

Elements of Situational Risk in Organizational Buying

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IN ORGANIZATIONAL BUYING

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ABSTRACT

Based on previous scholarly research and recent management thinking, the authors define four types of organizational purchases based on the level and type of risk inherent in the situation. "Purchase importance" and "task uncertainty" are the situational elements of risk that define the four purchase types. An empirical study shows significant differences in the buying process, decision criteria, and information use across the four types. The low-risk and high-risk situations can be distinguished by their varying level of effort. The two situations characterized by moderate risk, however, differ from the others in both level of effort and the types of activities applied in those situations. The simple typology provides an alternative framework for understanding the variety of decisions facing organizational buyers and gives an improved understanding of risk in purchase situations. This is useful to marketing managers and sales representatives in viewing the different types of customers in their market and in planning their approach to those customers.

INTRODUCTION

Over the past several decades, top management has come to view procurement as a strategic-level concern in developing and sustaining a competitive advantage [1, 2]. Consequently, the very nature of organizational buying decisions has been both expanded and recast. This produced an evolutionary change from the support/clerical activities of the pre-1960's -- to the resource allocation/risk management approach of the 1990's [3]. In this new environment, organizational buyers face a wide range of decisions that are characterized by diversity in organizational requirements, decision participants, mix of vendors, and other situational-specific variations.

It is no wonder then that marketing managers have become more and more interested in the buying behaviors of customer organizations. One method of increasing our understanding of buying situations and decision making is to develop classification schemes. These serve as frameworks to summarize the complexities of organizational buying and to identify a small set of prototypical purchase situations. But, while numerous classifications of purchase situations have been offered in the research literature, most are based on a complex set of dimensions that are useful conceptually -- but difficult to apply in practice. "Risk" is frequently a central theme, however, none of the existing schemes explicitly considers the distinct elements of risk that have become so relevant to organizational buyers in the emerging competitive environment.

The purpose of this paper is to explore the differences in buying behavior under various situational risk conditions. While marketing managers seem to have a clear understanding of low-risk and high-risk purchases, the buying process under moderate levels of risk is much more difficult to assess. To focus on this problem, the paper embraces recent trends in the management literature toward risk assessment and builds on the organizational buying literature to develop a simple classification scheme of purchase types.

The paper first gives an overview of several previous classification schemes and discusses the theoretical and managerial basis on which the two elements of risk -- purchase importance and task uncertainty -- were chosen. Crossing the two, creates a matrix of four purchase types. The paper suggests ways that the four types might be distinguished by variations in the decision process, buying criteria, and use of information. Then, data from a sample of actual purchase decisions provides an empirical evaluation of the four types. The paper concludes with a discussion of the implications of the framework for marketing management and personal selling.

BACKGROUND

Since it is well recognized that no one model can describe the wide variety of buying decisions facing organizations, classification schemes provide a framework for grouping together purchases that are similar in meaningful ways. Thus, classification schemes of buying decisions delineate a small set of purchase types that are encountered in organizations. The purchase types can then be compared and contrasted.

Buying decisions have frequently been classified according to the industry in which the buying company competes or the product purchased. For example, it is sometimes thought that there are similarities in purchasing within industries and therefore differences between industries. Several studies have examined purchasing tasks across industry sectors such as manufacturing, government, institutional, services, etc. For example, a recent large-scale research study of purchasing managers focused on the buying tasks performed in seven industry sectors [4]. In general, however, such studies fail to show significant distinctions in the buying process across industries. On the other hand, studies that focus on a particular industry (i.e., construction, metal working) find great variation in buying practices within the same industry [5, 6, 7].

Another way to classify buying decisions then is by product categories. For instance, products are often classified as: raw materials, parts and sub-assemblies, MRO items, resale items, or capital goods [8]. Such a categorization of purchases is based on the assumption that the products in one group are purchased in a certain way -- and this is different from the way that other products are purchased. Several studies have observed differences across product types for such aspects of the decision process as: relative participant influence [5], the importance of promotional elements [9] and the importance of various topics of information [10]. But, while these product-type differences exist, most authors attribute them to several underlying dimensions such as product complexity and commercial uncertainty [7].

Thus, while there is some support for differences in buying behaviors across product categories, the conceptual basis for these differences is the nature of the situational circumstances -- which may be only indirectly related to product categories. The most commonly discussed classification scheme based on situational characteristics is the "Buyclass" framework originally proposed by Robinson, Faris and Wind [11]. In this framework, purchase situations are classified as New Task, Modified Rebuy, or Straight Rebuy based on the newness of the problem, information requirements, and consideration of new alternatives. Although numerous research studies fail to support the buyclass scheme [5,12,13], more recent studies suggest that only one dimension -- made up of "newness plus information needs" -- underlies the three

categories. Furthermore, other significant elements of the purchase situation -- such as "purchase importance" -- are missing from the buyclass scheme [14].

The idea that situational characteristics are the most important predictors of buying behaviors has spawned several classification schemes based on various dimensions. While a complete review of these are outside of the scope of this paper, several examples illustrate the nature and variety of the alternative views. Quite some time ago in the marketing literature, Lehmann and O'Shaughnessy [15] proposed four categories based on the problems likely to be encountered: routine order products, procedural problem products, performance problem products, and political problem products. And most recently, Wilson, Lilien and Wilson [16] crossed the buyclass dimension with perceived risk to specify six types of purchases. Meanwhile, more within the mainstream of procurement management, Kraljic [17] proposed a four-cell matrix of purchase types based on the importance of purchasing and the complexity of the supply market.

