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A study on the multidimensional information management capability of knowledge workers

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Abstract

Purpose – Drawing upon the extant literature from information systems (IS), information science, psychology, marketing, management, and IT training, the purpose of this paper is to propose information management capability (IMC) construct and its sub-dimensions.

Design/methodology/approach – New instruments were developed and validated to measure the proposed IMC constructs. The proposed model was empirically tested using the data collected from 120 knowledge workers using SPSS and partial least square.

Findings – This research proposes and confirms that IMC has formative sub-dimensions such as sensing, collecting, organizing, processing, and maintaining.

Originality/value – The study findings provide important insights on enhancing knowledge workers' information management practices and subsequent knowledge management practices. The new instruments can be used as diagnostic tools for knowledge workers' recruiting, ongoing assessment, and training.

Keywords PLS, Survey, Information management, Knowledge management, Questionnaire, Information processing

Paper type Conceptual paper

1. Introduction

Knowledge management (KM) starts from the effectiveness of personal information management of knowledge workers in an organization (Grant, 1996a, b; Tsoukas, 1996). The synergetic process of managing personalized information related to facts, procedures, concepts, interpretations, ideas, observations, and judgment, among individual, groups, and inter-groups in an organization is known as KM (Alavi and Leidner, 2001). The knowledge worker brings in new knowledge from the outside, translates this to useful information, and ultimately advances organizational performance in the KM processes. Research on identifying and leveraging the collective knowledge in an organization to help the organization to compete (von Krogh, 1998) has made significant efforts to explain the relationships between various KM organizational interventions and performance (Sambamurthy and Subramani, 2005). However, there is no specific information management capability (IMC) constructs for knowledge worker.

While the evidence mounts that we must improve the information management effectiveness of employees, it could be argued that a disproportionate amount of information systems (IS) scholarly energy has been directed at identifying salient characteristics of IT rather than focussing on understanding the information management aspects of knowledge workers. Supporters of this argument contend that technology is only a tool designed to support the management of information while knowledge workers are the ultimate agents who put information to use (Ragowsky *et al.*, 2008; George *et al.*, 2008; Mithas and Krishnan, 2009; Mithas *et al.*, 2011; Hesamamiri *et al.*, 2015; van Deventer *et al.*, 2015).

People who are willing to use more formal patterns of information communication are likely to achieve better efficiency in operations and process management

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(Yigitbasioglu and Velcu, 2012). A recent model of KM motivation focussed on knowledge sharing (Gagne, 2009) includes several motivation types such as engaging in an activity voluntarily (autonomous) or due to external or internal pressures (controlled), and argues that including psychological factors that address individuals' needs for relatedness, competency and autonomy are also important. For example, based on Gagne's (2009) proposals, sharing knowledge may create a sense of self-worth and feelings of value and connections to others. A person must have the ability to properly process the information. Corroborating this perspective, Hwang *et al.* (2010) provides a detailed literature review of the relationship between the motivation and capability aspects of personal information use and their potential impact on performance. Hwang *et al.* (2010) argue that the previous information behavior and management literature, such as user competence (Marcolin *et al.*, 2000), did not completely show the relationship between information management behavior and job performance.

This paper proposes that IMC, a person's perceived evaluation of his or her ability to manage information effectively over the information life cycle, is composed of sub-dimensions that can be measured by survey. The objective of this research is to develop and perform an initial test of the IMC of a knowledge worker.

2. Literature review

Knowledge workers are the ultimate agents who put information to use (Orna, 1996). Janz and Prasarnphanich (2003) clarified the relationships among organizational climate, the level of cooperative learning that takes place between knowledge workers, and the resulting level of knowledge created by team performance and individual satisfaction levels. The definitions of data, information, and knowledge have been suggested and debated by researchers in many fields, such as IS, strategy, and communication. Data are raw facts about events; information is the data that are processed (e.g. classified, summarized, and transferred) to add meaning and value within certain context (Grover and Davenport, 2001; Martz and Shepherd, 2003). Knowledge has been argued based on different point of views (e.g. Tuomi, 1999; Langefors, 1973), but this paper adopts the definition of knowledge as "justified belief", and recognizes it as a primary strategic resource which can be transferred, recombined, and used to create value in organizations (Leonard-Barton, 1992; Nonaka, 1994; Kogut and Zander, 1992; Grant, 1996a). Saberwal and Becerra-Fernandez (2003) proved that internalization and externalization impact perceived effectiveness of individual-level KM. Their results also supported the expected upward impact in perceived effectiveness of KM, from individual to group level, as well as from group to organizational level. Ko *et al.* (2005) also posit that knowledge transfer is influenced by knowledge-related, motivational, and communication-related factors.

