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A six-stage model of the buying process for ERP software

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Abstract

This paper presents a model of the Enterprise Resource Planning (ERP) software acquisition process that reflects the findings from the four cases examined in this study. This ERP acquisition process model includes six distinctive, yet interrelated, processes (planning, information search, selection, evaluation, choice, and negotiations). This paper depicts the principal processes and many of the constituent activities, issues, dynamics, and complexities that pertain to the acquisition of ERP software. The results from this study contribute to the identification of processes that are part of this type of acquisition. Further, this model also suggests complexities that are worthy of further investigation, in and of themselves, if for no other reason than that they could prove the limit of generalizability of the model.
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Keywords: Enterprise Resource Planning (ERP) software; Acquisition; Planning; Evaluation; Negotiations

1. Introduction

Since the early to mid-1990s, the Enterprise Resource Planning (ERP) software market has been and continues to be one of the fastest growing segments of the information technology (IT) industry with growth rates averaging from 30% to 40% per year (Eckhouse, 1999). With worldwide sales of ERP software estimated to exceed US$22 billion by the year 2001 (PricewaterhouseCoopers, 1999; Yankee Group, 1998), it has been further estimated that by the year 2002, packaged applications would represent a significant portion of most IT portfolios (Meta Group, 1998). With costs equaling several thousands, hundreds of thousands, and even millions of dollars, ERP packaged software purchases are high expenditure activities for organizations that consume significant portions of their capital budgets. While overall IT expenditures already represent a significant portion of ongoing capital expenditures for many organizations and will continue to increase, little is known about how these expenditures are made, or more precisely, what organizations have to go through when they buy IT such as ERP packaged software (Verville, 1998, 2000; Verville & Halingten, 2001). Indeed, what processes do organizations use and what are the specifics involved in those processes?

In recognition of the importance of this issue and of the sizable risk that organizations take when they decide to buy this type of technology, the study that is presented herein focused on how organizations go about the task of acquiring ERP packaged software applications.

Taken beyond the bounds of studies carried out in organizational buying behavior (OBB) on the influencing factors mitigating the buying process, this study focused on the buying process itself and identified its (the process's) major components. It also revealed several issues relevant to the need and readiness of the organization both for the acquisition process as well as for the new ERP software. Further, it revealed issues relevant to the implementation of the ERP and brought to light the complexity of the process at the detail level. The results of the study prove, contrary to the wide-standing belief that IT acquisitions are done routinely and fairly simply, that acquisitions of this nature (for ERPs) are complex, involved, demanding, and intensive.

Prior to proceeding with the study, a brief review of the literature on ERP from the field of management information systems (MIS) and OBB was carried out. A methodology was then selected, and other appropriate tools were used to carry out the analysis and draw conclusions, all as presented below.

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2. Literature review

2.1. Enterprise Resource Planning

ERP research has concentrated on implementation and postimplementation issues (Esteves & Pastor, 2001; Verville, 2000).

The type of problems and issues that arise from the implementation of ERP systems range from specific issues and problems that can come up during the installation of an ERP to behavioral, procedural, political, and organizational changes, etc., that manifest subsequent to the installation (Appleton, 1997; Benson & Rowe, 2001; Bingi, Sharma, & Godla, 1999; Glover, Prawitt, & Romney, 1999; Miranda, 1999; Sieber, Siau, Nah, & Sieber, 1999; Stafyla & Stefanou, 2000).

While much attention is directed to implementation, postimplementation, and other organizational issues, the acquisition process for ERP software is for the most part being ignored. This issue is important, however, because as the stage proceeding the implementation process, it presents the opportunity for both researchers and practitioners to examine all of the dimensions and implications (benefits, risks, challenges, costs, etc.) of buying and implementing ERP software prior to the commitment of formidable amounts of money, time, and resources.

2.2. Organizational buying behavior

In addition to the above, a review of the literature from the field of industrial marketing and, more specifically, the area of OBB was also conducted. It revealed that little research has focused on the IT (or ERP) acquisition process (e.g., packaged software) itself. According to Geisler and Hoang (1992), whose study focused on the purchase of IT by service companies, most of the literature has not stemmed from research studies, but rather has been generated by practitioners who focused on the critical issues facing managers in the acquisition of IT and has been prescriptive in nature (e.g., research in the area of industrial purchasing or OBB has concerned itself with the development of integrated conceptual models and the empirical verification of hypotheses pertaining to specific aspects of industrial buying or OBB, Choffray & Lillien, 1980).

While this literature is rich in its study of various aspects of purchasing behavior within organizations, none of these studies has focused on the actual acquisition process itself, not to mention the acquisition of IT or ERP packaged software. The current focus of OBB continues to be the same, largely ignoring the advent of IT.

Neither the field of MIS nor the field of OBB has adequately considered the acquisition of ERP software. Hence, little insight has been provided from either of these areas.

3. Theoretical background

In the past 30 years, within the field of industrial marketing and more specifically the area of OBB, conceptual models such as Webster and Wind's (1972) *General Model of Organizational Buying Behavior* and Sheth's (1973) *Model of Industrial Buyer Behavior* have been developed to understand organizational buying. Webster and Wind's model incorporates the concept of the buying center whose response to purchase is analyzed as a function of four classes of variables: individual, interpersonal, organizational, and environmental. Sheth's model attempts to describe and explain all types of industrial buying decisions and is characterized by three main elements: (1) the psychological characteristics of the individuals involved; (2) the conditions that precipitate joint decision making; and (3) the conflict resolution procedures affecting joint decision making. Both the Webster and Wind and the Sheth models identify factors that influence the buying process. Both models also include a distinction as to whether the buying decision is a group/joint or individual/autonomous decision. However, neither model provides any hint as to the construct of even a general buying process that is used by organizations.

Further to these models of OBB, Robinson, Faris, and Wind (1967) developed a *buygrid framework*, which incorporates "buyphases or buystages." These stages represent the sequence of activities often performed in an organizational buying situation. These activities include: (1) recognition of need and a general solution; (2) determination of characteristics and quantity; (3) description of characteristics and quantity; (4) search for potential sources; (5) acquire and analyze proposal; (6) evaluate proposals and select suppliers; (7) select an order routine; and (8) performance feedback and evaluation. Another model proposed by Hillier (1975) concentrates on individual involvement in organizational buying, buyer–supplier functional interrelationships, and industrial buying as a corporate process. Yet another model, developed by Choffray and Lilien (1980), addresses the issues of individual differences in choice formation and interorganizational differences in buying behavior.

While many conceptual models of the buying behavior of organizations have been developed, there has been a lack of research to extend and test these models (Ward & Webster, 1991). According to these authors, the lack of specificity of these models is one of the reasons why researchers have not designed follow-up research. Another reason is their generality, which leads to their major strengths and weaknesses (Ward & Webster, 1991). According to Johnston and Lewin (1996, p. 2), these models having been developed during the "early stages of theory development" provided only general categories of constructs expected to influence organizational buying behavior, and as such, failed "to capture all of the concepts, variables, and relationships involved." Theoretically, certain aspects of these models of OBB may reflect *some* of the buying "realities" for IT, while others may not.

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