and negative consequences, and the magnitude of the corresponding beliefs and evaluations have been ascertained, a clearer understanding of the president’s attitude toward the behavior is available. However, attitude is only one of two important components of behavioral intention, (which is the best single predictor of behavior: Fishbein & Ajzen, 1975).

Subjective norm is the second important determinant of intention. In the example being considered in this paper, namely a president’s intention or reluctance to adopt a specific strategic IS, the president may consider the expectations of salient social referents. These referents could include the organization’s chief executive officer (CEO), the CEO or president of a competing organization, the chief financial officer, and/or the senior IS person in the president’s own company. It is also important to remember that referent groups need to be considered. For example, a company’s board of directors as well as some strategic planning group or steering committee also may be salient referents to the president, or people that he/she thinks about when considering...
### Table 1: Possible Salient Consequences of Adopting a Specific Strategic IS (An On-Line Customer Database)

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>quicker response to customer order</td>
<td>time and material</td>
</tr>
<tr>
<td>easily targeted catalog mailings</td>
<td>cost of installation</td>
</tr>
<tr>
<td>accessible record for dealing with customer complaints</td>
<td>time for training</td>
</tr>
<tr>
<td>smooth integration with shipping and accounting depts.</td>
<td>possibility of system breakdown</td>
</tr>
<tr>
<td>ability to quickly ascertain and respond to changes in customer demographics/preferences</td>
<td>affecting customer orders</td>
</tr>
<tr>
<td>more efficient recordkeeping and locating</td>
<td>loss of data due to software problems</td>
</tr>
<tr>
<td>provides competitive advantage relative to other firms</td>
<td>cost of keeping up with software upgrades and fixes</td>
</tr>
<tr>
<td></td>
<td>confidential information may become available to inappropriate users</td>
</tr>
<tr>
<td></td>
<td>resistance to change by employees</td>
</tr>
</tbody>
</table>

*The social referents listed are illustrative only in terms of approval or disapproval. For example, some customers could be listed as disapproving.

### Table 2: Possible Salient Social Referents Involved in Adopting a Specific Strategic IS (An On-Line Customer Database)*

<table>
<thead>
<tr>
<th>Approve</th>
<th>Disapprove</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIO</td>
<td>present employees</td>
</tr>
<tr>
<td>customers</td>
<td>board of directors</td>
</tr>
<tr>
<td>suppliers</td>
<td>stockholders</td>
</tr>
<tr>
<td>lenders</td>
<td>non-IS management</td>
</tr>
<tr>
<td></td>
<td>competitors</td>
</tr>
</tbody>
</table>

*
whether or not to adopt a specific strategic IS. Other salient referent groups might include customers and employees.

Some possible social referents regarding the adoption of a specific strategic IS, such as an on-line customer database, are listed in Table 2.

In the final result, then, it is important to remember that TRA is a model for explaining or predicting a person’s actual behavior, in this instance, a senior executive’s decision to adopt or reject a specific IS for possible competitive advantage. The TRA states that this senior executive’s behavioral intention is the strongest predictor of the behavior in question. However, this adds relatively little understanding. Of greater interest are the determinants of intention, the person’s attitude and subjective norms regarding the behavior. Finally, the underlying behavioral and normative beliefs possessed by the senior executive must be identified and measured in order to establish the informational basis of the attitude and subjective norms. At this level, there is a great deal of detailed, important information about the reasons for senior executives’ behavior. With this knowledge, it is easier that more effective ways can be developed to change the behavior, if necessary. Although an in depth presentation of the measurement of behavioral and normative beliefs and other determinants is beyond the scope of this paper, a brief discussion is provided below.

Measurement of Determinants of Behavior

Ajzen and Fishbein (1980) have provided not only a theoretical perspective relating behavior to intention, attitudes and subjective norms, etc. but also a set of methods to measure them. These methods are based on a careful consideration of the behavior of interest, an elicitation survey or interview, and a final quantitative assessment. The sequence proceeds as follows:

1) Define the behavior of interest in terms of its action, target, context, and time elements.
2) Elicit perceived consequences of the behavior and social referents associated with it.
3) Choose the most often cited (most salient) consequences and referents from the elicitation.
4) Create measures of behavioral beliefs, evaluations, normative beliefs, and motivations to comply.
5) Create measures of intention, of attitude, and of subjective norm, all based on the earlier definition of the behavior of interest.
6) Integrate measures of all these constructs into a single questionnaire and administer it to the sample in question. Each step is explained in greater detail below.