Classification schemes such as these provide rich descriptions of the many intricacies involved in organizational buying, however, they suffer from several weaknesses. Most notably, the dimensions on which they are based are actually surrogates for a much wider range of variables. For instance, underlying the problem types proposed by Lehmann & O'Shaughnessy [15] are numerous elements of the situation including the frequency of purchase, training required, clarity of outcomes, inter-departmental conflict, and others. "Perceived risk" as discussed by Wilson, Lilien and Wilson, involves both financial commitment and technical uncertainty -- but these different elements of risk are not dealt with separately [16]. Finally, the "complexity" of the supply market discussed by Kraljic involves elements such as competitive conditions, pace of technological advance, entry barriers, and others [17]. The major problem is that these separate elements of the situation may have differing effects on the decision process. Thus, because these schemes are based on such broad sets of situational dimensions, they are complicated -- which makes them difficult to apply to actual strategic marketing decisions or in the design of selling strategies.

PROPOSED FRAMEWORK

Current strategic management thinking views the role of procurement activities as one of risk assessment and management [18]. But, while "risk" is widely accepted as a powerful influence on buying behaviors, the concept is not always defined consistently (see [19] for a review). In the marketing literature, perceived risk is thought to be composed of 1) the magnitude of adverse consequences if a wrong choice is made, and 2) the uncertainty under

which the decision is made [20]. These two dimensions -- corresponding to "purchase importance" and "task uncertainty" -- are not only two commonly discussed elements of risk, but they are also recurring themes from previous studies of buying behavior [21]. The proposed framework therefore conceptualizes different levels and types of risk based on these two situational dimensions in a matrix of organizational purchase types. In the following sections, we define each of these dimensions and then discuss the way they affect buying decisions.

Purchase Importance

The importance of a purchase to an organization is a key situational characteristic. Although most readers have an intuitive sense of the meaning of "purchase importance," however, a clear delineation of this construct is needed. The importance of the buying decision to an organization is certainly -- at least in part -- derived from the relative financial commitment of the decision. For example, organizations often use a technique called "ABC Analysis" to identify important purchases by analyzing the unit value and annual volume [22]. Thus, the most significant purchases -- in terms of dollar value to the firm -- receive more attention and likewise influence the purchase activities that are implemented. But, purchase importance is defined here as a perception on the part of a decision maker and it therefore involves more than just the financial cost of a purchase.

Our conceptualization of purchase importance is similar to "involvement" as discussed in the consumer behavior literature: it is not simply related to the cost of a purchase. Therefore, while an item can be important due to the total dollar value involved, a purchase decision may be important because the item is a critical input to the firm. Moreover, the importance of a particular buying decision will be effected by the circumstances of the moment -- for example, when a low total-value item becomes suddenly unavailable. Thus, we define purchase importance from the perspective of a decision maker faced with a specific purchase transaction. In this way, purchase importance is relative to other tasks facing a decision maker at a particular point in time.

Purchase importance is defined as: the buyer's perception of the significance of the buying decision in terms of the size of the purchase and/or the potential impact of the purchase on the functioning of the firm.

Task Uncertainty

The uncertainty surrounding a decision is well documented as a key situational influence on organizational decision making (cf., [23,24]). Moreover, across the numerous classification

schemes of buying decisions that have been proposed in the past, task uncertainty is a common theme. For example, Anderson, Chu & Weitz's construct of "newness plus information needs" defines an aspect of task uncertainty.

In a particular purchase situation, there may be an inability to specify the need, ambiguity about the consequences of alternatives, or diversity of goals among the decision participants. But, while there may be many sources of uncertainty, they all indicate a lack of information required to make the purchase decision. This view of task uncertainty is further evident in discussions of "information" in the decision process [10,25]. After all, a primary function of organizational buyers is to gather information to reduce the uncertainty of the decision and consequently, make a more effective and efficient decision for the firm. Thus, using task uncertainty as a key dimension of the classification scheme should provide an insightful view of the use of information in purchase decisions. Moreover, such insights would have useful implications for marketing managers and sales representatives.

Task Uncertainty is defined as: the buyer's perceived lack of information relevant to a decision situation.

Matrix of Four Purchase Types

Crossing these two dimensions creates a matrix of four purchase types. These are laid out in Figure 1 and denoted as Types 1, 2, 3 and 4. Type 1, the low-risk situation is low on both importance and uncertainty. At the other extreme, Type 4, the high-risk situation, is high on both elements of risk. Two types -- 2 and 3 -- define moderate-risk situations. In Type 2 situations, the defining element of moderate risk is uncertainty, whereas in Type 3, high purchase importance creates the moderate level of risk.

Insert Figure 1 About Here

Each of the types described by the matrix is expected to differ from the others in significant ways -- the decision proceeds differently, decision criteria have assorted weights, there is diversity in the topics of information sought, and variations in the use of different information sources. The distinctions between Types 1 and 4 are easily specified -- many of these distinctions concern the minimal effort involved in a Type 1 situation (the least risky) and the enormous amount of effort likely to be involved in a Type 4 situation (the most risky). Since Types 2 and 3 both represent moderate levels of risk, however, the likely variations in the buying decisions are more difficult to infer. Because these elements have not previously been treated

separately in the research literature, an exploratory and descriptive study would provide some initial evidence of their varying effects on buying behaviors. Nonetheless, based on the previous organizational buying research and on our own inductive reasoning of what decision makers are likely to do in each situation, we can provide a description of the expected results.

