

# ***EFFECTS OF KNOWLEDGE MANAGEMENT ENVIRONMENT ON INFORMATION BEHAVIORS AND INFORMATION OUTCOMES: AN EMPIRICAL STUDY***

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The main purpose of this paper is to explore the effect of knowledge management environment on information behaviors and values and information use outcomes in an insurance based large corporation. This study also attempts to find the influence of information behaviors and value on information use outcomes. A quantitative research design was employed. Data were collected through survey instrument by visiting over 400 participants comprising professional, administrative and support staff working in various zonal offices of Life Insurance Corporation. The research results indicate that the knowledge management environment is critical to both effective information use in shape of achieving performance results and influencing information behaviors and values. Moreover, information behaviors and values positively impact the information use outcomes.

**Key Words:** Knowledge management environment, information behaviors and values, information use, knowledge management.

## **İŞLETMELERDE BİLGİ YÖNETİMİ ORTAMININ, BİLGİ YÖNETİMİ İLE İLGİLİ DAVRANIŞ VE BİLGİ KULLANIMININ SONUÇLARI ÜZERİNDEKİ ETKİLERİNE YÖNELİK BİR ARAŞTIRMA**

Bu çalışmada temel amaç, bilgi yönetiminin şekillendirdiği işletme içi çevresel ortamın, bilgi yönetimi ile ilgili olarak oluşan çalışanların davranış ve değerleri ile bilgi kullanımının sonuçları üzerindeki etkilerini belirlemeye çalışmaktır. Aynı zamanda, bilgi yönetimi kökenli davranış ve değerlerin, bilgi yönetimi uygulamalarının sonuçları üzerindeki etkileri de belirlenmeye çalışılacaktır. Bu amaca yönelik olarak gerçekleştirilen araştırmada anket yöntemi kullanılmış ve Pakistan'ın büyük bir hayat sigortası işletmesinin farklı bölge müdürlüklerinde çalışan 400'den fazla yönetici ve destek personeline hazırlanan soru formu dağıtılmıştır. Araştırma sonuçlarına göre, bilgi yönetimi ortamı; hem işletmelerin performansını biçimlendiren etkin bilgi kullanımı, hem de bilgi yönetimi kaynaklı davranış ve değerler üzerindeki etkileri bakımından önemli bir değişkendir. Ayrıca bilgi kaynaklı davranış ve değerlerin de, bilgi kullanımının sonuçları üzerinde pozitif yönde bir etkisi vardır.

**Anahtar Kelimeler :** Bilgi Yönetimi Çevresi, Bilgi Yönetimi Davranış Ve Değerleri, Bilgi Kullanımı, Bilgi Yönetimi

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## 1. INTRODUCTION

An efficient and effective management of knowledge has been regarded as most powerful criterion to judge the performance and recognized as the most important asset of organizations in the current transformation of developed nations towards knowledge based economies. Business success parameters such as market share growth, financial performance, level of innovation and superior company reputation all are depends upon the maximum utilization of the intangible assets, sometimes defined as intellectual capital as it accounts for increasing proportions of the market valuations of knowledge-based enterprises which have a major competitive advantage over their competitors simply because of effective deployment and utilization of information, people and IT in their industry and globally. The capacity to fully leverage the business value of knowledge management, they have the motivation to capture not only the 25% of the business value resulting from efficient IT deployment , but also remaining 75% of the business value resulting from effective use of information and knowledge by their stakeholders (Marchand, D.A.2004, p. 4).

The effective deployment and utilization of information, people and IT depend upon information use environments, as it focuses on the user, the uses of information and the context within which users make choices about what information is useful to them. These choices are based not only on the subject, but on other elements of the knowledge

management context within which a user lives and works (Choo et al. 2006, p.492).

This research draws on existing IS and KM frameworks, models, and literature (specifically Choo et al 2006 and Detlor et al 2006) and explores the relationship between information, people and IT by analyzing the knowledge intensive organization as information use environments where knowledge management environment and information behavior and values affect the information use outcomes (Choo et al.2006, p. 492 and Detlor et al. 2006, p. 117).

Most of the new literature in knowledge management field is communicating the qualitative studies describing the theoretical constructs and variables that need empirical approach. This study adds to the body of knowledge in this area with a quantitative approach that both tests existing models and provides new insights into knowledge management strategies and how these relate to organizations' strategic orientations through effective deployment and utilization of information, people and IT.

For this research paper, we refer knowledge management as the targeted coordination of 'knowledge' as a factor of production and the management of the organizational environment to support individual knowledge transfer and the subsequent creation of collective knowledge. Knowledge management is therefore not the management of 'knowledge' but rather the management of the organization with

a particular focus on 'knowledge (Bornemann et al. 2003 p.5). It also includes a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information (Davenport, T. H., & Prusak, L.1998 p.5). Knowledge management can be in the shape of explicit knowledge (information), "know how" or implicit knowledge (can be captured and codified as information) and tacit knowledge (can not be captured and codified as information) and to see the KM as successful we should treat it as activity not as object (Al-Hawamdeh, S. 2002, <http://informationr.net/ir/8-1/paper143.html>).

## **2. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK**

To create the research model for this research paper, mostly we have followed the Choo et al 2006 and Detlor et al 2006. As a result, we have used as background the theory from the information sciences and knowledge management literatures comprised of Information Orientation (Merchand et al. 2001) and an interpretation of several theoretical models dealing with organizational information environments (Detlor et al, 2006, Detlor, 2004, Katzer & Fletcher, 1992; Rosenbaum, 1993, 1996, 1999, 2000; Davenport & Prusak, 1997, 1998; Taylor, 1986; 1991). The main motive behind using this literature is simply that the writing focuses on the user, the uses of information, and the context within which users make choices about what information is useful to them.

Additionally, these concentrate not only on the subject matter, but also on other important factors of the context within which a user of the knowledge lives and works (Choo et al. p. 492).

The following sub-sections describe this background. This is followed by a description of the paper's research model, which draws upon constructs identified in the afore-mentioned literature base and identifies specific hypotheses for investigation.