In the context of our discussion, the behavior of interest would be the adoption by a senior executive of a strategic IS, for example, an on-line customer database system, within the next 12 months. In this example, action (adopting), target (on-line customer database system), and time (within the next 12 months) are specified.

The measurement processes pertaining to behavioral intention, attitude and subjective norms, salient outcomes and referents, behavioral beliefs, outcome evaluations, and normative beliefs are quite similar. Each is based on the development of questionnaire items using semantic differential techniques developed by Osgood, Suci, and Tannenbaum (1957). The following example is illustrative of an item measuring behavioral intention.

I intend to adopt an on-line customer database system within the next 12 months.

unlikely | ______ | ______ | ______ | ______ | ______ | ______ | ______ | ______ | ______ | ______ | unlikely extremely quite slightly neither slightly quite extremely

The salient consequences (outcome evaluations) and normative referents pertaining to the adoption of a strategic IS within the next 12 months can be identified through elicitation interviews or surveys. Small (20-30 person) samples of respondents who are representative of the population of interest are identified and questioned (in this case, senior executives of retail companies who do not yet have on-line customer database systems). To identify salient consequences, an elicitation questionnaire would ask sample members to list possible advantages and disadvantages of adopting an on-line customer database system. To identify salient referents, one would ask the same respondents to list any groups or individuals who might come to mind who would approve or disapprove of adopting such a system. Once these consequences and referents have been identified, a more structured, quantitative process can be employed to measure the beliefs and evaluations regarding them, as suggested by Ajzen and Fishbein (1980), and described below.

Concerning the attitudinal component, the semantic differential technique can be employed to measure
both behavioral beliefs (bb; the strength of cognitive association between the behavior and its consequences), as well as evaluations (e; the executive’s positive or negative utility regarding each consequence. For example, one of the executive’s beliefs might be, “adopting an on-line customer database system will lead to increased productivity.” The measurement of this is illustrated below.

Adopting an on-line customer database system will lead to increased productivity.

<table>
<thead>
<tr>
<th>unlikely</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
</tr>
</thead>
<tbody>
<tr>
<td>extremely</td>
<td>quite</td>
<td>slightly</td>
<td>neither</td>
<td>slightly</td>
<td>quite</td>
<td>extremely</td>
<td></td>
</tr>
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</table>

The executive’s positive or negative evaluation of that consequence is also measured using another semantic differential scale. For example,

Having increased productivity would be

<table>
<thead>
<tr>
<th>good</th>
<th>______</th>
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<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
</tr>
</thead>
<tbody>
<tr>
<td>extremely</td>
<td>quite</td>
<td>slightly</td>
<td>neither</td>
<td>slightly</td>
<td>quite</td>
<td>extremely</td>
<td></td>
</tr>
</tbody>
</table>

A cross-product of bb and e is computed for each salient consequence for the senior executive. The final measure of attitude components, then, is the summation of the cross-products for all of the consequences (such as the list of consequences in Table 1).

A direct measure of attitude would involve 4-5 (for improved reliability) semantic differential scales, such as those exhibited below.

Adopting an on-line customer database system would be

<table>
<thead>
<tr>
<th>good</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
</tr>
</thead>
<tbody>
<tr>
<td>extremely</td>
<td>quite</td>
<td>slightly</td>
<td>neither</td>
<td>slightly</td>
<td>quite</td>
<td>extremely</td>
<td></td>
</tr>
</tbody>
</table>

The shareholders would approve of me adopting an on-line customer database system in our firm in the next 12 months

<table>
<thead>
<tr>
<th>unlikely</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
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</tr>
</thead>
<tbody>
<tr>
<td>extremely</td>
<td>quite</td>
<td>slightly</td>
<td>neither</td>
<td>slightly</td>
<td>quite</td>
<td>extremely</td>
<td></td>
</tr>
</tbody>
</table>

The motivation to comply with that referent group could be measured by the unipolar scale:

In general, how much do you want to do what shareholders would like?

<table>
<thead>
<tr>
<th>not at all</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
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</thead>
<tbody>
<tr>
<td>a great deal</td>
<td></td>
<td></td>
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</table>

According to the theory, this component-based subjective norm measure (the sum of nb * mc cross-products) should correlate strongly with a direct measure of subjective norm, obtained by asking the following questions:

Most people associated with this firm who are important to me would approve of adopting an on-line customer database system in the next 12 months.