For a low-risk situation (Type 1), not much effort is required -- and the purchase is likely made by applying a simple rule-of-thumb. The choice is probably an obvious one that can be based on a simple computation or a routine procedure that has been previously established. The buyer's objective is to quickly process the order and move on to more pressing decisions.

In the mix of decisions facing any manager, Type 4 represents the situation with the greatest risk. In response, a wide range of information is likely to be sought from many sources. The buyer tries to "cover all the bases" since the purchase is critical -- but the way to proceed is not clear. For this reason, more participants will be involved in the decision process. Moreover, a great deal of discussion will occur among the decision participants since there is likely disagreement on the cause and effect relations of various purchase choices and outcomes.

Types 2 and 3 represent the middle-ground or "moderate" level of risk. They differ, however, in the source of that risk. Although Type 2 is not a very important purchase, there is a great deal of uncertainty surrounding the decision. To the contrary, the Type 3 purchase has little uncertainty -- yet it is an important decision for the firm. The differing effects of each element of risk will constrain some aspects of the decision process while encouraging the use of certain other activities.

For a Type 2 purchase, there is no simple rule-of-thumb or established procedure to follow. A trial-and-error process is likely to take place since there is little information on which to base the decision and little motivation to search for additional information -- since the purchase is not important. There may, however, be some superficial effort to provide documentation that the uncertainty was indeed reduced prior to the decision. The uncertainty surrounding the decision causes an uncomfortable situation for the decision maker, even though the purchase is not a significant one.

The Type 3 purchase, on the other hand, is every decision maker's dream. The purchase is important to the organization and thus, the buyer is motivated to perform well. At the same time, the lack of uncertainty in the situation means the buyer has access to critical information needed to make a knowledgeable decisions. This places the buyer in a powerful position and suppliers are likely to competitively seek the business. Moreover, the situation facilitates the use of price as an objective determining factor in the decision. The situation is "textbook" perfect.

To further explore these distinctions, we identified sets of variables expected to differ across the four purchase types. These are:

- 1) aspects of the decision process - the nature of the decision process,
- 2) decision criteria - the basis on which the choice is made,
- 3) information topics searched - the content of the information that is sought to help in the decision process, and
- 4) information sources consulted - materials and people from which the information is sought.

The following section explains the research methods used to evaluate the plausibility of the proposed matrix of purchase types along these lines.

RESEARCH METHOD

To assess the extent to which there are meaningful differences across the four purchase types, we sought data on actual purchase decisions that had recently been completed.

Data Collection

The data were collected through a research grant administered by our university's Department of Civil Engineering. Questionnaire packets were mailed to 1,000 organizations thought to be users of sodium and calcium chloride products. In each packet were two questionnaires: a) one was directed to the person who had primary responsibility for purchasing the mineral products, and b) another was directed to buyers responsible for any other type of product. Each questionnaire instructed the respondent to describe the "last purchase made." In an earlier study by one of the authors, this technique successfully provided descriptions of a wide variety of purchase situations.

The names and addresses were obtained from the membership roster of the National Association of Purchasing Management, state directories, and a trade association. The responses represent 70 purchases of the mineral products and 171 purchases of all other products. Since there has been some limited support for product-related differences in buying behaviors, we tested for mean differences between the two samples on the classification variables (purchase importance and task uncertainty). Since there were no differences, the data were pooled and the total sample size became 241. Thus, while the purchases were concentrated in some industries and products, the data captured a wider variety of situations.

Table 1 presents sample profile information concerning the organization, focal purchase, and respondent. The respondents represented the organizations from fourteen major S.I.C.

industry groups. While 29% of the sample are from governmental agencies, the majority are from manufacturing firms (63%). The size of these organizations relative to similar organizations was distributed across small, medium and large organizations. There were 164 different types of products that were reported as the focal purchases. Over half were purchased direct from other manufacturers. Almost 20% of these transactions were newly negotiated contracts and 30% were part of a previously negotiated contract. The remaining 50% involved no contract. These descriptors of the sample illustrate the wide variety of products and purchase situations reported by the respondents.

Insert Table 1 About Here

The respondents were mostly from the purchasing area (68%), while another 29% categorized themselves as general management/administration. The average respondent has worked in the present position for an average of 7.6 years. Most hold a bachelor's degree (46%) and the remainder varied from having achieved a high school degree (21.4%) to several who hold the Ph.D. (2.1%).

Research Measures

The items to measure purchase importance and task uncertainty were five-point Likert-scale items anchored at "strongly disagree -- strongly agree." These measure were developed and tested in an earlier paper by the author. Six items measuring purchase importance had a Cronbach's alpha of .83 and eleven items measuring task uncertainty were reliable at $\alpha = .81$.

The particular variables which measured the numerous purchasing activities are listed in Table 2 along with the total-sample means and standard deviations.

Insert Table 2 About Here

The measures were either open-ended questions, or bi-polar adjectives/phrases. The time spent for the decision and the number of suppliers contacted were measured by the response to open-ended questions. The size of the buying center was determined by the number of people listed in a question asking for the involvement of others in the focal decision. Effort made to search is the average score of two (five-point) bi-polar items anchored at "little effort made to locate information / much effort" and "very little time spent searching for information / great deal." The respondent was also given a list of six decision criteria and asked to rate the importance of

each on a five-point scale anchored at "not important / very important." For each of eight sources of information, the respondent rated the extent to which that source provided information on each of five topics according to a six-point rating scale anchored at "provided no information on this topic / provided a great deal of information on this topic." The score for each topic was the average of search across the sources on that topic. The score for each source then was the average across the topics for that source.