### **2.1 Information Orientation**

The researchers (Marchand, Kettinger and Rollins 2001) developed an applied research instrument to measure the information orientation and conducted an extensive study by surveying over a thousand senior managers from 98 companies in 22 countries and 25 industries, try to get the answer of the question 'How does the interaction of people, information and technology affect business performance? Results of the study showed that three information capabilities such as behaviors, information and technology lead effective use of information and knowledge (Choo et al. 2006 p. 294). The details of these are: 1) Information Management Practices (IMP) capability is the capability of a company to manage information effectively over its life cycle. This includes the ability to sense, collect, organize, process, and maintain information. 2) Information Technology Practices (ITP) capability is the capability of a company to effectively manage appropriate IT applications and infrastructure in support of operational decision-making, and communication

processes. 3) Information Behaviors & Values (IBV) capability is the capability of a company to instill and promote behaviors and values in its people for effective use of information. We use six components of Information Behaviors and Values in our conceptual study to evaluate the construct of IBV also used by Choo et al 2006. These are: 3.1) Proactiveness is the degree to which people seek and respond to information about changes in the environment, 3.2) Sharing is the degree to which people share both sensitive and non-sensitive information, 3.3) Transparency is the degree to which people trust each other enough to talk about failures, errors and mistakes, 3.4) Control is the degree to which people disclose information about business performance, 3.5) Formality is the degree to which people use and trust formal sources of information, and 3.6) Integrity is degree to which people do not manipulate information for personal gain (Ravndal, B. 2005, p. 29). Together these three capabilities (IMP, ITP & IBV) combine together to define an organization's Information Orientation Maturity that predicts business performance. According to the results of the study organization needs to be strong in all three capabilities in order to realize superior business performance (Choo et al. 2006 p. 494).

## **2.2 Organizational Information Environment**

Both Detlor et al 2006 and Choo et al 2006 have seen many similarities between the Information Orientation model and the idea of

organizational information environments. They have reviewed key works on information ecologies (Davenport & Prusak, 1997; Nardi & O'Day, 1999), information processing contexts (Huber & Daft, 1987), information use environments (Katzer & Fletcher, 1992; Rosenbaum, 1993, 1996, 1999, 2000; Taylor, 1986; 1991), knowledge management (Blair 2002, Southon et al 2002), strategic management of intellectual capital and organizational knowledge (Choo 2002), Intellectual Capital (Roos et al 1998), and strategy for managing knowledge (Hansen 1999). According to Detlor (2006) review firm's information environment includes: 1) Information culture, which refers to the degree to which information is readily shared, valued, and filtered across the company. 2) Information systems development processes (procedure), guide the firm how information systems are developed and maintained. 3) Information politics refers to the human struggle over the management of information. These factors (information culture, process and politics) together constrain and shape the degree to which people in organizations can access, create, share, find, browse, create and use information. For example limited information sharing, high degree of information overload, or the existence of strong controls over the dissemination and distribution of information in the firm, has been shown to hinder knowledge work in organizations at both personal and corporate level. After concluding this, Detlor et al 2006 posit an organization's information environment has a direct effect on

both employee and organizational information behavior (Detlor et al. 2006 p.119).

According to Choo et al. (2006) review, information environment consists of six components: 1) Information strategy is basic principles that explain intent behind the use of information and provide the linkage between information management and the ability of the organization to achieve its corporate mission and goals. 2) Information politics is the result of distribution of the power that information gives and the governance models for its management and use. Five political models from 'feudalism', where business units define their own information requirements and report limited information back to the firm, to 'federalism', where there is agreement and negotiation among business units on the use of information are recognized 3) Information behavior and culture. Three main types of information behaviors are: sharing information (making information available to others); handling information overload (making assurance that the right people identify and use the right information); and dealing with multiple meanings (creating a common understanding of concepts and terms used in an organization). 4) Information staff includes information content and information technology specialists, who design, develop, train and coordinate the creation and use of information, 5) Information processes explain how information work to be finalized in the course of determining information

requirements, capturing information, distributing information, and using information. 6) Information architecture provides a guide to the structure and location of information within the organization. It can regroup into descriptive that shows a map of the current information environment and prescriptive that presents a model of the information environment (Choo et al. p. 492).

Finally Choo et al 2006 provide that contemporary researches treat the knowledge management as a stock of intellectual capital that it uses to create economic value. This intellectual capital includes: 1) Expertise and experience of individuals, 2) the routines and processes that define the distinctive way of doing things inside the organization, and 3) knowledge of customer needs and supplier strengths. Intellectual capital further may be regrouped as 1) human capital that is derived from the competence, skills and experience of employees and 2) structural capital that comes from the procedures, routines, and relationships the organization has developed over time. Knowledge management can be differentiated as 1) explicit knowledge based on codification and 2) tacit knowledge based on personalization. Codification strategy focuses on the reuse of explicit knowledge e.g., knowledge is codified, stored and disseminated through the use of information technology, electronic document systems, and formal procedures and on the other hand, personalization strategy focuses on the sharing of tacit knowledge e.g., knowledge is shared through person-to-person interaction that takes place

in mentoring, conversations, and social networks (Choo et al. 2006, p. 494). Moreover, in tacit knowledge a person is unaware of and therefore either cannot record or articulate, or can only record or articulate indirectly using special observation or interview techniques (Bornemann et al. 2003 p.40). Greine et al. 2007 find that “an organization whose business strategy requires process efficiency should rely primarily on a codification strategy. An organization whose business strategy requires product/process innovation should rely primarily on a personalization strategy. The most successful knowledge management projects were driven by a strong business need and with the goal to add value to the organizational unit operations” (Greine et al. 2007, p. 3). Knowledge environments generate facilities and context for spontaneous knowledge sharing, creating and exploitation. Stähle and Grönroos (2000) see a modern enterprise like a hologram in which mechanical, organic and dynamic types of organizations exist simultaneously, forming different internal knowledge and operating environments. In Chang and Lee (2008) study finds that external environment and organizational culture have significant interaction effects with knowledge accumulation capability on organizational innovation (Chang, S. and Lee, M. 2008, p. 3). Hasgall and Shoham 2008 argue by referring Wood 2002 that “management and dissemination of knowledge do not only depend on technology, but also on the ability to create an inter-organizational environment that allows recognition and use of the

individual’s knowledge and distribution of the experiences and concepts that each individual created for him or herself to all employees” (Hasgall and Shoham 2008, p. 52). From this we can conclude that knowledge Management Environments of an organization has the similar to Marchand et al.’s ITP and IMP constructs [Detlor et al. 2006, p. 119]. As part of the theoretical framework of the present study, we focus on the knowledge management activities that support both strategies, as well as considering the elements that make up the broader Knowledge management environment of the organization.