<table>
<thead>
<tr>
<th>unlikely</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
<th>______</th>
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</thead>
<tbody>
<tr>
<td>extremely</td>
<td>quite</td>
<td>slightly</td>
<td>neither</td>
<td>slightly</td>
<td>quite</td>
<td>extremely</td>
<td></td>
</tr>
</tbody>
</table>

Except for the motivation to comply scales, which are scored from 1 (not at all) to 7 (very much), all scales relating to intention, attitude, subjective norms, salient outcomes, salient referents, behavioral beliefs, outcome evaluations, and normative beliefs are scored from -3 to +3.

Although the system and measurement processes...
discussed above relate to an illustration of an on-line customer database system, they are representative of what senior executives might encounter in their organizations today. For instance, senior executives may have observed other organizations that have adopted strategic IS successfully, and they may wish to direct their attention inwardly toward similar accomplishments. Executives may have also observed that transaction processing systems in their companies have matured to the point that only minimal gains could be achieved from further effort involving them. Or, they may feel that strategic IS may afford their companies substantial economies of scale or may impose significant switching costs on their competitors. However, these executives may be unsure of the processes to follow to achieve these goals. Instead of dealing with generalities, uncertainties, or even untruths pertaining to senior executives’ positions regarding strategic IS, they could apply the principles discussed above in relating an established method such as the TRA to underlying beliefs, attitudes, behavior, etc. regarding strategic IS, thereby providing a more substantive and theoretically grounded assessment.

**Changing Management Behavior**

If senior management’s behavior is such that the development of strategic IS is impeded, what actions can be taken to influence or change that behavior? Ajzen and Fishbein’s (1980) TRA provides a starting point by showing that behavioral change ultimately occurs as a result of changes in beliefs. The first key in answering this question is to determine whether the attitudinal or subjective norm portion of intention has the greatest weight. Knowing this, the second key is to direct remedial action at either the set of beliefs underlying the recalcitrant attitude or the beliefs underlying the subjective norm. In the end, the senior manager should be exposed to information which will change a sufficient number of appropriate beliefs to produce the change in attitude or subjective norm.

There are several fundamental ways suggested by the TRA for changing an executive’s belief set, which in turn, should change the executive’s attitude or subjective norm. Recall that beliefs are strengths of cognitive connections. In the case of behavioral beliefs, those connections are the perceived links between adopting a strategic IS (the behavior) and each of the salient consequences of that behavior. For normative beliefs, those connections are the perceived expectations of salient people in one’s social environment. Below, we outline four techniques for changing attitudes by focussing on changing these beliefs. Although we concentrate our discussion on the beliefs underlying attitudes, the techniques can work just as well for changing subjective norms. All of the techniques place the CIO or senior IS manager in the role of “idea salesperson” or “product champion” for the adoption of a strategic IS, often the most important ingredient to the successful implementation of critical systems such as strategic IS (Reich and Benbasat, 1990; Vitale and Ives, 1988).

One strategy for trying to change an executive’s attitude is to suggest or make salient some additional positive consequences of adopting a strategic IS, consequences that the executive may not have considered before. For example, an executive who came to the top management of a firm through the accounting division may have considered the positive consequences “smooth integration with shipping and accounting departments” and “more efficient record-keeping and locating” in Table 1. But, the consequences “quicker response to customer orders,” “ability to quickly ascertain and respond to changes in customer demographics/preferences” and “easily targeted catalog mailings” may not have even crossed his/her mind. Attitudes are sums of behavioral beliefs*evaluations couplets for these salient consequences. If the newly salient consequences are evaluated positively by the executive, and he/she believes they have a non-zero probability of occurring if the strategic IS is adopted, they will add to the sum of beliefs, and therefore make the executive’s attitude more positive. The fewer the number of salient consequences he/she has already considered, the greater the impact this strategy will have.

A second strategy involves increasing the strength of existing beliefs (the strength of cognitive connections) that link adopting a strategic IS to some positive consequences. The best implementation of this second strategy involves a multi-pronged attack on all of the executive’s existing beliefs. However, another implementation involves concentrating one’s persuasion efforts on a single belief, what salespeople often refer to as a customer’s “hot button.” This is the belief that has the strongest evaluation associated with it; the belief that, if changed, would have the greatest positive effect on the executive’s attitude. For example, an executive may believe there is only a weak connection between adopting a strategic IS and his/her most valued consequence: “quicker response to customer orders.” The persuader’s (the attitude change agent’s) job is to bolster that belief. One way is to martial quantitative evidence, from indus-
try and academic research, that clearly demonstrates a reduction in response time after the adoption of a strategic IS. Another way is to provide vivid and easily digested anecdotal data about firm X’s success with improving response time after adopting a strategic IS, or firm Y’s failures to keep up with competitor response time because they haven’t adopted such an IS. Both kinds of evidence could be submitted orally, or in written memos and reports, or could be passed to the senior manager in other ways, perhaps as Business Week or Wall Street Journal clippings with highlighted portions.

