

# Defining value-based objectives for ERP systems planning <sup>☆</sup>

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## ABSTRACT

The planning and subsequent implementation of Enterprise Resource Planning (ERP) systems still present a significant challenge for most organizations. Although consulting firms and customer enterprises have been acquiring more experience and expertise in the field, the level of sophistication of these systems and their wide organizational and social impact frequently leads to failed ERP implementations. In an attempt to minimize these failure rates, this paper defines a set of value-based objectives that could be used to enrich the ERP systems planning process. ERP systems planning objectives grounded by stakeholder values can be used as a conceptual guide for enhancing the decision making processes involved in ERP projects. Using Keeney's value-focused thinking approach, a set of means and fundamental objectives was identified using data collected via in-depth interviews in three large European firms. The relationships and interdependencies among these objectives are also presented and provide a starting point for further research.

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## 1. Introduction

ERP software promises significant benefits to organizations. Some of these benefits include lowering costs, reducing inventories, increasing productivity [39], improving operational efficiency [6,20], attaining competitive advantage [4], and bettering the reorganization of internal resources [51]. However, even with these reported benefits, the level of overall success for ERP projects has oftentimes been questioned [42,48]. For example, Kwahk and Lee [29] have estimated failure rates above 60% for ERP projects.

The literature suggests that one notable reason for these high failure rates is the lack of organizations being able to properly align existing business processes with packaged ERP processes [57,59]. This paper argues that to ensure successful alignment [3] between organizational and ERP processes, a rich and exhaustive set of objectives that truly represent the stakeholder values of the enterprise must first be identified. While the literature agrees with the notion that ERP objectives are in fact an important critical success factor [1,2,23,32], it falls short of proposing clear, value-driven objectives and how they could be articulated for a given organizational context. Hence, the goal of this research is to create a rich set of objectives for enriching the ERP systems planning process where the ultimate aspiration is to minimize ERP failure rates in organizations.

To develop these objectives, data from 3 ERP implementation case studies were analyzed. Methodologically, this study is grounded in Keeney's value-focused thinking (VFT) approach [26]. Keeney [27] argues that for a given decision context, values of decision makers must first be identified rather than allowing existing alternatives (in this case ERP software) to constrain the thinking of decision makers. In other words, without first determining stakeholder values prior to selecting a specific ERP solution, project objectives tend to become limited by the bounds that are placed on organizations as a result of the technical implementation. And as will be elaborated further in the following sections of this paper, the notion that values should be the key driver for developing objectives is held by other IS researchers as well [22,41,52].

## 2. Theoretical and methodological considerations

As mentioned, this research employs Keeney's value-focused thinking (VFT) approach [26] to define a set of deep-rooted objectives for enriching the ERP systems planning process. Any objectives created using this approach could then be used as a framework for creating value-driven tasks and alternatives for the purpose of aiding decision makers in the ERP selection process. The literature suggests several different approaches to ERP selection that include ranking methodologies such as swing weights [40] and the analytical hierarchical process [8,58]. Important as these works may be, we believe that a clear definition of value-driven objectives is required prior to any ranking attempts [26]. Thus, in this paper we have undertaken extensive research to define a set of value-driven objectives. Our future research will then address how to determine alternatives from our objectives framework

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along with ranking their relative importance for a specific organizational context.

To determine objectives for any decision context, Keeney [27] argues that the values of decision makers must first be identified. For several decades researchers have recognized that values form the basis for sound decision making [35,46,47]. However, the literature suggests that because of their implicit nature, values are difficult to identify and often times are disregarded [11]. Meglino and Ravlin [33] indicate that values have been characterized using a range of descriptors such as needs, personality types, motivations, goals, utilities, attitudes, interests, and nonexistent mental entities. Keeney [26] comments that values can range from ethical principals that must be upheld to guidelines for preferences among choices.

More specifically, Keeney [26] comments that, “ethics, desired traits, characteristics of consequences that matter, guidelines for action, priorities, value tradeoffs, and attitudes towards risk all indicate values.” For example, an ethical value might be, “do not share sensitive information with others.” Similarly, an example of a value that deals with an attitude toward risk might be, “even though the ERP solution may cause some short-term profit losses for the firm, we still plan to implement a new system.”