### **2.3 Information Use**

Choo et al (2006) provide a detailed review of literature on information use namely by reviewing key works on information use environment (Taylor 1991), looking for information (Case 2002), theories of information Behavior (Fisher et al 2005), the knowing organization (Choo 2006), an overview of sense-making (Dervin 1983), applying social psychological theory to the problems of group work (Kraut 2003). According to this review, information behavior is a sum total of activities through which information becomes useful. The criterion for information usefulness is to be judged from subject matter, the matching of information content with a query or topic, and the requirements, norms & expectations that arise from the user’s work and organizational contexts. Information use takes place when the individual selects and processes information which leads to a change

in the individual's state of knowledge (capacity) to make sense or to take action. Consequently information use entails the selection and processing of information in order to answer a question, solve a problem, make a decision, negotiate a position, or make sense of a situation. Eight classes of information uses are: 1) Enlightenment. Information is used to build up a context or to make sense of a situation by answering questions such as: 'Are there similar situations? What are they? What is our history and experience?' 2) Problem understanding. Information is used in a more precise way than enlightenment – it is used to develop a better understanding of a particular problem. 3) Instrumental class. Information is used so that the individual recognizes what to do and how to do something. 4) Factual. Information is used to find out the facts of a phenomenon or event, to describe reality. 5) Confirmation. Information is used to verify another piece of information. 6) Projective. Information is used to predict what is likely to occur in the future. 7) Motivational. Information is used to initiate or maintain personal involvement, in order to keep moving along on a particular course of action. 8) Personal or political. Information is used to develop relationships; enhance status, reputation, personal fulfillment. Dervin put these information use as 'Got control', 'Got out of a bad situation', and 'Got connected to others' (Choo et al. 2006, p. 495).

Choo et al 2006 by referring Dervin (1983), Magil (1993), Bandura (1997) and Chiva-Gomez (2004) provide that to facilitate the

conceptual framework as information used in one class may also address the needs of other class, therefore, Taylor eight classes of information uses can be regroup in to three general categories: 1) Task performance – enlightenment (making sense of a situation); problem understanding; instrumental (knowing what to do). 2) Self-efficacy – motivational (sustaining personal involvement); personal (enhancing status, reputation, personal fulfillment). Self-efficacy can be defined as the perception or judgment of one's ability to perform a certain action successfully or to control one's circumstances and it is an important determinant of performance that operates partially independently of underlying skills. 3) Social maintenance – personal or political e.g. using information to build up relationships, to 'get connected to others' (Choo et al. 2006, p. 495).

Finally Choo et al 2006 provide that Kraut (2003) in his review of process models of group work identified three similar categories of group work outcomes: 1) Production outcomes are 'task outcomes' that emphasize efficiency and effectiveness in task performance. Besides production, groups also need to support the needs of individuals and to foster the capability to work together in a collaborative environment. 2) Individual support: group members are satisfied with their work, and there is a sense of achievement, of having an impact. 3) Group maintenance (Choo et al. p. 496).

Our present study invites participants to report their observations of information use outcomes in these three categories: 1) Task performance, 2) Self-efficacy, and 3) Social maintenance.

### **2.3 The Paper's Research Model**

From the above Literature we can find the construct of Knowledge Management Environment (KME) which according to Detlor et al 2006 is equivalent to Marchand et al.'s Information Technology Practices (ITP) & Information Management Practices (IMP) constructs, and organizational information environment which shows us the culture and dedication in an organization to implement the effective information and knowledge sharing processes, practices and technologies. The second construct is Information behaviors and values explained in information orientation and have a distinct identity from the contextual constructs of an organization's technology and information management environments. Detlor et al 2006 provide that the human action of information behavior is outside and distinct from the organizational information environment in which knowledge work is performed. According to Detlor et al. (2006), both Detlor (2004) and Marchand et al. (2001) discuss the relationship between context and behavior. On one hand, Marchand et al. provides how contextual constructs of ITP and IMP work together with IBV to facilitate

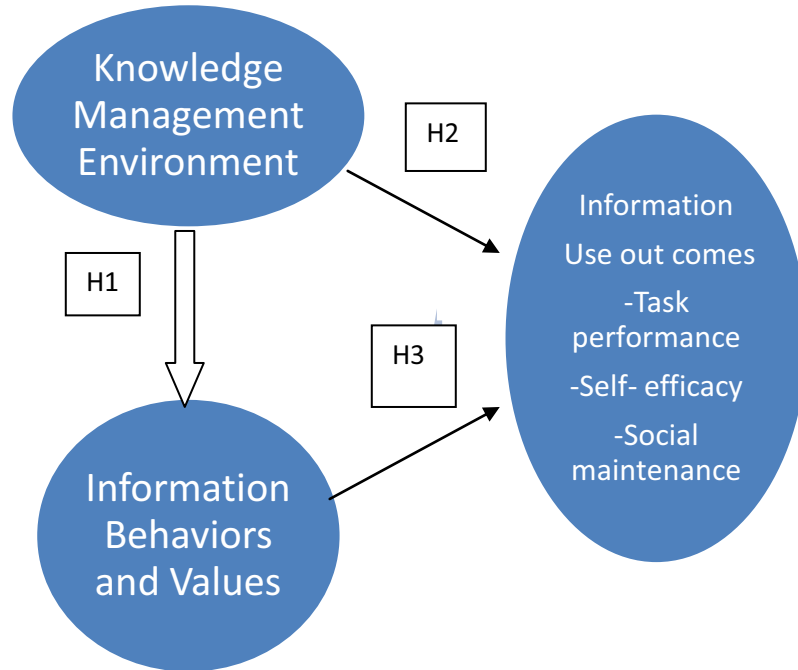
effective information use in the corporation. On the other hand, Detlor provides evidence of the strong effect of an organization's information environment on employee information behavior, and explains how this relationship influences the extent to which an organization can initiate properly to create, distribute and use knowledge across the firm (Detlor et al. 2006, p. 119). The third and final construct of our research model is information use outcomes that emerge after the interaction between knowledge management environment and information behaviors and values.

Based on this, we posit that the knowledge management environment influences both organizational information behaviors & values and information use outcomes. Additionally organizational information behaviors and values influence information use outcomes. Thus our hypotheses are: H1) A firm's knowledge management environment impacts organizational information behaviors and values. H2) A firm's knowledge management environment impacts information use outcomes. H3) A firm organizational information behaviors & values impact information use out comes.

Based on this review, this paper presents a research model that shows the interplay between the three constructs of the firm's knowledge management environment, organizational information behaviors & values, and information use out comes (see Figure 1 below).



**Figure 1:** Conceptual framework: Knowledge Management Environment, Information Behaviors & Values, and Information Use outcomes



### 3. METHOD

#### 3.1. Data Collection

For data collection, we have used questionnaire survey method as it provides us a way to reach a large cross-section of the diverse groups of people (professionals, support staff, managers) for recording their observations regarding the interaction of people, information and technology. The survey also includes a number of open ended qualitative questions that ask for more detailed commentary. Our survey questionnaire contains three main sections on Knowledge Management Environment, Information behaviors and values and Information use outcomes. Most items are presented as statements that respondents show their agreement with on a scale of 1

(strongly disagree) to 5 (strongly agree). In the first section (Knowledge Management Environment) 12 questions were asked about the information use environment such as information policy, formal procedures, culture and training. In the second section (Information Behaviors and Values) 21 questions were asked covering transparency, proactiveness, sharing, integrity, informality and control. In third section (Information Use Outcomes) 5 questions relating to task-related outcomes where information is used to solve problems or innovate; self-efficacy outcomes where employees perceive they have an impact or influence; and social maintenance outcomes have been asked. The last section deals with demographics. The

same questionnaire has been used by Choo et al 2006.