All of the research measures were answered by the respondent with regard to the focal purchase -- that is, the "last" purchase made.

Analysis Procedures

The overall analysis strategy is to classify the transactions into the four risk categories and then examine the mean differences of research variables across these purchase types.

To classify the focal purchases into the four purchase types, we first computed the total-sample means for purchase importance and task uncertainty. The mean score then served as a cut off point between high and low -- i.e., those purchases with an importance score greater than the mean were classified as high purchase importance. The same was done for task uncertainty. Then the different combinations of high/low purchase importance and task uncertainty determined the purchase type into which each purchase was classified. Note that this method identifies those purchases that are "relatively" higher or lower than one another since the scales have no true quantitative meaning.

Because there was such a large number of variables to examine, we first used a stepwise discriminant analysis to identify the variables which were most efficient in discriminating among the four purchase types. Four separate analyses were performed for each of the groups of variables listed in Table 2. The stepwise selection method starts with no variables in the model and then selects the one variable that most contributes to the discriminatory power of the model -- that is, the variable that accounts most for differences among the four purchase types. In subsequent steps the excluded variables are evaluated for entry into the model and the variables already in the model are re-evaluated for removal. The criterion is Wilk's *lambda* (the likelihood ratio statistic for testing the hypothesis that mean differences on the selected variables are equal). When no other changes can improve the model, the procedure stops. (For more details on the procedure, see [26]).

After this smaller set of variables was identified, we tested for the significance of the mean differences across the four purchase types. Multiple *t* tests are not appropriate, however, because the probability of a type 1 error increases with the number of intergroup comparisons.

We therefore performed Duncan's multiple-range test. This procedure tests the significance of differences between means of paired groups and controls the type 1 error rate across the multiple tests.

FINDINGS

Classification of Purchase Types

The total-sample means and standard deviations for purchase importance were $\mu = 2.67$, $\sigma = .97$, and for task uncertainty, $\mu = 1.76$, $\sigma = .63$. The means were the cut-off for classification of the purchases as high or low on each variable. Although task uncertainty was in general low, some in-depth interviews revealed that respondents had a tendency to report lower uncertainty when they were asked to report the purchases retrospectively after the purchases were done. Table 3 reports the mean scores on each of these dimensions within the four purchase types and the number of observations classified into each cell. Since four observations in the data set were missing values for importance and uncertainty, the analysis is based on the remaining 237 observations.

Insert Table 3 About here

Stepwise Discriminant Analysis

The results of the stepwise discriminant models for each of the four areas of purchasing activities are given in Table 4.

Insert Table 4 About here

In the first model (aspects of the decision process) all four of the variables entered the model. In the second analysis using the five, only vendor reliability did not enter the model. Two of the five variables entered the model for information topics searched: market conditions and user needs. Finally, four sources of information entered the last model: top management, purchase history records, users, and sales representatives. These results indicate which of the variables are most useful for distinguishing among the four types of purchases. They do not imply, however, that every purchase type differs from all others on each of the variables. To determine where those differences lie requires further analysis.

Post Hoc Tests

The results of Duncan's multiple-range tests are reported in Table 5. The details of the results are provided here, however, in the discussion section we provide descriptive summaries of the findings with respect to each purchase type.

Insert Table 5 About Here

Aspects of the Decision Process. More activity in the decision process was consistently observed for Type 4, the high risk situation, while the least was evident for the Type 1, low risk situation. Type 4 situations elicit the most search effort and Type 1, the least. Types 2 and 3, however, both expend a moderate level of search effort. Type 4 also took significantly longer than the others and involved more decision participants in the buying center. While there seems to be some ordering with regard to time spent ($1 < 2 < 3 < 4$), Types 1 and 2, and Types 2 and 3 did not differ (within sampling variance) on length of decision process. The largest numbers of suppliers were contacted for Type 4 and the smallest number for Type 1.

Similar to the pattern of search effort, Types 2 and 3 both contacted a moderate number of suppliers and did not differ significantly from one another. Overall then, Types 2 and 3 exhibit a similar level of activity on all the aspects of the decision process. This finding seemed to confirm that the level of risk is a combination of uncertainty and importance. Although Type 3 is of high importance and low uncertainty, whereas Type 2 is of low importance and high uncertainty, both types were considered to be of moderate risk level. Hence, in both types, a similar level of decision process activity was observed.

Decision Criteria. Although similar in the aspects of the decision process, distinctions between Types 2 and 3 become evident when looking at the decision criteria that were most important in each purchase type. In all four of the purchase types, product suitability was the most important criterion. But, comparing across the purchase types, Type 3 is generally the highest on all the decision criteria. Supply availability is less important for Type 2 and 4 purchases and relatively more important for Types 3 and 1. Thus supply availability seems to distinguish low from high uncertainty situations.

Price is another criterion that is significantly more important for Type 3 than for the other purchase types. Customer service/support is of more concern when the purchase is of high importance (Types 3 and 4). This is because important purchases involve larger dollar amounts and/or longer time commitments -- hence, the supplier's service/support is of more concern. Finally, on-time delivery is a critical consideration for Type 1 -- just as critical as it is

for the more important purchase Types 3 and 4. On-time delivery, however, is significantly less important in a Type 2 situation. This finding reflected the fact that under high uncertainty, it may require substantial effort to pursue on-time delivery.

