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APPLICABILITY OF CONTEXT-AWARE FRAMEWORK OF KNOWLEDGE MANAGEMENT IN SUB-SAHARAN AFRICA: A RESEARCH PROPOSAL

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Abstract

The existing frameworks of knowledge management do not consider the global diversity and thus, may not be appropriate for organizations in developing countries. KAFRA, a context-aware framework was developed to meet the specific needs of organizations in developing countries and possibly globally. The framework was based on the empirical study of six research organizations in Nigeria and The Gambia, and a follow-up study in two organizations in India. This paper describes a proposed study on the implementation and applicability of this framework using two different research approaches.

Keywords: KAFRA, knowledge management, sub-Saharan Africa, context-aware framework, Delphi method, action research

Introduction

The hype and fad that surrounds knowledge management is dying down and it has come to be recognized as always important to organizations (Hansen et al 1999; Zack 1999; Von Krogh et al. 1998). Knowledge management is no longer the issue of multinational companies or the international consulting firms or the organizations in the western industrialized countries alone, it has become the fabric of successful businesses and organizations, irrespective of the size and geographical location (Davenport and Grover 2001). Thus, organizations in developing countries should also begin to consider KM. Unfortunately, the only available frameworks and examples are based on organizations in Western industrialized countries (e.g., see Hedlund and Nonaka 1993). The adoption and use of such frameworks vary according to local socio-cultural and organizational contexts. Becerra-Fernandez and Sabherwal (2001) recently remarked that the majority of the tools, methodologies, and processes of KM may not be universally appropriate and suggested an approach that will consider the particular context in which the KM occurs. Earl (2001) emphasizes the point:

“Therefore there is need for models, frameworks, or methodologies that can help corporate executives both to understand the sorts of knowledge management initiatives or investments that are possible and to identify those that makes sense in their context” (Earl 2001, pg. 216)

For these reasons, the local socio-cultural, organizational, technological, and operating environmental contexts in sub-Saharan Africa were studied and the results have been used for constructing a new framework, more suitable for developing countries. Using this framework, we plan to continue to address the problem of knowledge management in organizations in developing countries. The framework will be evaluated in sub-Saharan Africa using the Delphi method and the changes that could accompany its implementation will be studied by action research (Patton 1990) in Nigeria and The Gambia. The overall objective of the study proposed here is to implement and apply the framework at an organization level in developing countries, specifically in sub-Saharan Africa. Based on the earlier study, a longitudinal study is proposed to:

- Contribute to the understanding of the KM issues in developing countries in particular and global KM in general

- Together with the management of the institutes, engage in long-term action research on developing the knowledge management practices.
- Provide a basis for organizations in developing countries for utilizing new technologies and for development of knowledge economy.

The KAFRA Framework

We designed a field study (Okunoye and Karsten 2001) and gathered data on knowledge management in six research organizations in Nigeria and The Gambia during winter 2001. The analysis of the data raised some specific issues in the African context, such as short-term planning due to the project culture, persistent under-funding, long delays in communications, or vulnerability at the face of equipment problems (Okunoye and Karsten 2002). Based on this study, the framework for sustainable KM was proposed (Okunoye 2002) and the ideas in the framework was later refined in KAFRA, a context-aware framework (Okunoye 2003). During summer 2002, a similar study in two research organizations in India was conducted. The purpose was to enrich the discussion of contextual issues in KM and to provide rich insight that could guide KM initiative in other organizations in developing countries. The preliminary findings (Okunoye et al. 2002) also confirmed the need for a context-aware framework of knowledge management.

The main assumptions in the KAFRA framework (see **Figure 1**) are that cultural and infrastructural factors in relation to other contextual issues (e.g. government, educational, political, social and economic) exert great influence on organizational variables and technology which are the main influence on KM. In KAFRA, all the organization-related influences that could enable or constrain KM were put together as *organizational variables*. *Information technology* is a separate component due to its strategic importance in supporting *the knowledge processes* of knowledge creation, storage, sharing and application. All these are directly affected by the *environmental factors* (e.g. culture and infrastructure) where the organization operates.

The organizational variables and information technology can influence each another and they are both enablers of knowledge processes. On the other hand, the kind of knowledge to be created could determine which kind of information technology to be used and which variables in the organization need to be adjusted. Effective handling of knowledge processes yields the main aim of the KM, which is improving the *knowledge resources* in which the competitive advantage and all other benefits of KM lie. Also, knowledge resources could effectively affect knowledge processes.

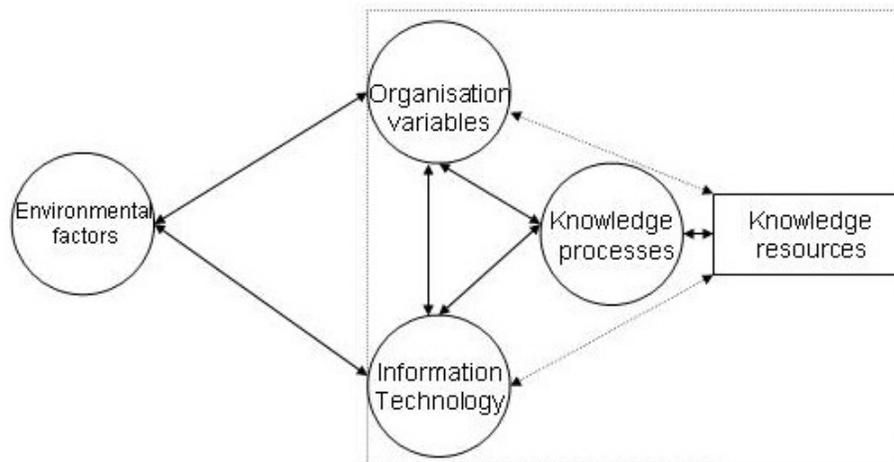


Figure 1. KAFRA: Context-Aware Framework of Knowledge Management

The double arrow that joins the organizational variables and the information technology to the operating environment shows the interdependency between the organization and the environment, ensuring that KM processes are consistent with the external environment in which the organization operates and that those activities meant to improve knowledge resources are undertaken in a coordinated manner. Each component is linked to the others in a cyclic manner, which indicates the continuous dependency and influence between them (Okunoye 2003). The framework could guide organizations in their knowledge management