Substantial research has been dedicated to identifying different types of abilities (e.g. Ackerman *et al.*, 1995; Kanfer and Ackerman, 1989). The determinants of this ability encompass the individual's repertoire of knowledge and facility with "acquiring, storing in memory, retrieving, combining, comparing, and using in new contexts information and conceptual skills" (Humphrey, 1979). Attentional capacity has been suggested as the comprehensive mechanism for cognitive ability in the human information processing behavior (Kanfer and Ackerman, 1989; Ackerman, 1986; Anderson, 1982; Kyllonen and Christal, 1990). Attentional capacity is the capability aspect of individual's cognitive resources whereas attentional effort is the motivation aspect (Kanfer and Ackerman, 1989).

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An individual difference in cognitive capacity was captured by the single factor underlying scores on tests that measure a broad array of cognitive abilities (Hunter, 1986). This single factor has occasionally been defined as the ability to learn in the training literature (Hunter, 1986). The determinants of this ability encompass the individual's repertoire of knowledge and facility with "acquiring, storing in memory, retrieving, combining, comparing, and using in new contexts information and conceptual skills" (Humphrey, 1979). IQ or specific test scores have been used as the proxy of the cognitive ability in the prior studies (Hunter, 1986).

Attentional capacity has been suggested as the comprehensive mechanism for cognitive ability in the human information processing behavior (Kanfer and Ackerman, 1989; Ackerman, 1986). Attentional capacity is the capability aspect of individual's cognitive resources whereas attentional effort is the motivation aspect (Kanfer and Ackerman, 1989). Individuals differ in terms of basic information processing capacities or their level of cognitive resources, and this difference is measurable by the specific test scores in the job situation (Kanfer and Ackerman, 1989). Traditionally, scholars have posited that cognitive work takes place in a physical space called working memory and that processing of additional information becomes problematic, because some pieces of information are lost once the limits of working memory are reached. The literature on skill acquisition is consistent in showing that information processing or attentional capacity is important during early stages of task performance, when a great deal of information from the environment and recalled knowledge must be represented in working memory (Ackerman, 1986, 1987).

Individual's capability of information and IT use has been explored with the concept of user competence (Marcolin *et al.*, 2000; Munro *et al.*, 1997). User competence is defined as the user's potential to apply IT to its fullest possible extent so as to maximize performance of specific job task (Marcolin *et al.*, 2000). Competence with IT and subsequent use of information are especially important because of its effect on workplace productivity. Marcolin *et al.* (2000) concluded that specific dimensions of the competence should be measured with the appropriate methodologies, and this practice would be beneficial to completely understand the determinants of performance. Bassellier *et al.* (2001) also investigate the concept of the IT competence of business managers, which is defined as the set of IT-related explicit and tacit knowledge of a business manager that enables him or her to exhibit IT leadership in the business. Explicit knowledge capability includes mapping knowledgeable people within or outside the organization and secondary sources of information through internet, journals, or conferences. Tacit IT knowledge is conceptualized as a combination of mental model and experience.

IT training researchers have explored mental model as an important explanatory mechanism of individual's information and IT skill acquisition and subsequent performance (Vandenbosch and Higgins, 1995; Lim *et al.*, 1997; Santhanam and Sein, 1994). Mental model is defined as a representation formed by an individual for a task, which provides most of their subsequent understanding and dictates the level of task performance (Wilson and Rutherford, 1989; Rouse and Morris, 1986). For example, Vandenbosch and Higgins (1995) proposed a model of the relationships among IS, learning with mental model, and performance, describing the impact of executive support systems on perceptions of competitive performance when viewed from a learning perspective with mental model. The model proposes two types of learning: mental-model maintenance, in which new information fits into existing mental model and confirms them; and mental-model building, in which mental models are changed to

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accommodate new information. They found that perceptions of competitive performance resulting from executive support systems use were strongly related to mental-model building, but found no link between competitive performance and mental-model maintenance. Mental model makes inferences and predictions about the task (Johnson-Laird, 1983; Kieras and Bovair, 1984; Rouse and Morris, 1986) to predict and explain the behavior of the environment, to recognize and remember relationships among components of the environment, and to construct expectations for what is likely to occur next (Rouse and Morris, 1986).

Information orientation model (Marchand *et al.*, 2000, 2001, 2002) is an important framework to develop the sub-dimensions of IMC. Marchand *et al.* conducted a survey of 1,009 senior managers in 22 countries and 25 industries examining how an "information orientation" of an organization determines business performance. While Marchand *et al.* focussed on senior manager's perception regarding information use at the organizational level, their conceptualization of information behaviors/values and information management practices have important implications for the present research in defining the construct structural properties of IMC and their sub-dimensions. Marchand *et al.* (2000, 2001, 2002) define information management practice as "a company's capability to manage information effectively over the life cycle of information use, including sensing, collecting, organizing, processing, and maintaining information." Their conceptualization of information management practice is based on the traditional view of the information life cycle (Ashby, 1956; Kuhlthau, 1991; Taylor, 1968). Given that individual's mental-model building capability is based on his or her attentional capacity in the information life cycle, information management practice's sub-dimensions of information orientation model can be applicable to individual's information management contexts. Adapting their view of information management practice to the individual information management and mental-model contexts, we define IMC as "a person's perceived evaluation of his or her ability to manage information effectively over the information life cycle," which consists of formative sub-dimensions such as sensing, collecting, organizing, processing, and maintaining activities.