Information Topics Searched. Buyers searched for the most information about market conditions in Type 3 and less so for Types 1, 2 and 4. This makes sense because the buyer in situation 3 knows what kind of market information is relevant to the decision and is likely to be in a powerful position relative to other buyers. User needs were investigated more often for Types 2 and 3 than for both Types 1 and 4. Buyers in the Type 3 situation will investigate user needs to assure that such an important purchase meets the required specifications. In Type 2 situations, however, user needs are investigated because the buyer has little information with which to make the decision.

Information Sources Consulted. Top management was consulted more often for purchase Types 3 and 4, thus distinguishing high from low importance purchase types. This result reflects top management's willingness to be more concerned about important purchases than unimportant ones -- this is a reasonable time and effort allocation for top management. Both purchase history records and sales representatives were consulted more often for Type 3 purchases and less so for Types 1, 2 and 4. Users were not likely to be consulted as much for Type 1 purchases as for Types 2, 3, and 4. Thus, users are a source of information when the purchase is important, uncertain, or both.

DISCUSSION

Before discussing the implication of these findings, summary descriptions of each purchase type are provided.

Descriptions of the Four Purchase Types

For each of the purchase types, we assigned a descriptive label which further characterizes the decision situation. In addition, we identified several transactions from the data set that are most typical of each purchase type (the mean scores on purchase importance and task uncertainty are near the cell means). These are used as examples to further illustrate the nature in each purchase situation.

Type 1: Purchase-Support Situation. In the low risk situation, buyers make decisions in a short period of time with little effort -- few suppliers need to be contacted, the decisions seldom require others' involvement, and not much information needs to be acquired. The little information that is used seems to come from purchase history records and sales representatives.

The most important criteria are product suitability, supply availability and on-time delivery. Price and customer support are less important to the buyer in this situation. Overall then, the buyer seems to focus on the routine aspects of purchasing, such as simply processing the order. Therefore, the Type 1 purchase situation may be labeled as the "Purchase-Support Situation."

A typical example of this situation was the purchase of \$150 worth of pipe fittings for a company that manufactures automated test machinery. The respondent was a Senior Buyer who had purchased the item three times in the past year at the request of the production department. Consistent with the Type 1 situation, the buyer didn't need to search for much external information and made the purchase within one day. Another Type 1 situation was made by a "Motor Equipment Clerk" at a county highway department who responded with regard to the purchase of sodium and calcium chloride used for de-icing roadways. The buying activities were similar to the pipe fitting example.

Type 2: Frustrating Situation. Type 2 is a situation marked by a moderate level of risk -- the decision seems to have little importance and yet, the decision maker faces much uncertainty. Compared to the Type 1 situation that is of similar importance, this situation requires significantly more activity on the part of buyers. None of the decision criteria are very important relative to the other three purchase types. The uncertainty surrounding the situation seems to preclude a clear idea of just what criteria should be relevant to this type of purchase. Moreover, because it is not an important decision, buyers are not much concerned about the decision criteria. The relatively higher mean scores on this purchase type for consulting users and searching for information on user needs indicates that much of buyers' efforts focus on trying to find out exactly what is required by the organization.

A typical example of this situation was the purchase of an up-grade for a computer spreadsheet program made by the Deputy Commissioner of a county government agency. The buyer talked with both users and others in top management besides reading articles in trade publications, looking at advertising, and even talking with colleagues at other firms. The respondent was uncertain about how to define and measure the need for the product and how to evaluate the product. It appears that much effort was needed to make a purchase that was perceived by the respondent as having a low level of importance relative to other decisions. In another Type 2 situation, a Purchasing Manager at a leather goods manufacturer was involved in the purchase of leather wallets from a Korean supplier to be resold to a customer. Although it was not a particularly important purchase, this item had not been purchased previously and therefore several suppliers were contacted and much information about the suppliers was collected. The President and the Vice-President of Sales were also involved in the decision

process. The uncertainty in the decision was concerned with determining which was the best product to purchase and how well the purchase would work out for the company.

Type 3: Efficiency-Optimizing Situation. Type 3 purchases are similar to Type 2 on all the aspects of the decision process and thus the time and effort required to complete the purchase. The lack of uncertainty in a Type 3 situation, however, facilitates a more thorough investigation. Here buyers study not only user needs, but are in a position to assess market conditions. While a wide range of decision criteria are important, the situation facilitates the buyers' use of price as a determining factor. Moreover, search for information for Type 3 purchases seems to be more efficient than for the other types. For example, there is more reliance on each of the sources of information than in a Type 4 situation, but the overall effort at searching is lower than Type 4. Thus, Type 3 situations seem to elicit a systematic and efficient purchase decision process.

In the typical Type 3 situation, a Purchasing Supervisor at a food ingredient manufacturer had purchased corrugated boxes for packaging products for shipment. This was an extremely important purchase for the firm and the specifications and ways to evaluate the choices among vendors were clear. The buyer was able to search a wide range of sources of information on a variety of topics. In another example of this type of situation, the Director of Purchasing for a county government bought a facsimile machine. The organization had purchased three facsimile machines in the past and therefore the product and variations of features were familiar. Both the users and the department director had input into the decision. A competitive bidding procedure facilitated the process.