The third and fourth attitude-change strategies are parallel to the first and second, but they involve the negative (right-hand column of Table 1) rather than positive consequences of adopting a strategic IS. Just as adding positive consequences to the belief set and strengthening beliefs associated with those positive consequences can make an executive’s attitude more positive, so can removing negative consequences and weakening beliefs associated with remaining negative consequences. These attempts at attitude change are more difficult and take more time than the first two strategies. Trying to get an executive to discount a negative consequence actually increases its salience, because the persuader has brought it once again to the executive’s attention. And, it is much harder to demonstrate zero association between adopting a strategic IS and some negative consequence than it is to demonstrate a strong association between adoption and a negative consequence (for the same reasons one needs a much larger sample size to show that a correlation is exactly zero than to show that it is positive). A better approach may be to simply ignore the negative consequences in any communication to the executive regarding system adoption or to present weak versions of those negative consequences and trounce them with strong contradictory evidence (which is called a “two-sided message”).

These strategies work best when the focal person (in this case, the executive) is paying attention to the information being sent but is not “inoculated” against the information by knowing that someone is trying to persuade him/her. Although one might want to sell the idea of adopting a strategic IS, the “hard sell” is not the best approach. The information has a greater impact when it is transmitted in small bundles rather than all at once. And, it has a greater impact when it is transmitted in an even-tempered, objective fashion, with the superordinate goal clear: that the adoption of a strategic IS would benefit the entire firm.

Fishbein and Ajzen (1975) do provide cautions about attempts to change attitude and subjective norm, however, that should be heeded. Attitude and subjective norms are based on the set of salient beliefs. Simply changing one or two beliefs may not affect a large change in attitude or subjective norm, especially if new beliefs then become salient. In addition, if the attitude or subjective norm components do not carry any weight in determining intention, it is difficult to affect a change in that intention. Finally, Ajzen and Fishbein (1980) state that the relationship between intention and behavior must be strong if a change in intention is expected to produce a behavioral change as well.

Conclusion

The Theory of Reasoned Action is not without its critics. Budd (1987) argued that people may be aware of the theory’s assumptions which may be implicitly embedded in a questionnaire assessing beliefs, attitudes, etc. Subjects may respond to the questionnaire in an artificial manner, thus creating a degree of false consistency between the components. Furthermore, Fazio, Lenn, and Effrein (1984) fear that, if individuals have not formed a pre-existing attitude about something, having them complete an attitude questionnaire may lead to attitude formation rather than assessment. However, these criticisms are less important when the behavior in question results from a careful, deliberate or considered decision. The decision to adopt or reject a strategic IS is not a spontaneous or frivolous one, and, therefore, the criticisms are minor.

Despite criticisms, the Theory of Reasoned Action may offer MIS researchers with the opportunity to apply rigor to the heretofore neglected relationship between senior management behavior and the strategic use of information technology. Also, the model’s basic structure allows the integration of factors, such as top management and peers, which have been important in previous research dealing with IS success (Melone, 1990). Finally, Davis, Bagozzi, and Warshaw (1989) have adapted TRA to address the ability to predict MBAs’ (rather than managers’) use of computer software based on their intentions. They found that perceived usefulness, an important part of a belief system, strongly influenced intentions and that perceived ease of use had a small but significant effect on attitudes too. Although attitudes only partially mediated the effects of beliefs on intentions, it would appear that TRA may provide a basis upon which researchers may investigate senior
management’s concerns regarding strategic IS.

Today, a company’s ability to both initiate and sustain its competitive position within its industry is critical for its long-term success and survival. It is also a fact that technology, particularly information technology, will continue to play a major role as organizations strive for success and survival. The question of convincing top managers of the critical importance of the use of information technology to help achieve a competitive advantage is not so easily addressed, however. Too many executives still equate information systems with simply data processing. It is therefore important to address the issue of strategic IS from an organized and theoretically-based point of view.

As a first step MIS researchers might pursue empirical studies to identify the salient behavioral and normative beliefs which different senior managers such as CEOs, Presidents, and CFOs possess regarding strategic IS. On a positive note organizations that developed such systems effectively could prove to be invaluable sources for these beliefs. At the same time, field research might also uncover salient negative consequences or referents in other organizations that did not develop strategic IS. Such research activity might uncover different groupings of beliefs for different levels of management as well as for different types of industries. Such a direction might then provide the foundation for additional instrumentation research to deal effectively with senior management’s reluctance to recognize the strategic importance of IS.

References


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