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VALUE ASSESSMENT OF IS/IT SERVICE PROVISION WITHIN ORGANIZATIONS

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Abstract

This paper presents a means-ends objectives network that can be useful in assessing value of IS/IT service provision in organizations. This network is developed following Keeney's (1992) method of value focused thinking. This paper also highlights the importance of engaging in value focused thinking by presenting step by step application of the concept. A total of 71 interviews were completed; the preliminary analysis recognizes two areas where adequate consideration of value propositions will help in improving IS/IT service provision. Currently, an instrument is under development using this framework for more generalizable results. Such an assessment will help in remedying the bottlenecks, if any, in improving the competence of the IS/IT functional unit.

1. WHY ASSESS THE VALUE OF IS/IT SERVICE PROVISION?

Assessing the value of information systems/information technologies (IS/IT) service provision has been the preoccupation of many researchers. Some have considered strategic management as a way forward, particularly Bowman's (1974) notion of "rent" generation. Others have grounded themselves in industrial organization theory (Porter 1980). More recently, many researchers have been informed by the resource-based view of the firm (Rumelt 1984) as a means to understand the fundamental processes that transform resources into capabilities (for an application to design firm level capability, see Andreu and Ciborra 1996). Most studies focusing on the IT function level service provision have, however, considered user satisfaction, information quality, and individual/organizational impact as key determinants of success of organizational IT operations. DeLone and McLean (1992) identified six categories of IS success: system quality, information quality, use, user satisfaction, individual impact, and organizational impact. In addressing a similar issue, our intent is to take the debate a step further by considering concepts rooted in the strategy literature to assess the ability of an organization to deliver IT services to the users. Our aim is to conduct such an assessment by focusing on the value attached by the users to the ability of the IS/IT function in delivering IS/IT services. The concept of a value proposition focuses on benefits that end-users anticipate they will receive from service provision (Keeney 1999).

In addressing the notion of value of IS/IT service provision, two classes of definitions need to be considered. The first homes in on the notion of "value proposition." Values, according to Keeney, are "principles used for evaluation" (1992, p. 6), which are essential to assess "actual or potential consequences of action and inaction." With respect to IS/IT service provision, the value proposition can be defined as the net benefit of the service received from the IT function within an organization in the process of doing one's current work and planning for future use. The second class of definition relates to the concept of an "ability of the IT function." We term this concept *IT competence*; that is, the ability of an enterprise to successfully leverage IS/IT related business processes and individual skills to achieve an objective (cf. McGrath et al. 1995). In the context of our research, it is the combination of abilities and resources that allow an organization to provide better IS/IT services or to garner rents (Bowman 1974; Selznick 1957). Advantages gained from such *par excellence* service stem from proprietary assets that are largely intangible and tacit (Prahalad and Hamel 1990). The objective of this research is to elicit such idiosyncratic resources and abilities (i.e., IT competencies) and assess the value of these resources and abilities from the users' perspectives.

This paper is organized into three sections. Following this brief introduction, which systematically positions the nature and scope of this research, section two presents the methodology used to collect values attached to service provision. Section three presents a discussion of how an assessment of various values can be used within an organization. Finally, conclusions and future research directions are presented.

2. METHODOLOGY

As stated earlier, methodologically this research is based on Keeney's (1992) "value focused thinking" approach. Keeney suggests that most decision-making methods are based on alternative thinking practices where choices are made only from a limited list of available alternatives. The alternative-based approach is constrained by the limits imposed by decision makers in the process of identifying constraints and subsequently alternatives. As a consequence, individuals tend to forget what they really want to achieve. Since achieving an objective is the primary reason for being involved in any decision situation, Keeney contends that one should remain focused on the bottom-line objectives, which makes decisions meaningful and of value, instead of making choices among current alternatives. Keeney proposes value focused thinking as a method by address the most fundamental question: what do we want to do and why? Research conducted by Keeney (1992, 1999) has attempted to expose underlying values in a wide array of decision contexts. The inherent argument is that the value thinking process can help researchers and managers alike to be proactive and hence create more alternatives instead of being limited by available choices.

The value focused thinking consists of three steps in eliciting and framing values: (1) conduct interviews and construct a list of what they want in the decision context, (2) convert these statements into a common format of objectives (an object and a preference), and (3) establish a means-ends network of these objectives. By constructing the means-end objective network, fundamental objectives can be differentiated from means objectives, which contains important values. In the context of our research, this three-step method is applied in order to assess values attached, by users to IS/IT service provision within business organizations. A total of 71 end-users of IS/IT services were contacted from employees of five large businesses in the Southwest United States. The businesses represented the following industries: IT consulting, hotel and casino, banking, education and training.

