

2000

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Guy M. Higgins, Jr.

University of Georgia, ghiggins@terry.uga.edu

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Recommended Citation

Higgins, Jr., Guy M., "If You Build It, Will They Come?" A Study of the Effect of System Structure on the Institutionalization of Knowledge Management within Organizations" (2000). *AMCIS 2000 Proceedings*. 346.

<http://aisel.aisnet.org/amcis2000/346>

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“If You Build It, WILL They Come?”

A Study of the Effect of System Structure on the Institutionalization of Knowledge Management within Organizations

Guy M. Higgins, Jr.; Department of MIS, University of Georgia, ghiggins@terry.uga.edu

Abstract

Along with its importance, the difficulty of identifying, capturing, systematizing, categorizing, and disseminating previously tacit knowledge within the organization is becoming increasingly clear. The author has previously proposed a biological/cognitive metaphor for the structure and functioning of an effective organizational knowledge management system. A series of case studies will be conducted to investigate the accuracy of this metaphor and to determine the effect of system structure on the process of knowledge management within consulting organizations. Institutionalization will be analyzed using Giddens' Structuration Theory

Introduction

The importance of knowledge has long been recognized. Long ago, Sir Francis Bacon (1597) wrote, “Knowledge is power.” More recently there has been an increasing recognition that “knowledge,” as opposed to “data” or even “information,” is the most critical organizational resource (Drucker, 1993), and that it is a resource that has not been well managed. Lew Platt, chief executive of Hewlett-Packard, may have best expressed this when he said, “*If HP knew what HP knows, we would be three times as profitable*” (Stewart, 1997).

Knowledge

Data can be defined as observations or facts without a context that gives it a broader meaning. When the context that surrounds data is retained, it becomes information. Only when information is meaningfully organized through experience, communication, or inference does it become knowledge. Alavi and Leidner (1999) propose that “*Knowledge is a justified personal belief that increases an individual's capacity to take effective action.*”

Organizational Knowledge

All knowledge acquisition takes place inside individuals (Simon, 1945), but for this individual knowledge to become “organizational knowledge,” it must be shared throughout the organization (Levitt and March, 1988; Lipshitz, *et al.*, 1996; Nonaka and Takeuchi, 1995).

Most organizations already have a basic form of knowledge base in their standard operating procedures (SOPs), company policies, transaction records, *etc*; but organizational knowledge also includes the combined experience of all of the organization's employees – the human capital of the firm (Penrose, 1959). This type of knowledge, diffused throughout the organization, is called “migratory knowledge” (Badaracco, 1991) in that it is only “on loan” to the organization as long as the individ-

ual that holds it remains an employee. It is the combination of the diffused and migratory nature of this knowledge, along with its continual creation, that makes the sharing of this knowledge both difficult and imperative. Unfortunately, much of an organization's newly created “knowledge” is never captured or shared; it never moves beyond those who actually experienced its creation. Thus, this non-collected, non-shared knowledge is continually being lost as employees simply forget their experience or leave the organization. This is the knowledge management failure that has plagued organizations in the past.

What is a Knowledge Management System?

To address the need to manage their “knowledge,” many organizations have adopted a variety of technologies under the general aegis of “knowledge management systems.” However, many concerns beset the adoption of knowledge management systems. Some see these systems as simply a “subset” of information management and “suspect that nothing more substantial than ‘terminological inflation’ is taking place” (Davenport, 1999), while others see them as the natural evolution of the earlier information management systems, but an evolution that is reaching a higher plane and that is more or less clearly delineated from their information management systems forebears. If knowledge management is that next higher plane in information technology, I believe that the adoption of knowledge management systems should result in the institutionalization of knowledge management in the organizations that adopt these systems.

Institutionalization

Its proponents present knowledge management as an innovative technique that will lead to a competitive advantage for the organizations that adopt it. If the adoption of a knowledge management system results in the development of a competitive advantage for an organization, why would any organization fail to adopt this system/technology? This question was as appropriate in the discussion of decision support systems approximately twenty years ago as it is to the discussion of knowledge management systems today. Further, the question is equally appropriate to a discussion of any new system or technology that is promoted as an innovation.

Organizations, and society as a whole, are confronted with claimed “innovations” every day, yet only a few of these “innovations” are ever widely adopted. Adoption results in the institutionalization of the innovation within the organization adopting it. Orlikowski and Robey (Orlikowski, 1992; Orlikowski and Robey, 1991) have

proposed the use of Giddens' (1976; 1979; 1982; 1984; 1993) theory of structuration in studying institutionalization.