Type 4: Strategic-Challenge Situation. The Type 4 purchase presents a challenge to decision makers. Not only is the purchase important to the organization, but there is much uncertainty surrounding the decision. Of all the purchase types, the most activity takes place for Type 4. There is much effort to seek useful information to reduce the uncertainty, more participants are involved in the process, a larger number of suppliers are contacted, and all of this takes more time than for the other purchase types. The search for information is not quite focused, however, since the way to evaluate the purchase choices is not clear to the decision makers. Price is less important than is product suitability. Finally, customer service and support are critical because of concerns over future problems.

In a typical Type 4 situation, the Purchasing Manager for a specialty glass manufacturer had just completed the purchase of "stretch-wrap" equipment worth \$185,000. This equipment represented a new method of preparing outgoing shipments and replaced a conventional cardboard and metal strapping procedure. More than five people in the firm became involved

in the decision: Purchasing Manager, Production Manager, Chief Engineer, Shipping Foreman, and other shipping personnel. Six vendors were contacted over a six-week period and evaluated as potential suppliers. Customer support, product suitability and the relationship with the supplier were the most important criteria for the decision. In another Type 4 situation a staff member from Corporate Purchasing reported on the purchase of \$5 million of "Colemanite" ore to be used as a boron source. The company is a large manufacturer of glass, fiberglass, coatings, and chemicals. This was a major financial commitment, however, uncertainties arose over how the outcome of this purchase would effect for the organization. Others in the organization from regional purchasing and the process department were involved in searching and analyzing information related to this decision.

Implications

In trying to develop approaches for dealing with customers who face the inherent risks of acquiring goods and services for an organization, marketing managers and sales representatives would benefit by evaluating the dimensions of risk examined in this study. The results show that there are significant variations in the purchases made under different levels of risk and different types of risk. The matrix of four purchase types provides a framework for a situation-specific segmentation scheme and for developing customer account strategies.

Market segmentation schemes are most often conceptualized in terms of product categories or vertical markets. The idea of viewing those customers in terms of buying situations and processes, however, is not new. Marketing managers often use the buy-class framework, for example, to understand variations of decision making within the same product or market. But the matrix of four purchase types offers an alternative view of customers in those markets. Since risk seems to be a central theme of organizational buying, marketing managers should consider the different types of risks and develop alternative communication vehicles for targeting those customers. Further, the matrix could be used to discuss market shifts. For example, a new technology may be viewed by most all customers as a Type 4 situation. Over time, however, it is likely to change to a Type 3 for some customers. For a particular company, these applications would require a market research study to assess more clearly the characteristics of the four risk types as they relate to the focal market.

On the other hand, the application of the matrix by sales representatives is more immediate. Understanding the type of purchase situation facing a potential customer would assist sales representatives in developing account strategies. By focusing their attention on purchase importance and task uncertainty, the sales representatives would gain a clearer picture

of the likely buying decision process. Moreover, this would direct the sales representatives' efforts in the selling cycle -- keeping in mind that perceptions of importance and uncertainty may be changing relative to the other decisions facing the decision participants. The sales representative would need to develop a set of probing questions with which to assess both purchase importance and task uncertainty.

More experienced sales representatives probably already perform a type of situation assessment and account strategy development -- the idea of "adaptive selling" has been identified and described in several research studies [27]. The matrix could be used by these experienced representatives to articulate what they already know and to train new sales representatives. An example of such an application is as follows: With the help of experienced sales representatives, an executive responsible for training could develop scenarios of prototypical purchases made by the organization. These could then be classified according to the proposed framework. At a training seminar, the matrix would be explained by way of these examples. Then the seminar attendees could be asked to either classify their own experiences, or less experienced trainees could be given fresh descriptions of purchases to classify.

The focus of such an exercise may initially appear to be the precise classification of purchases into the four types. Although the exercise involves such a task, the primary benefit is the discussion of the numerous issues concerned with distinctions among purchase types. For example, based on the variables in our study alone, a broad range of issues related to purchasing would be drawn out in a discussion of the matrix. The articulation of these issues by way of example and discussion is the primary benefit of the classification scheme in a sales training application.

For research scholars, the classification scheme represents another view of organizational buying behavior. This classification scheme can provide the basis for generating specific hypotheses about the behaviors of each purchase type. Because the data used for this paper were collected for other purposes, however, we were limited by the particular measures that had been included. Subsequent research should examine the variation of these and other relevant aspects of organizational buying across the four types. More research is also needed to further clarify the dimensions of risk examined here.

TABLE 1: SAMPLE PROFILE INFORMATION

RESPONDENT'S ORGANIZATION

Industry (based on reported SIC codes)	<u>Number</u> ¹	<u>Percent</u>
Oil and Gas Extraction	19	8.2
Food and Kindred Products	38	16.0
Textile Mill Products	7	3.0
Paper and Allied Products	6	2.6
Chemicals and Allied Products	35	15.1
Petroleum Refining	6	2.6
Rubber and Misc. Plastic Products	1	.4
Leather and Leather Products	4	1.7
Stone, Clay, Glass, and Concrete	5	2.2
Primary Metal	4	1.7
Fabricated Metal	16	6.9
Machinery, except Electrical	10	4.3
Transportation Equipment	14	6.1
Public Administration	67	29.0
Size of Organization (relative to other similar organizations)		
Small	64	26.8
Medium	93	38.9
Large	82	34.3

FOCAL PURCHASE

Source of Supply		
Distributor	97	43.3
Direct from Manufacturer	127	56.7
Transaction Type		
Newly Negotiated Contract	42	19.9
Previously Negotiated Contract	64	30.3
No Contract was involved	105	49.8

RESPONDENTS

Functional Area of the Respondent		
Purchasing	163	68.2
General Mgt/Administration	69	28.9
Engineering/Production	4	1.7
Other	3	1.3
Education (highest level achieved)		
High School	51	21.4
2-year College	43	18.1
Bachelor's Degree	110	46.2
Master's Degree	29	12.2
Ph.D.	5	2.1

¹ Totals may not add up to sample size because some respondents omitted answers.