Construct a list of what users want. The best way to find out what users value most is to ask them. Also, it is better to ask as many users as possible because different users may have different values and they may express them differently. However, a difficulty lies in the latency of these values. In many cases, users' values are hidden under the surface. Keeney recommends several stimulation techniques to surface these latent values. We chose a combination of two techniques to identify the latent values. The first method used was a wish list. Each interviewee was asked to express what their needs were in receiving IS/IT services within their organizations. The second method, which augments the simple wish list method, was the probing technique. In order to expand the wish list and whenever subjects were having problems articulating what they want, the interviewer posed several probing questions prepared beforehand. The list of probing questions included:

- * If you did not have any constraints, what would your objectives be?
- * What needs to be changed from the status quo?
- * How do you evaluate the competence of your IT department?
- * What do you expect from the IT support?
- * How do they tell if the IT service is good or bad?

Besides asking the interviewees to generate a wish list, we also asked them to generate a list of problems and shortcomings in IS/IT provision. The basic idea behind asking about problems and shortcomings was to generate objectives by articulating their concerns. The 71 interviews generated 340 wishes/problems/concerns.

Convert statements into objectives. These statements were converted to objectives, using a verb (direction of change) plus an object (target of change) format. Some statements on the list are compound sentences, which produce more than one objective, and some statements were repeated by several users. For example, one user wishes "to have a fully staffed application support department that knows the system so we do not rely heavily on one person if he is not available." Two objectives can actually be derived from this wish: (1) have a fully staffed application support department and (2) do not have dependence on one person. To eliminate these ambiguities and redundancies, two researchers reviewed each item on the list independently. This review and refinement produced 414 objectives in a common form of a verb plus an object.

In using IS/IT services, users wanted to achieve these 414 objectives. However, these objectives were not yet adequately articulated values and they also included duplicates. The objectives were then categorized in order to surface the meanings and the values attached to cluster the objectives. The categorization resulted in 27 clusters of objectives.

Establish means-ends network. As a next step of framing values out of objectives, the 27 objectives were classified into two categories: means objectives and fundamental objectives. The criterion of classification is whether an objective is an intermediate one, i.e., is it a means to achieve another objective or is it a final and a fundamental one in assessing IT competence. For example, the “increase system consistency” objective is a means objective, which in turn affects the objective to “increase ease of use.” As a result, eight fundamental objectives were identified. The means objectives, a total of 19, are presented in Table 1 and fundamental objectives in Table 2. Finally, all objectives are organized in a means-ends relationship diagram using directional relationships and the diagram is presented in Figure 1.