### **3.2. The Case Study Site**

Detlor et al (2006) refer Ulrich and Kerr (1995) to provide that in order to effectively respond to ever changing business conditions, service-based organizations in the banking, insurance, legal and consulting sectors need to continuously assess their culture, capability and work processes. Moreover, several researchers have published case studies of KM practices in a variety of service-based organizations in the banking, insurance, legal and consulting sectors (Detlor et al. 2006, p. 120). Considering this fact, to test our research model, a survey was run to one of the four regions of Pakistan-based largest public life Insurance Corporation. The major function of Life Insurance Corporation is to carry out life insurance business. It was established in 1972 as a result of a merger of various existing institutions dealing in life insurance business. It has a vast network of regional and zonal offices across the country. A data collection activity was conducted in February 2008 by visiting zonal offices of the region. In the survey, we approach everyone in the organization: managers, professional staff, as well as administrative and support staff. In total, 106 people answered the survey, for a response rate of 27%.

## **4. RESULTS**

The results will be presented as follows: profile of the respondents, result findings of our three main constructs of our model, 1) knowledge

management environment, 2) information behaviors and values, and 3) information use outcomes in shape of factor analysis, correlations and regression analysis.

### **4.1 Profile of the Respondents**

Demographic characteristics reveal following profile of the respondents: 1) Out of 106 98% and 2% of respondents relating to male and female respectively. 2) About 37% respondent's age (n=39) are under range of 20-35 years, 57% respondent's age (n=61) are under range of 36-50 years and rest 6% (n=6) having the age under range of 51-65 years. 3) 28% respondents are undergraduate, 38% graduate and the rest 34% having the master degree holders from the university. 4) 22% respondents are professionals and 78% respondents relating to administrative or support staff. 5) Finally 95% of the respondents having association with the organization above than 11 years of service.

### **4.2 Knowledge Management Environment**

We have used the exploratory factor analysis (principal components analysis with varimax rotation) for the questions relating to KM Environment and our cutoff point for including an item in a factor is factor loading above than 0.45 that has been shown in bold in table one. The table shows two components with eigenvalues greater than 1.0 that accounted for 57.22% of the common variance: 'Knowledge management – explicit' and 'Knowledge management – tacit' and their cronbach's are 0.87 and 0.79 respectively, which are above the

minimum acceptable range of 0.65 – 0.70 (Choo et al. 2006, p. 498). Table 2 shows the mean scores of the items

in the ‘KM-explicit’ and ‘KM – tacit’ domains.

**Table 1:** Knowledge Management Environment factor analysis

Factors and items	1	2
<i>Knowledge management – explicit (<math>\alpha = 0.87</math>)</i>		
My organization has a formal policy or strategy for managing knowledge and information.	<b>0.862</b>	0.076
My organization has formal procedures to share knowledge.	<b>0.810</b>	0.221
My organization has formal procedures to collect knowledge.	<b>0.762</b>	0.114
My organization identifies and obtains knowledge from outside sources (e.g. industry partners, governments, universities).	<b>0.583</b>	0.451
Knowledge and information in my organization is available and organized to make it easy to find what I need.	<b>0.581</b>	0.356
Information about good work practices, lessons learned, and knowledgeable persons is easy to find in my organization.	<b>0.537</b>	0.470
My organization makes use of information technology to facilitate knowledge and information sharing.	<b>0.529</b>	0.512
<i>Knowledge management – tacit (<math>\alpha = 0.79</math>)</i>		
My work unit encourages experienced workers to communicate their Knowledge to new or less experienced workers.	0.041	<b>0.795</b>
My organization encourages workers to attend training and/or education courses.	0.225	<b>0.714</b>
My organization has formal mentoring programs and/or apprenticeships.	0.293	<b>0.711</b>
My work unit has a culture intended to promote knowledge and information sharing.	0.268	<b>0.591</b>
Eigenvalues	<b>5.437</b>	1.430
Cumulative percentage of variance	<b>45.305</b>	57.223

**Table 2:** Knowledge Management Environment descriptive statistics

	N	Mean	SD
<i>Knowledge management – explicit (α = 0.87)</i>		3.93	1.069
My organization has a formal policy or strategy for managing knowledge and information.	106	3.97	1.150
My organization has formal procedures to share knowledge.	106	4.05	1.133
My organization has formal procedures to collect knowledge.	106	4.12	1.057
My organization identifies and obtains knowledge from outside sources (e.g. industry partners, governments, universities).	106	3.64	1.164
Knowledge and information in my organization is available and organized to make it easy to find what I need	106	3.99	1.009
Information about good work practices, lessons learned, and knowledgeable persons is easy to find in my organization.	106	3.85	0.974
My organization makes use of information technology to facilitate knowledge and information sharing.	106	3.86	0.999
<i>Knowledge management – tacit (α = 0.79)</i>		3.82	1.045
My work unit encourages experienced workers to communicate their Knowledge to new or less experienced workers.	106	3.85	1.085
My organization encourages workers to attend training and/or education courses.	106	4.00	1.005
My organization has formal mentoring programs and/or apprenticeships.	106	3.72	1.040
My work unit has a culture intended to promote knowledge and information sharing.	106	3.71	1.051

Respondents showed their agreement with given statements about knowledge management environment in the corporation, using a scale with anchor points of (1) strongly disagree to (5) strongly agree. The means score of KM-Explicit and KM-Tacit show that respondents agreed quite strongly with all the statements but KM-Explicit means scores are larger than means scores of KM-Tacit. These results showed that

respondents agreed that the organization has formal procedure to collect, share knowledge and have formal policy or strategy for managing knowledge and information (mean score=4.12, 4,05 and 3.97 respectively). Moreover, the respondents also agreed that organization encourages workers to attend training and/or education courses and their work unit encourages experienced workers to

communicate their knowledge to new or less experienced workers with mean score 4.00 and 3.85 respectively.