TABLE 2: PURCHASE ACTIVITY VARIABLES

ASPECTS OF THE DECISION PROCESS	Total-sample mean	standard deviation
Effort Made to Search Information (average of two Likert items, range= 1 to 5)	2.32	1.22
Number of Suppliers Contacted	2.71	2.07
Size of Buying Center (number of decision participants)	2.48	1.16
Time Spent for the Decision (number of days)	29.35	79.86
DECISION CRITERIA (each rated in terms of importance, range= 1 to 5)		
Price	4.01	1.03
On-time Delivery	4.44	0.93
Product Suitability	4.70	0.57
Supply Availability	4.39	0.93
Vendor Reliability	4.53	0.71
Customer Service/Support	3.90	1.19
INFORMATION TOPICS SEARCHED (extent of search on each, range= 1 to 6)		
Product Specifications	3.12	1.06
User Needs	2.84	1.11
Price/Cost Structure	2.85	1.02
Market Conditions	2.45	1.16
Capability of Supplier	3.01	1.06
INFORMATION SOURCES CONSULTED (extent of search from each, range= 1 to 6)		
Sales Representatives	3.78	1.15
Advertising	2.15	1.29
Product Literature	2.41	1.31
Top Management	2.68	1.50
Purchase History Records	3.41	1.35
Users	3.27	1.27
Articles in Trade Publications	2.12	1.22
Colleagues at Other Firms	2.37	1.48

TABLE 3: MEANS, STANDARD DEVIATIONS AND FREQUENCIES OF PURCHASE TYPES

Purchase Type	Purchase Importance		Task Uncertainty		Frequency
	Mean	S.D.	Mean	S.D.	
TYPE 1	1.97	.52	1.35	.23	91
TYPE 2	1.90	.48	2.42	.53	41
TYPE 3	3.52	.58	1.37	.26	53
TYPE 4	3.60	.64	2.35	.53	52

TABLE 4: STEPWISE DISCRIMINANT ANALYSIS RESULTS

Step	VARIABLES		Univariate <i>F</i> - Ratio	Prob > <i>F</i>	Wilk's <i>lambda</i>	Prob < <i>lambda</i>
	ENTERED	REMOVED				
1	Search Effort		21.740	.0001	0.75593	.0001
2	Suppliers Contacted		4.067	.0080	0.71267	.0001
3	Buying Center Size		2.951	.0333	0.68246	.0001
4	Length of Decision Process		2.849	.0380	0.65436	.0001
1	Supply Availability		6.743	.0003	0.91717	.0002
2	Customer Service/Support		4.331	.0056	0.86667	.0001
3	Price		3.100	.0273	0.83183	.0001
4	Product Suitability		2.776	.0415	0.80161	.0001
5	On-Time Delivery		2.005	.1126	0.78028	.0001
1	Market Conditions		4.533	.0044	0.93891	.0042
2	User Needs		2.566	.0547	0.90540	.0020
1	Top Management		6.480	.0004	0.91100	.0003
2	Purchase History Records		2.510	.0589	0.87763	.0002
3	Users		2.319	.0754	0.84770	.0001
4	Sales Representatives		1.874	.1334	0.82405	.0001

TABLE 5: POST HOC TESTS ¹

PURCHASE ACTIVITY <i>Uncertainty/ VARIABLES</i> <i>Importance</i>	TYPE 1 <i>Low Uncertainty/ Low Importance</i>	TYPE 2 <i>High Uncertainty/ Low Importance</i>	TYPE 3 <i>Low Uncertainty/ High Importance</i>	TYPE 4 <i>High High</i>
Aspects of the Decision Process				
Effort Made to Search Information	1.75 ^a	2.47 ^b	2.32 ^b	3.38 ^c
Number of Suppliers Contacted	1.68 ^a	2.89 ^b	2.76 ^b	3.74 ^c
Size of Buying Center	2.15 ^a	2.47 ^a	2.49 ^a	3.21 ^b
Time Spent for the Decision (Days)	6.3 ^a	19.3 ^{ab}	38.6 ^b	92.0 ^c
Decision Criteria				
Supply Availability	4.49 ^a	3.95 ^b	4.73 ^a	4.17 ^b
Customer Service/Support	3.77 ^{ab}	3.50 ^a	4.29 ^c	4.08 ^{bc}
Price	3.80 ^a	4.00 ^a	4.37 ^b	3.95 ^a
Product Suitability	4.77 ^{ab}	4.40 ^c	4.87 ^a	4.67 ^b
On-time Delivery	4.56 ^a	4.00 ^b	4.50 ^a	4.52 ^a
Information Topics Searched				
Market Conditions	2.17 ^a	2.39 ^a	2.93 ^b	2.55 ^a
User Needs	2.56 ^a	3.03 ^{bc}	3.26 ^b	2.77 ^{ac}
Information Sources Consulted				
Top Management	2.33 ^a	2.45 ^a	3.44 ^b	2.75 ^b
Purchase History Records	3.40 ^a	3.25 ^a	3.94 ^b	3.00 ^a
Users	2.93 ^a	3.37 ^b	3.58 ^b	3.49 ^b
Sales Representatives	3.59 ^a	3.54 ^a	4.30 ^b	3.72 ^a

¹ Means within a row that have matching superscripts are not significantly different, $\alpha \leq .10$, following Duncan's multiple-range procedure.