Past researchers have used values as a basis for understanding various Information Systems phenomena. For example, Phythian and King [44] used the values elicited from manager-experts to identify key factors and rules influencing tender decisions. Hunter [24] extracted values from 53 interviews in two organizations to better understand the behaviors of information system analysts. Keeney [27] interviewed over 100 individuals to elicit their values to develop objectives related to Internet purchases. Dhillon and Torkzadeh [14] interviewed over

103 managers over a broad spectrum of firms to identify stakeholder values for the purpose of creating an exhaustive list of security objectives for managing IS security.

Past researchers have also used values as the basis for creating objective hierarchies for other decision making contexts not related to IS. For example, Chambal et al. [9] used a similar methodology to provide decision makers with a decision aid for choosing a new municipal solid waste management strategy. Merrick and Garcia [34] used a similar approach to provide decision makers with the best alternatives for improving a particular watershed.

To identify the values and subsequent objectives hierarchy for enriching the ERP systems planning process, this research used the data from three independent case studies that dealt with ERP planning and selection. The process we used to identify and organize these values along with developing the objectives hierarchy is shown in Fig. 1 and will be discussed in the following sections.

### 2.1. Case studies

The data derived from three organizational case studies was used for determining the values that drive ERP systems planning. The organizations used in this study are identified as Alpha, Beta, and Gamma (pseudo names to maintain confidentiality). A brief synopsis of each of these case studies is presented in this section.

The use of case studies, based on in-depth semi-structured interviews, seemed to be an appropriate research method given the exploratory nature of this study. Case studies enable asking penetrating questions and provide a richer understanding of organizational behavior

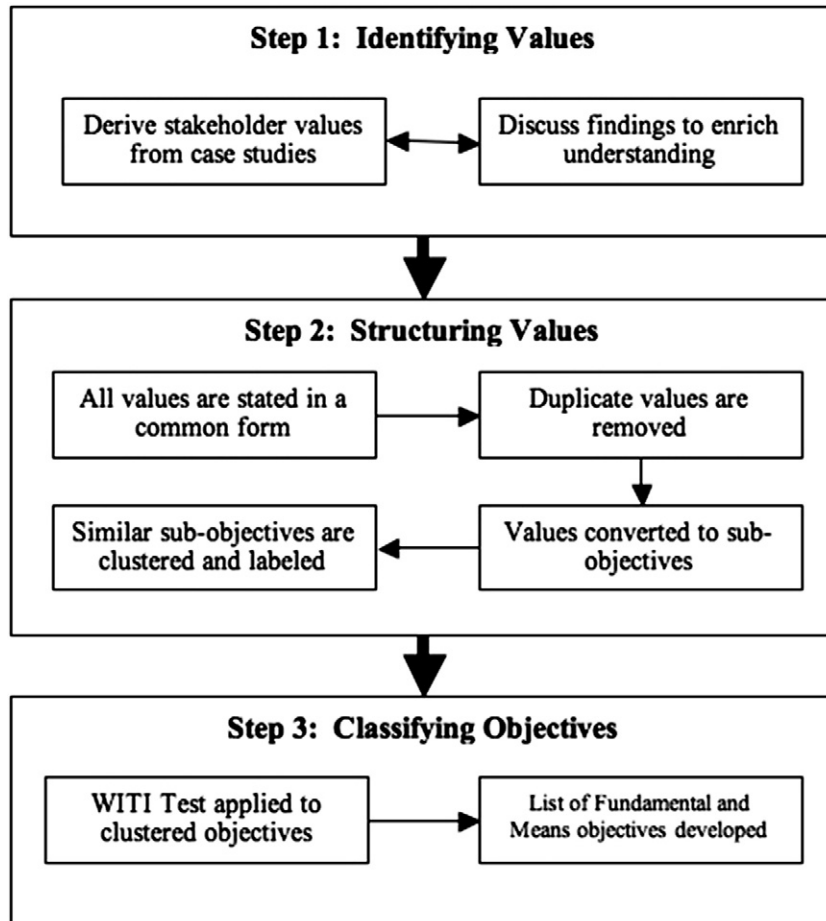


Fig. 1. Research approach.

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