### **4.3 Information Behaviors and Values**

We have used the factor analysis (principal components analysis with varimax rotation) for the information behaviors and values area and our cutoff point for including an item in a factor is factor loading above than 0.45 that has been shown in bold in table three. The results show six components with eigenvalues greater than 1.0 and this together account for 66% of the common variance. Total six factors such as transparency, proactiveness, integrity, transparency, informality and sharing proposed by the Information Orientation study were extracted. The formality factor – the willingness to trust and use formal sources – was recorded as informality factor – the willingness to trust and use informal sources (Choo et al. 2006, p. 501). Table 4 shows the mean scores of respondents who indicated their agreement with given statements about their information behaviors and values on a scale from (1) strongly disagree to (5) strongly agree. The scores indicate between agreement and strong agreement with most items on control, sharing, proactiveness, and informality such as: 1) my knowledge of organizational performance influences my work (mean=4.25). 2) I often exchange information with the people with whom I work regularly in my organization (mean= 4.15). 3) Information is essential to organizational performance (mean=

4.16). 4) Information in my organization is distributed on a ‘need to know’ basis (mean=4.02). 5) In my work unit, I am a person that people come to often for information (mean=4.09). 6) I often exchange information with people outside of my regular work unit but within my organization (mean=4.05), 6) I use information to create or enhance my organization’s products, services, and processes (mean=4.05). 7) I use informal information sources to verify and improve the quality of formal information sources (mean=4.08). 8) The people I work with regularly share information on errors or failures openly (mean=3.85). On the other hand, mean scores relating to integrity factor are moderate that is from 3.38 to 3.22 and these items are reverse-coded, therefore all these should be understood reverse of its wording..

### **4.5. Information Use Outcomes**

In spite of the fact that information use outcome questions consisted of only five items, to validate and development of scale, we have conducted the factor analysis.. Principal component analysis extracted only one factor with eigenvalue greater than 1.0, and this factor accounted for 54.80.1% of the common variance between items, with  $\alpha = 0.784$  (Table 5). Table 6 shows the mean scores of respondents who indicated their agreement with given statements about information use outcomes on a scale where 1=Strongly Disagree, 2= Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree. The scores indicate agreement (means greater than 4.0) with all the statements on being able to solve

problems (task performance), the work benefiting the organization (self-

efficacy), and sharing information (social maintenance).

**Table 3** :Information behaviors and values factor analysis

Factors and items	1	2	3	4	5	6
<i>Integrity (<math>\alpha = 0.84</math>) (reverse coded)</i>						
Among the people I work with regularly, it is normal to leverage information for personal advantage.	<b>0.840</b>	0.059	0.165	-0.069	0.161	0.048
Among the people I work with regularly, it is normal for individuals to keep information to themselves.	<b>0.823</b>	-0.922	0.029	0.154	0.080	0.162
Among the people I work with regularly, it is common to distribute information to justify decisions already made	<b>0.821</b>	0.108	0.082	0.182	-0.134	0.188
Employees know what to do but not the ultimate goal of their activity.	<b>0.742</b>	0.128	0.025	0.189	-0.047	0.111
<i>Sharing – external (<math>\alpha = 0.63</math>); Sharing – internal and external (<math>\alpha = 0.76</math>)</i>						
I often exchange information with citizens, customers, or clients outside my organization.	-0.038	<b>0.707</b>	0.266	0.062	0.156	0.170
I often exchange information with partner organizations.	0.080	<b>0.556</b>	0.326	0.045	-0.040	0.101
<i>Sharing – internal (<math>\alpha = 0.72</math>)</i>						
In my work unit, I am a person that people come to often for information.	0.017	<b>0.795</b>	-0.045	0.114	0.067	0.143
I often exchange information with people outside of my regular work unit but within my organization.	-0.022	<b>0.556</b>	0.166	0.208	0.507	0.009
I often exchange information with the people with whom I work regularly.	0.090	<b>0.481</b>	0.213	-0.169	0.526	0.009
<i>Proactiveness (<math>\alpha = 0.78</math>)</i>						
I use information to respond to changes and developments going on outside my organization.	0.068	0.212	<b>0.825</b>	0.167	0.023	0.098
I actively seek out relevant information on changes and trends going on outside my organization.	0.205	0.121	<b>0.779</b>	0.057	0.239	0.028
I use information to create or enhance my organization’s products, services, and processes	-0.023	0.320	<b>0.627</b>	0.263	0.058	0.226
<i>Informality(<math>\alpha = 0.77</math>)</i>						
I use informal information sources (e.g. colleagues) extensively even though formal sources (e.g. memos, reports) exist and are credible.	0.250	0.170	0.066	<b>0.808</b>	0.124	-0.050

I use informal information sources (e.g. colleagues) to verify and improve the quality of formal information sources (e.g. memos, reports).	0.070	-0.090	0.323	<b>0.794</b>	0.080	0.047
I trust informal information sources (e.g. colleagues) more than I trust formal sources (e.g. memos, reports).	0.136	0.295	0.049	<b>0.690</b>	0.078	0.247
<i>Transparency (<math>\alpha = 0.68</math>)</i>						
Managers and supervisors of my work unit encourage openness.	0.026	-0.171	-0.037	0.099	<b>0.781</b>	0.226
The people I work with regularly share information on errors or failures openly.	0.067	0.092	0.136	0.036	<b>0.759</b>	-0.035
The people I work with regularly use information on failures or errors to address problems constructively.	-0.070	0.232	-0.017	0.175	<b>0.598</b>	0.158
<i>Control (<math>\alpha = 0.67</math>)</i>						
In my organization, information is essential to organizational performance.	-0.057	0.065	0.086	0.134	0.203	<b>0.800</b>
My knowledge of organizational performance influences my work.	0.192	0.140	0.190	0.063	0.065	<b>0.708</b>
Information in my organization is distributed on a 'need to know' basis.	0.126	0.409	0.028	-0.002	0.015	<b>0.594</b>
Eigenvalues	5.675	2.758	1.759	1.694	1.385	1.273
Cumulative percentage of variance	25.80	38.33	46.32	54.02	60.32	66.10