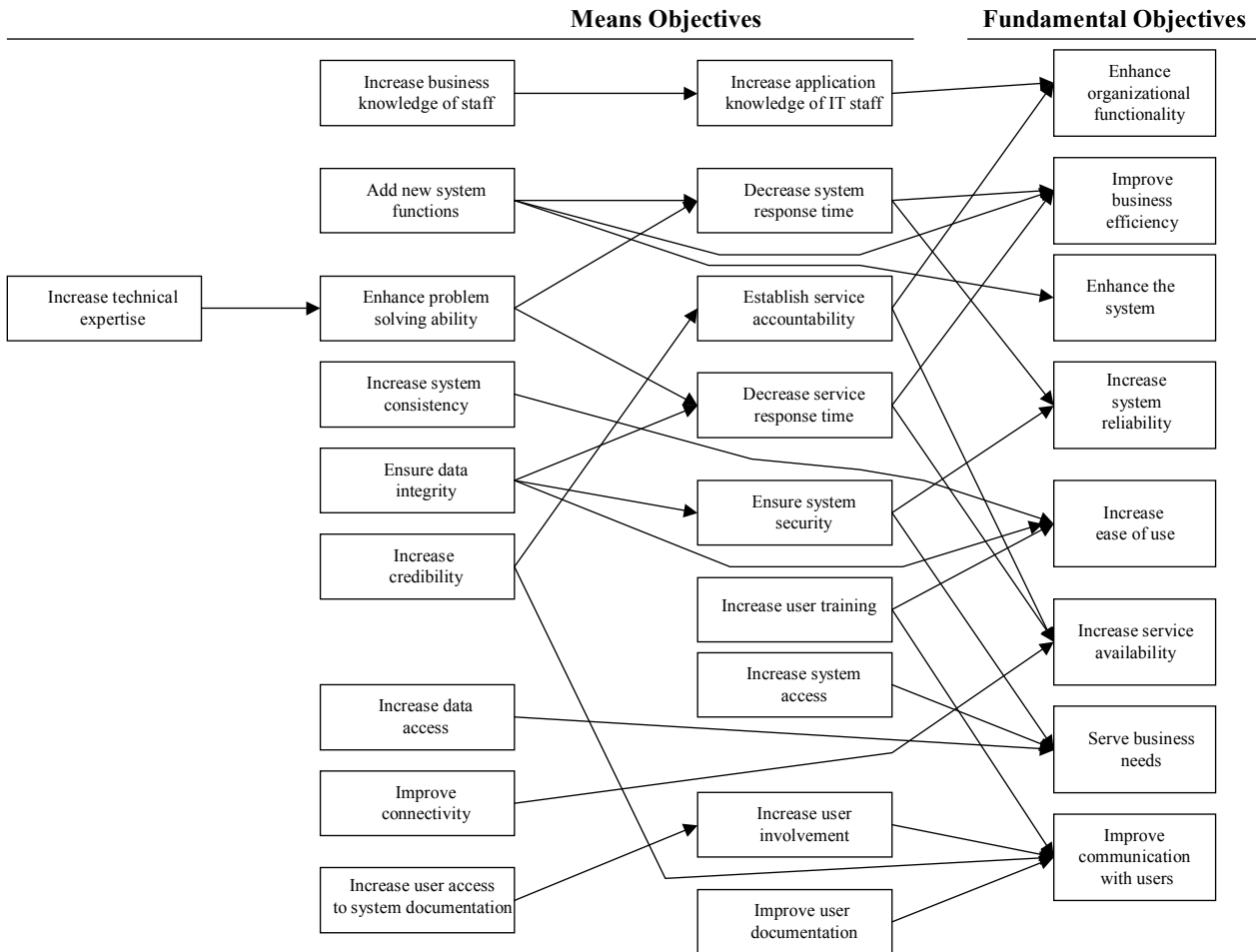


Figure 1. A Means-Ends Objectives Network for IT Competence

Table 1. Means Objectives Related to IT Competence (Abridged)*

Add new system functions	Increase application knowledge of IT staff
Decrease service response time	Increase business knowledge of IT staff
Decrease system response time	Increase system consistency
Enhance problem solving ability	Increase credibility
Ensure data integrity	Increase data access
Ensure security	Increase system access
Establish service accountability	Increase technical expertise
Improve connectivity	Increase user access to system documentation
Improve user documentation	Increase user involvement
	Increase user training

*Complete listing available from the authors.

Table 2. Fundamental Objectives Related to IT Competence (Abridged)*

Overall Objective: Improve IS/IT Competence	
Enhance organizational functionality	Increase system reliability
Improve business efficiency	Increase ease of use
Improve communication with users	Increase service availability
Enhance the system	Serve business needs

*Complete listing available from the authors.

3. USING END-USER VALUES

The best way to describe the utility of the value model is to consider various fundamental objectives and their measures as a means to interpret the level of IS/IT service provision. The cumulative value of the measures would be an assessment of the IT competence in service delivery; that is, the idiosyncratic resources and abilities. In other words, the measures would represent the value of the benefits of the service to the user. Therefore, bad or no service would result in a lower score and a good service in a higher score. The scores for varying degrees of service, however, need to be established qualitatively. The discussion below suggests how the value model could be used in either creating new or reconfiguring existing services. Examples are drawn from the value network diagram presented in the previous section.

3.1 Creating New IS/IT services

The inherent argument, based on Keeney (1999), is that new IT services can only be designed when an adequate gap has been found in the specific measures for a particular fundamental objective. If one is able to find a suitable slot where the value proposition can be increased, the enterprise is engaging in enhancing its IT competence by filling this identified slot; that is, placing new objectives in the diagram as a means objective or a fundamental objective. By directly addressing those gaps that end-users care about and value highly, the business enterprise can achieve improvements in IS/IT competence.

Drawing an example from the data for this research, one could argue that there is something more than “improving user involvement” and “improving user documentation” that is needed to improve communication with users. It could further be argued that by improving the credibility of IS/IT service providers, it would be possible to improve communications with users. This entails setting up of mechanisms that would facilitate increasing IS/IT service provider credibility. By focusing on existing gaps in value propositions, it is possible to create new services that would facilitate in achieving the core organizational purpose.

3.2 Reconfiguring Current IS/IT Services

The difference between designing a new service and improving/reconfiguring an old one is the starting point. In the case of reconfiguring existing IS/IT services, rather than focus on non-existing values, we home in on existing value propositions that are under-performing. Consider the example where the fundamental objective is to increase service availability. One of the means objectives in this case is to decrease service response time. Clearly a top-notch response time would lead to the best possible service. However if the response time is way below the accepted norm (say one hour), there is scope for improving the value proposition. There could be qualitative measures as well. In the case where an organization wants to improve communications with its users, it is essential to increase their involvement. The value proposition “user involvement” is going to have a qualitative measure. A focus on the value propositions defines the nature and scope of reconfiguring current IS/IT services.

4. CONCLUSION

In conclusion, using the notion of ascribing values to IS/IT service provision, we are able to develop a model for IS/IT competence (combination of unique resources and abilities) that will result in improved service provision. Research presented in this paper identifies various value propositions (the means-ends objectives network) that will be a precursor to measure the value of IS/IT competence, especially in IS/IT service delivery. The development of such an instrument is currently in progress.

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