FIGURE 1: MATRIX OF FOUR PURCHASE TYPES

		TASK UNCERTAINTY	
		LOW	HIGH
PURCHASE IMPORTANCE	LOW	TYPE 1 <i>LOW RISK</i>	TYPE 2 <i>MODERATE RISK</i>
	HIGH	TYPE 3 <i>MODERATE RISK</i>	TYPE 4 <i>HIGH RISK</i>

REFERENCES

1. Porter, M.E., *Competitive Advantage: Creating and Sustaining Superior Performance*, Free Press, New York, 1985.
2. Spekman, R.E., Perceptions of Strategic Vulnerability Among Industrial Buyers and Its Effect on Information Search and Supplier Evaluation, *Journal of Business Research* 17, 313-326 (1988).
3. Reichard, R.S., Risk Management: A Purchasing Tool for the 21st Century, *Purchasing* 9, 40-45 (May 1992).
4. M. G. Kolchin, *Purchasing in the Industrial, Institutional, Governmental, and Retail Sectors: A Comparative Study*, Center for Advanced Purchasing Studies, Tempe, AZ, 1990.
5. J. A. Bellizzi, Product Type and the Relative Influence of Buyers in Commercial Construction, *Industrial Marketing Management* 8, 213-220 (1979).
6. P. D. Boughton, The Competitive Bidding Process: Beyond Probability Models," *Industrial Marketing Management* 16, 87-94 (1987).
7. G. L. Lilien and Wong, M.A., An Exploratory Investigation of the Structure of the Buying Center in the Metalworking Industry, *Journal of Marketing Research* 21, 1-11 (1984).
8. Leenders, M.R., Fearon, H.E. and England, W.B., *Purchasing and Materials Management*, Richard D. Irwin, Homewood, IL, 1989.
9. D. W. Jackson, Jr., Keith, J.E. and Burdick, R.K., The Relative Importance of Various Promotional Elements in Different Industrial Purchase Situations, *Journal of Advertising* 16, 25-33 (1987).
10. Monczka, R.M, Nichols, E.L., and Callahan, T.J., Value of Supplier Information in the Decision Process, *International Journal of Purchasing and Materials Management*, 20-30 (Spring 1992).
11. Robinson, P.J., Faris, C.W. and Wind, Y., *Industrial Buying and Creative Marketing*, Allyn and Bacon, Boston, 1967.
12. Bellizzi, J.A. and McVey, P., How Valid is the Buy-Grid Model?, *Industrial Marketing Management* 12, 57-62 (February 1983).
13. Doyle, P., Woodside, A.G. and Michell, P., Organizational Buying in New Task and Rebuy Situations," *Industrial Marketing Management* 8, 7-11 (1979).
14. Anderson, E., Chu, W. and Weitz, B.E., Industrial Purchasing: An Empirical Exploration of the Buyclass Framework, *Journal of Marketing* 51, 71-86 (July 1987).

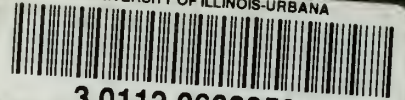
15. Lehmann, D.R., and O'Shaughnessy, J., Difference in Attribute Importance for Different Industrial Products, *Journal of Marketing* 38, 36-42 (April 1974).
16. Wilson, W.J., Lilien, G.L. and Wilson, D.T., Developing and Testing a Contingency Paradigm of Group Choice in Organizational Buying, *Journal of Marketing Research* 28, 452-466 (November 1991).
17. Kraljic, P., Purchasing Must Become Supply Management, *Harvard Business Review*, 109-113 (September-October 1983).
18. Spekman, R.E., Competitive Procurement Strategies: Building Strength and Reducing Vulnerability, *Long Range Planning* 18, 94-99 (1985).
19. Hawes, J.M. and Barnhouse, S.H., How Purchasing Agents Handle Personal Risk, *Industrial Marketing Management* 16, 287-293 (1987).
20. Sheth, J.N., A Model of Industrial Buyer Behavior, *Journal of Marketing* 37, 50-56 (October 1973).
21. Kohli, A., Determinants of Influence in Organizational Buying: A Contingency Approach, *Journal of Marketing* 53, 50-65 (July 1989).
22. Dobler, D.W., Lee, L. and Burt, D.M., *Purchasing and Materials Management*, McGraw Hill, Inc., New York, 1990.
23. McQuiston, D.H., Novelty, Complexity, and Importance as Causal Determinants of Industrial Buyer Behavior, *Journal of Marketing* 53, 66-79 (April 1989).
24. Spekman, R.E. and Stern, L.W., Environmental Uncertainty and Buying Group Structure: An Empirical Investigation, *Journal of Marketing* 43, 54-64 (Spring 1979).
25. Moriarty, R.T. and Spekman, R.E., An Empirical Investigation of the Information Sources Used During the Industrial Buying Process, *Journal of Marketing Research* 21, 137-147 (May 1984).
26. Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C., *Multivariate Data Analysis*, Macmillan Publishing Co., New York, 1992.
27. Spiro, R.L. and Weitz, B.A., "Adaptive Selling: Conceptualization, Measurement, and Nomological Validity, *Journal of Marketing Research* 27, 61-69 (February 1990).

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