**Table 4** :Information behaviors and values descriptive statistics

Items	N	Mean	SD
<i>Integrity</i>			
Among the people I work with regularly, it is normal to leverage information for personal advantage.	106	3.38	1.158
Among the people I work with regularly, it is normal for individuals to keep information to themselves.	106	3.22	1.203
Among the people I work with regularly, it is common to distribute information to justify decisions already made	106	3.38	1.158
Employees know what to do but not the ultimate goal of their activity.	106	3.30	1.274
<i>Sharing</i>			
I often exchange information with citizens, customers, or clients outside my organization.	106	4.02	0.816
I often exchange information with partner organizations.	106	3.84	0.863
In my work unit, I am a person that people come to often for information.	106	4.09	0.700
I often exchange information with people outside of my regular work unit	106	4.05	0.844

but within my organization.			
I often exchange information with the people with whom I work regularly.	106	4.15	0.673
<i>Proactiveness</i>			
I use information to respond to changes and developments going on outside my organization.	106	3.77	0.969
I actively seek out relevant information on changes and trends going on outside my organization.	106	3.71	0.905
I use information to create or enhance my organization's products, services, and processes	106	4.05	0.844
<i>Informality</i>			
I use informal information sources (e.g. colleagues) extensively even though formal sources (e.g. memos, reports) exist and are credible.	106	3.92	0.906
I use informal information sources (e.g. colleagues) to verify and improve the quality of formal information sources (e.g. memos, reports).	106	4.08	0.813
I trust informal information sources (e.g. colleagues) more than I trust formal sources (e.g. memos, reports).	106	3.77	0.998
<i>Transparency</i>			
Managers and supervisors of my work unit encourage openness.	106	3.79	1.913
The people I work with regularly share information on errors or failures openly.	106	3.85	0.871
The people I work with regularly use information on failures or errors to address problems constructively.	106	3.88	0.801
<i>Control</i>			
In my organization, information is essential to organizational performance.	106	4.16	0.830
My knowledge of organizational performance influences my work.	106	4.25	0.791
Information in my organization is distributed on a 'need to know' basis.	106	4.02	0.926

**Table 5 :**Information use outcomes factor analysis

Items ( $\alpha = 0.784$ )	Principal component analysis extracts only one component with eigenvalue >1.0 (eigenvalue=2.740; 54.80% of common variance)
I can quickly recognize the complexities in a situation and find a way of solving problems.	
My work tasks demand new, creative ideas and solutions.	
My work benefits my organization.	
I have influence over what happens within my work unit.	
Sharing information is critical to my being able to do my job.	



**Table 6:** Information use outcomes descriptive statistics

Items	N	Mean	SD
I can quickly recognize the complexities in a situation and find a way of solving problems.	106	4.09	0.750
My work tasks demand new, creative ideas and solutions.	106	4.07	0.721
My work benefits my organization.	106	4.30	0.588
I have influence over what happens within my work unit.	106	4.14	0.696
Sharing information is critical to my being able to do my job.	106	4.24	0.594

#### **4.5 Multivariate Analysis**

By following the Choo et al 2006, to produce an aggregate score for information use outcome, item scores pertaining to the information use factor (Table 7) were summed. In the same way, to produce aggregate scores for each of the six information behaviors and values (Transparency, Sharing, Proactiveness, integrity, informality and control), item scores pertaining to each factor were summed. Similarly, aggregate scores for KM-explicit and KM-tacit were formed by adding their respective item scores. As pointed out in the conceptual framework, we looked for relationships between the variables of Knowledge Management Environment, Information Behaviors and Values, and Information Use Outcomes. Table 8 shows the positive correlations between these variables. Information Use Outcomes is

significantly correlated with five out of six components of Information Behavior and Values, notably correlation with control is 40% and the correlation of remaining items ranging from 23% to 30%. Within the domain of KME, KM- Explicit and KM- Tacit are also strongly correlated with information use outcomes e.g., 37% and 26% respectively. As we have also stated in our first hypothesis that a firm's knowledge management environment impacts organizational information management behaviors. Our multivariate analysis in table 7 shows that KM-explicit has significant correlation with all the components of information behavior and values. On the other hand, KM-tacit has significant correlation with four out of six components (sharing, informality, transparency and integrity) of information behaviors and values.

**Table 7 :**Correlations between information use outcomes, information behaviors and values, and KM variables

	IUO	Sharing	Transpare ncy	Pro activeness	Informality	Integrity	Control	KM- Tacit	KM- Explicit
IUO	<b>1</b>	0.258**	0.300**	0.280**	0.229*	0.098	0.400**	0.255**	0.365**
Sharing	0.258**	<b>1</b>	0.397**	0.180	0.315**	0.276**	0.192*	0.977**	0.595**
Transparency	0.300**	0.397**	<b>1</b>	0.195*	0.253**	0.063	0.300**	0.393**	0.359**
Proactiveness	0.280**	0.180	0.195*	<b>1</b>	0.477**	0.226*	0.457**	0.146	0.353**
Informality	0.229*	0.315**	0.253**	0.477**	<b>1</b>	.354**	0.502**	0.278**	0.437**
Integrity	0.098	0.276**	0.63	0.226*	.354**	<b>1</b>	0.274**	0.286**	0.250**
Control	0.400**	0.192*	0.300**	0.457**	0.502**	0.274**	<b>1</b>	0.164	0.334**
KM-Tacit	0.255**	0.977**	0.393**	0.146	0.278**	0.286**	0.164	<b>1</b>	0.572**
KM-Explicit	0.365**	0.595**	0.359**	0.353**	.437**	0.250**	0.334**	0.572**	<b>1</b>

\*\*Correlation is significant at the 0.01 level (two-tailed).

\*Correlation is significant at the 0.05 level (two-tailed).

#### 4.6 Regression Analysis

In order to study the effect of each variable while controlling for the effect of the others, multiple regression of information behaviors and values on KM-Explicit and KM-Tacit was carried out. Table 8 reveals the results. The model's adjusted  $R^2$  is 0.44 and the  $F$  value for the model  $R^2$  is significant at  $< 0.01$ . The standardized regression coefficients of KM-Explicit and KM-Tacit are significant at  $< 0.05$  with  $std \beta = 0.385$  and  $0.376 < 0.01$  respectively. Table 9 shows a separate multiple regressions of information use outcomes on the two KM-Explicit and KM-tacit. The model's adjusted  $R^2$  is 0.12 and the  $F$  value for the model  $R^2$  is significant at  $< 0.01$ . The only standardized regression coefficients of KM-Explicit is significant at  $< 0.05$

with  $std \beta = 0.327$  and standardized regression coefficients of KM-Tacit is not significant with  $std \beta = 0.068 > 0.05$ . Table 10 shows a separate regression of information use outcomes on Information Behaviors and Values. The model's adjusted  $R^2$  is 0.14 and the  $F$  value for the model  $R^2$  is significant at  $< 0.01$ . The standardized regression coefficients of Information Behaviors and Values is significant ( $std \beta = 0.386 < 0.00$ ).

Table 11 shows a separate multiple regressions that includes KM-Explicit, KM-Tacit along with all the factors of Information Behaviors and Values (control, integrity, transparency, sharing, proactiveness and informality): the  $std \beta$  of neither of these variables except control is statistically significant.