initiatives. The implementation of the framework depends on the careful analysis and understanding of the issues involved in each component.

Methods

With the interaction of organization and environment (Scott 1998), the initial study revealed that approaches to KM might be different based on the environmental and organizational context. To test the applicability of the framework in different contexts, the Delphi method will be used. This applicability in African context will be experimented during action research in two research organizations. These two methods are to complement each other to ensure the appropriateness and suitability of the framework in sub-Saharan Africa and eventually in other developing countries.

Delphi Method

The Delphi method is often used as a research method for assessing a future, complex or ambiguous subject. Delphi is based on a structured process for collecting and distilling knowledge from a group of experts by means of a series of questionnaires interspersed with controlled opinion feedback (Adler and Ziglio 1996). In Delphi method, a questionnaire is sent out to pre-selected experts. The result is analyzed and the summary sent out to expert in another round until a consensus is reached. Each round incorporates the inputs of the experts anonymously and provides textual and statistical evidence to support the opinion expressed by the experts. Delphi can be slow and time-consuming due to several rounds and slow responses from the experts. There is also the problem of correct interpretation of the panel's response by the moderator. In this study, however, emphasis will be put on the explicitness of the questionnaire to reduce ambiguity.

A detailed description of the framework and the questionnaire will be sent out to a number of people asking their informed opinions on the KAFRA framework. The group of experts will be drawn from organizations in sub-Saharan Africa excluding the ones included in our earlier study. We envisage some problems here since KM is not a common issue yet in sub-Saharan Africa. We aim to give sufficient information prior to the exercise as it directly concerns knowledge management, however, careful attention will be paid to include experts that could provide independent opinions, based on their expertise and critical thinking. The Delphi method has been applied in large scale technological forecasting and corporate planning. In recent times, it has been used in almost every discipline including information systems (Galliers et al. 1994; Brancheau et al. 1996; Moores 1996; Gottschalk et al. 2000). The Delphi method has also being used to study software project risks in Nigeria (Mursu et al. 1999). Specifically, the Delphi method has been used in KM to test a framework (Holsapple and Joshi 2000) and to study the future of knowledge management (Scholl and Heisig 2002).

Action Research

Action research method was developed in the early 1950s to study social psychology (Baskerville and Wood-Harper 1996). It has been extensively used in disciplines like operation research, applied and social anthropology, organizational development and education. Action research has not been a popular research method in IS field (Orlikowski and Baroudi 1991), but it has started making an impact in the last decade (Myers and Avison 2002). In discussing domain of ideal use of action research, Baskerville and Wood-Harper (1996) conclude that action research is a valid research approach to study a new methodology or an improvement to a methodology. Implementing KAFRA framework and studying of its applications in organizations require some intervention of the researcher and action research was found appropriate. According to Hult and Lennung (1980), "action research simultaneously assists in practical problem-solving and expands scientific knowledge, as well as enhancing the competencies of the respective actors, being performed collaboratively in an immediate situation using data feedback in a cyclical process aiming at an increased understanding of a given social situation, primarily applicable for the understanding of change processes in social systems and undertaken within a mutually acceptable ethical framework".

Action researchers are often criticized for lack of impartiality, lack of discipline, confusion with consulting and the context specific nature of action research. Though, these will be carefully considered in the detailed design of the study, it has also been argued that these problems are not limited to action research only and the field researcher will undergo the recommended extensive training to minimize the problems (Baskerville and Wood-Harper 1996). For this study, two of the organizations we studied earlier will be selected and a KM initiative will be developed with them guided by KAFRA framework. The issues of concern as it relates to each component will be identified and specific attempt will be made to change some organizational

variables and implement adequate technological solutions that could assist in these processes. This only would follow identification of the kind of knowledge management activities they intend to strengthen and their goals. The state of knowledge management before and after the action research will be compared using the original knowledge management diagnostic measures (Bukowitz and Williams 1999; Okunoye and Karsten 2001) and other qualitative assessment methods, thus, the suitability of the framework can be ascertained and aspects that need amendment or are irrelevant will be unveiled.

Conclusions and Expected Results

At the end of the study, we should have implemented and assessed the KAFRA framework, enhanced know-how and transferred technology in a sustainable, participatory way. For the participating organizations, it could mean more effective and efficient ways and means for managing their knowledge. The applicability of the framework is one of the aims of the research we describe here. The research will also enhance understanding of KM generally in developing countries. A major goal is improvement of organizational efficiency and productivity, which could translate into national development at the macro level. The significance of the expected results base on The World Bank (1999) recommendation that most countries on the continent need to do much more and faster to increase their knowledge base, to invest in educating their people, and to take advantage of the new technologies for acquiring and disseminating knowledge. Countries that postpone this will fall behind those that move faster. Undesirable development can be hard to remedy.

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