Many researchers in the past have adopted philosophical stances that either limited them to viewing technology as an objective, external force that would have an impact on things such as organizational structure, or a more subjective view of strategic choice and social action determining technology's impact on these same issues (Orlikowski, 1992). In Giddens' theory of structuration, social reality is the aggregate of subjective human actors and of objective institutional properties. Giddens calls this the "duality of structure," and defines it with the idea that the structures (institutional properties) of social systems (organizations) are both the construction of human action and the constructors of future human action. Thus, explanations of social phenomena (e.g., organizational adoption of technological innovation) must consider both human actions and the impact of existing institutional properties, because both of these will help explain the changes to future institutional properties that will occur along with future human actions. It is Giddens' theory of structuration that defines the focus (institutionalization) of this research.

The Research Framework

I believe that the development of a successful knowledge management system, the processes by which organizations identify, capture, systematize, categorize, store, and disseminate knowledge from and to members of the organization, is the crucial factor in being a learning organization. A successful system will lead to the institutionalization of knowledge management within an organization, and the organization that institutionalizes the management of its knowledge resources is a "learning organization." Therefore, I propose a study of the effect of knowledge management system structure on the institutionalization of knowledge management within organizations.

The Research Objective

The objectives of my research are two-fold. The first is to learn more about the structure and policies governing companies' knowledge management systems, and, in particular, how these structures and policies contribute to the effectiveness of the knowledge management systems within these companies. The second is to consider how their system's structure affects the process of institutionalizing knowledge management within the organization. The research will address social, technical, and business aspects of knowledge management relative to:

- the social and technical structure of the knowledge management system,
- the policies and procedures in support of the system,
- how the system supports corporate goals,

- how individuals within the organization measure the effectiveness of the system,
- how organizations measure the effectiveness of their system, and
- the evidence of cultural change associated with the implementation of the system.

The Research Methodology

The topic of knowledge management systems is relatively new, with only a little empirical research into their application and use in organizations. I hope that in learning more about them, I can develop enough questions from which to build a program of research. Thus, this research has an exploratory nature.

Given the exploratory nature of this research, the case study method would seem to be most appropriate. The case study method is an intensive, holistic description and analysis of a single unit or a bounded system (Merriam, 1998). This method, which emphasizes the context of the research, is generally appropriate for studying areas and topics for which the variables of interest have not been clearly identified (Benbasat, *et al.*, 1987). Additionally, case research is the most common qualitative method used in information systems research (Orlikowski and Baroudi, 1991).

This research will employ a multi-unit case study research design using multiple measures within an "embedded" case design (e.g., multiple levels of analysis within each case) (Yin, 1984). My sample frame is limited (*i.e.*, to those large management consulting organizations currently operating a formal, computer-based, knowledge management system). Management consulting organizations were chosen because knowledge is clearly their crucial resource, and these organizations are acknowledged leaders in the development of knowledge management systems). I will select approximately four cases for in-depth study.

This research will be conducted through a series of semi-structured interviews with eight to fifteen individuals in each participating organization including (if possible):

- the sponsor of the knowledge management system,
- the project manager of the knowledge management system,
- personnel involved in the final review of proposals for inclusion in the corporate knowledge base,
- personnel involved in the cataloguing of new knowledge being added to the corporate knowledge base,
- personnel involved in any intermediate reviews of proposals for inclusion in the corporate knowledge base,
- personnel who have submitted proposals to the corporate knowledge base,

- personnel, who from their position could have submitted proposals to the corporate knowledge base, but have not,
- personnel who have utilized the corporate knowledge base, and
- personnel, who from their position could have utilized the corporate knowledge base, but have not.

These interviews will consist of a series of both open- and close-ended questions related to: (1) the social and technical structure of their knowledge management system, (2) the policies and procedures in support of the system, (3) how the system supports corporate goals, (4) how individuals within the organization measure the effectiveness of the system, (5) how organizations measure the effectiveness of their system, and (6) the evidence of cultural change associated with the implementation of the system. Probes into promising areas will follow the structured questions. These interviews are projected to last one-hour each. Interviews will be tape recorded and transcribed to facilitate the categorizations. Participants will also be asked to review interview transcripts to assess their accuracy. Following their review, the transcripts will be analyzed using a qualitative analysis package (NVIVO). This analysis will consist of identifying areas of commonality and dissimilarity between the interviews and how these areas support, refute, or redirect the theoretical underpinnings of the study.

Results of the Research

This research is intended to result in a series of propositions defining both the variables (both dependent and independent) that define a successful knowledge management system and the variables that define the degree of institutionalization of knowledge management within these organizations. In the second phase of this program of study (not a part of the dissertation) these variables can be operationalized into a survey instrument for a more generalized approach to the same question. Then the application of structural equation modeling analytical techniques should reduce these variables to a manageable level of dimensions explaining and predicting success in the development of a knowledge management system.

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