**Table 8:**Information behavior and values regression model 1

<b>Dependent variable</b>	<b>Independent variables</b>	<b>Std <math>\beta</math></b>	<b>Significance</b>	<b>Model Adj. R2</b>	<b>F</b>	<b>Significance</b>
Information Behaviors & Values	KM-Explicit	0.385	0.000	0.444	42.863	0.000
	KM-Tacit	0.376	0.000			

**Table 9:** Information use outcomes regression model 2

<b>Dependent variable</b>	<b>Independent variables</b>	<b>Std <math>\beta</math></b>	<b>Significance</b>	<b>Model Adj. R2</b>	<b>F</b>	<b>Significance</b>
Information Use outcomes	KM-Explicit	0.327	0.004	0.120	8.151	0.001
	KM-Tacit	0.068	0.545			

**Table 10:**Information use outcomes regression model 3

<b>Dependent variable</b>	<b>Independent variables</b>	<b>Std <math>\beta</math></b>	<b>Significance</b>	<b>Model Adj. R2</b>	<b>F</b>	<b>Significance</b>
Information Use outcomes	IB&V	0.386	0.000	0.141	18.181	0.000

**Table 11:**Information use outcomes regression model 4

<b>Dependent variable</b>	<b>Independent variables</b>	<b>Std <math>\beta</math></b>	<b>Significance</b>	<b>Model Adj. R2</b>	<b>F</b>	<b>Significance</b>
Information Use outcomes	KM-Explicit	0.208	0.083	0.188	4.041	0.000
	KM-Tacit	0.274	0.521			
	Control	0.304	0.007			
	Integrity	-0.057	0.561			
	Transparency	0.117	0.250			
	Sharing	-0.215	0.618			
	Proactiveness	0.093	0.383			
	informality	-0.077	0.505			

#### 4.7 Summary of Results

We may sum up the results of the study in terms of information use, information behaviors & values, and knowledge management as follows. Employees of the firm believe that their organization has formal procedures to collect & share knowledge and encourages workers to attend training and/or education courses (table 2). They often exchange information with the people with whom they work regularly, they can use information to create or enhance their organization's products, services, and processes, and they can use information effectively to solve work problems, information is essential to organizational performance and processes and their knowledge of organizational performance influences their work (table 4). These perceptions are ingrained in knowledge management environment and information behaviors and values sharing by majority of the respondents of the corporation (Table 2&4). These two constructs, 1) KM-Explicit and 2) KM-Tacit together account for a significant proportion (44% & 12%) of the variance in information behaviors and values and in information use outcomes respectively (Table 8 & 9). As a whole information behaviors and values has a significant effect on information use outcomes (Table 10) but when included in multiple regressions on information use outcomes, the coefficients of either of the components of IB&V except control is not statistically significant.

#### Discussion and Conclusion

To prove that strong interaction of people, information and technology can positively impact the information use outcomes, in this paper; we have examined and discussed the dual effects of knowledge management environment on information behavior & values and information use outcomes in large insurance based corporation. Moreover, we have also investigated the consequences of information behavior and values on information outcomes. To prove that we have proposed and confirmed a research model the constructs of which derived from earlier research (Detlor et al 2006, Choo et al 2006) based on information orientation and the organizational information environment models (Marchand et al 2001, Davenport 1997 and Taylor 1991& 1986). In addition to show the result of information behavior & values on information use outcomes, the results of our survey illustrate that both information behavior & values and information use outcomes are influenced by the organizational knowledge management environment comprising the practices, policies and processes institutionalized and the technologies implemented for KM initiatives. Within the context of knowledge management environment, our study proposes that both KM-explicit and KM-tacit have a significantly correlated with the constructs of information behavior and values such as sharing, informality, transparency, integrity but as well as constructs of proactiveness and control are concerned, these are significantly correlated with KM explicit and not

significantly correlated with KM tacit. In the same pattern, our study reveals that KM explicit and KM tacit along with all the constructs of information behavior and values have significantly correlated with information outcomes (table 7). Regression analysis of our study (table 8) also authenticate our first hypothesis that a firm's knowledge management environment impacts organizational information management behaviors by showing the statistically significant result of 44% of the variance in information behavior and values are being accounted by the KM-explicit and KM-tacit . In the same way in subsequent regression analysis (table 9&10) also validate our other hypothesizes by showing the statistically significant result of KM explicit and information behavior and values on information use outcomes. This mean that the organization has a capability to manage information effectively by proper sensing, collecting, organizing, processing and maintaining over its life cycle along with effectively manage appropriate IT applications and infrastructure in support of its operational decision making, and communication processes. This enhanced organizational knowledge environment impacts an organizational capability to instill and promote behaviors and values such as proactiveness, transparency, integrity, sharing, and control in its people for effective use of information. However, in table 11, when we include the factors of information values and behaviors such as sharing, proactiveness, informality, control,

transparency and integrity along with factors of KM environment such as KM-explicit and KM-tacit in our regression analysis, it shows that only KM-explicit and control having statistically significant impact on information use outcomes. Keeping in view this fact, we can conclude that in our study, corporation's KME impact both on information values & behaviors and information use outcomes but as well as the impact of information values & behavior on information use outcomes is concerned, although as a whole it has statistically significant effect but individually in shape of factors such as informality, transparency, proactiveness, sharing, integrity, it does not have statistically strong impact on information use outcomes. It is important to know the limitations of the present research. We studied only one corporation, and it is not clear to what extent the findings may be generalized to others organization dealing in life insurance. Another limitation is that the survey asked employees to report their observations of information behaviors and practices. Moreover, reported observations may not be the same as actual behaviors. In terms of contribution to theory, this study reinforces the work of Detlor et al 2006, Choo et al 2006 Taylor 1986, 1996, Davenport 1997 and Marchand et al 2001. Specifically our study shows that both KM- Explicit and KM-Tacit have statistically significant impact on information behaviors and values of the organization. As well as the effects on information use outcomes are concerned, our study report that KM-Explicit has major

impact on information use outcomes and as a whole Information behaviors and values has an impact on information use outcomes which reinforce our conceptual model that along with the impact of IB&V on information use outcomes, knowledge management environment impact both organizational information behaviors & values and information use outcomes.

### References

- AL-HAWAMDEH, S. (2002). Knowledge management: Rethinking information management and facing the challenge of managing tacit knowledge. *Information Research*, 8(1), retrieved from <http://InformationR.net/ir/8-1/paper143.html>
- BLAIR, D. C. (2002), "Knowledge management: Hype, hope, or help?" *Journal of the American Society for Information Science and Technology*, 53(12), 1019-1028.
- BORNEMANN, M., Graggobber, M., Hartlieb, E., Humpl, B., Koronakis, P., Primus, A., and Ritsch, K. (2003), "An Illustrated guide to Knowledge Management" Wissenmanagement Forum, Graz, Austria
- BANDURA, A. (1997), "Self Efficacy: The Exercise of Control" Freeman, New York
- CASE, D.O. (2002), "Looking For Information: a Survey of Research on Information Seeking, Needs, and Behavior" Academic Press, New York, 2002).
- CHANG, S. and Lee, M. (2008), "The linkage between knowledge accumulation capability and organizational innovation" *journal knowledge management* VOL. 12 NO. 1 2008, pp. 3-20
- CHOO, C.W.; Furness, C.; Paquette, S.; van den Berg, H.; Detlor, B.; Bergeron, P.; Heaton, L. (2006), "Working with information: information management and culture in a professional services organization" *Journal of Information Science*, 32 (6), 491-510.
- CHOO, C.W. and Bontis, N. (eds), "The Strategic Management of Intellectual Capital and Organizational Knowledge" (Oxford University Press, New York, 2002).
- CHOO, C. W. (2006), "The Knowing Organization: How Organizations Use Information to Construct Meaning, Create Knowledge, and Make Decisions" Oxford University Press, New York, 2006.
- DERVIN, B. (1983), "An overview of sense-making: concepts, methods, and results to date" (Paper read at the International Communication Association Annual Meeting, May 1983, at Dallas, TX).
- DETLOR, B., Ruhi, U., Turel, O., Bergeron, P., Choo, C.W., Heaton, L. & Paquette, S. (2006), "The Effect of Knowledge Management Context on Knowledge Management Practices: An Empirical Investigation" *The Electronic Journal of Knowledge Management* Volume 4 Issue 2, pp 117-128.
- DETLOR, B. (2004), "Towards knowledge portals: From human issues to intelligent agents" Dordrecht, The Netherlands: Kluwer Academic Publishers.

- DAVENPORT, T. H., & Prusak, L. (1998). *How Organizations Manage What They Know*. Boston, MA: Harvard Business School Press.
- DAVENPORT, T. H., & Prusak, L. (1997), "Information Ecology: Mastering the Information and Knowledge Environment" New York, NY: Oxford University Press.
- FISHER, K.E., Erdelez, S., and McKechnie (eds), L. (2005), "*Theories of Information Behavior*" Information Today, Medford, NJ,
- GREINER, M. E., Hmann, T.B. and Krcmar, H. (2007), "A strategy for knowledge management" *Journal of Knowledge Management* VOL. 11 NO. 6 2007, pp. 3-15,
- HUBER, G. P., & Daft, R. L. (1987), "The information environments of organizations" In F. Jablin & L. L. Putnam (Eds.), *Handbook of organizational communications* (pp. 130-164). Newbury Park, CA: Sage Publications.
- HANSEN, M.T., Nitin. N and Tierney, T. (1999), "What's your strategy for managing knowledge?" *Harvard Business Review* 77(2) (1999) 106–16.
- HASGALL, A. and Shoham, S. (2008), "Knowledge processes: from managing people to managing processes" *JOURNAL OF KNOWLEDGE MANAGEMENT* VOL. 12 NO. 1 2008, pp. 51-62,
- [20] J. Roos, G. Roos and N.C. Dragonetti, *Intellectual Capital: Navigating in the New Business Landscape* (New York University Press, New York, 1998).
- KATZER, J., & Fletcher, P. T. (1992), "The information environment of managers" In M. E. Williams (Ed.), *Annual Review of Information Science and Technology (ARIST)* (Vol. 27, pp. 227-263). Medford, New Jersey: Learned Information, Inc.
- KRAUT, R. E., (2003), "Applying social psychological theory to the problems of group work. In: J.M. Carroll (ed.), *HCI Models, Theories, and Frameworks: Toward a Multidisciplinary Science*", Morgan Kaufmann, San Francisco.
- MARCHAND, D.A (2004), "Reaping the business value of IT: Focus on usage, not just deployment, to optimize payback perspective for managers" *IMD No. 14* Lausanne, Switzerland
- MARCHAND, D.A. (2004), "Information Strategy as a key success factor for enterprises and universities" 7<sup>th</sup> International Bielefeld Conference, Germany
- MARCHAND, D., Kettinger, W., & Rollins, J. (2001a), "Information orientation: The link to business performance. New York, NY: Oxford University Press
- MAGIL, F. N. (ed.) (1993), "Survey of Social Science" Salem Press, Englewood Cliffs, NJ, [Psychology Series].
- NARDI, B. A., & O'Day, V. L. (1999), "Information Ecologies: Using Technology with Heart" Cambridge, MA: MIT Press
- RAVNDAL, B. (2005), "ICT for SME's Survey and Results" University of Stavanger retrieved from

[http://ictsmes.rkk.no/results/bpc\\_survey\\_results.ppt](http://ictsmes.rkk.no/results/bpc_survey_results.ppt)

ROSENBAUM, H. (1993), “Information use environments and structuration: Towards an integration of Taylor and Giddens” In S. Bonzi (Ed.), Proceedings of the 56th Annual Meeting of the American Society for Information Science, Columbus, OH (Vol. 30, pp. 235-245). Medford, NJ: Learned Information.

ROSENBAUM, H. (1996), “Managers and information in organizations: Towards a structural concept of the information use environment of managers” Unpublished Ph.D. dissertation, Syracuse University, Syracuse, New York.

ROSENBAUM, H. (1999), “Towards a theory of the digital information environment” In L. Woods (Ed.), Proceedings of the 62nd Annual Meeting of the American Society for Information Science (Vol. 36, pp. 705-712).

ROSENBAUM, H. (2000), “The information environment of electronic commerce: Information imperatives of the firm” *Journal of Information Science*, 26(3), 161-171.

SOUTHON, F.C.G., Todd, R.J. and Seneque, M. (2002), “Knowledge Management in Three Organizations: An Exploratory Study”, *Journal of the American Society for Information Science and Technology*, Vol. 12 no.53, October, pp. 1047-1059.

STÅHLE, P., Grönroos, M. (2000), “Dynamic Intellectual Capital. Knowledge management in theory and practice” Vantaa: WSOY

TAYLOR, R. S. (1986), “Value-added processes in information systems” Norwood, New Jersey: Ablex Publishing.

TAYLOR, R. S. (1991), “Information use environments” In B. Dervin & M. J. Voigt (Eds.), *Progress in Communication Sciences* (Vol. 10, pp. 217-255). Norwood, New Jersey: Ablex Publishing.

ULRICH, D., & Kerr, S. (1995), “Creating the Boundaryless Organization: The Radical Reconstruction of Organization” *Planning Review*, 41-45.

WOOD, M. (2002), “Mind the gap? A processional reconsideration of organizational knowledge” *Knowledge Organization*, Vol. 19 No.1, pp.151-71.