3. Research hypotheses

3.1 Sensing information

We define sensing information as "a person's perceived evaluation of his ability to actively scan the environment to detect and identify information for the job." Sensing means to perceive, become aware of, or detect events or a state of things, in a person's environment. At this dimension, a person must continuously recognize events, trends, and changes in business conditions, and make sense out of them. A person uses cognitive judgments about their external environment to make a valuation judgment whether potentially collectable information will convince a new or unanswered problem or decision. Sensing information is covered by topic selection and pre-focus exploration of the information search process (Kuhlthau, 1991). If people sense that there are uncertainties that are not bearable and have the capability to acquire information to get rid of these uncertainties, they would like to sense the new information. The mental model of the individual is related to the degree of the capability to sense. If a person can effectively interact with and scan the environment, he or she has the high capability of mental-model building with the environment (Wilson and Rutherford, 1989; Rouse and Morris, 1986). Thus, we hypothesize that:

H1. Sensing information will be a formative factor of IMC.

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3.2 Collecting information

We define collecting information as "a person's perceived evaluation of his ability to gather information accurately and effectively for the job." At this dimension, a person decides whether the decisional benefits received from the collecting new information are worth the associated cost of its collection. Information overload is an important mechanism to comprehend this capability. Some people can collect information well to avoid information overload while other people cannot. If a person has high-collecting ability avoiding information overload, he will show high-information usage capability. Collecting information includes filtering information to avoid information overload and identifying key knowledge sources. Individual's mental model is related to his capability of collecting information supported by IT tools (Vandenbosch and Higgins, 1995). We hypothesize that:

H2. Collecting information will be a formative factor of IMC.

3.3 Organizing information

We define organizing information as "a person's perceived evaluation of his ability to manage information to better do the job." At this dimension, a person demonstrates his ability of whether appropriate information management can be established. Indexing, classifying, and connecting information is the unique capability of an individual information user. Organizing information needs appropriate skills, expertise, and work habits that a knowledge worker must possess. The pattern of using IT to organize knowledge or information was also proved to be diverse among individuals (Marcolin *et al.*, 2000). The present study theorizes an individual's capability to organize information effectively as a formative dimension of IMC. We hypothesize that:

H3. Organizing information will be a formative factor of IMC.

3.4 Processing information

We define processing information as "a person's perceived evaluation of his ability to use information well to solve problems, make decisions or complete tasks." At this dimension, a person shows whether the information collected and organized actually satisfies analytical and decision needs. He must be able to access appropriate information sources before making decision. Then, he must actively engage in analyzing information sources to derive useful knowledge as inputs to decisions. This aspect has been well defined and explored in the training literature (Hunter, 1986; Jensen, 1998). For example, individual differences in information processing capacity have been suggested and supported as the main determinant of learning effectiveness and performance (Colquitt *et al.*, 2000; Humphrey, 1979). When people process information in a learning situation, they use different inferences of mental model that they have produced to learn more effectively (Kieras and Bovair, 1984). We hypothesize that:

H4. Processing information will be a formative factor of IMC.

3.5 Maintaining information

We define maintaining information as "a person's perceived evaluation of his ability to accurately discern the future value of processed information and make it reusable." At this dimension, a decision is made whether information should continue to be stored and updated in anticipation of future use. To the extent that information can be reused and refreshed, we would expect less of a need for additional new information to be collected. Maintaining information engages reusing existing information to avoid

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collecting the same information again, updating information so they remain current, and refreshing data to make sure the best information. This is related to an individual's mental-model maintenance through which he understands the situation and environment (Rouse and Morris, 1986; Vandenbosch and Higgins, 1995). People do not waste the time for the new information in the environment because they know that preoccupied information can be reusable and updated. We hypothesized that:

H5. Maintaining information will be a formative factor of IMC.

4. Research method

4.1 Measure development

Following standard measure development procedures (e.g. Churchill, 1979; Moore and Benbasat, 1991), the IMC scales were developed through iterative steps including specifying the domain of the constructs, generating a sample of items, pilot-testing and purifying the items, collecting additional data, and assessing the reliability and validity of the measure. Based on the conceptual definitions of the IMC sub-dimensions and the Marchand *et al.*'s (2000, 2001, 2002) information orientation model, we generated six items for each dimension of IMC (sensing, collecting, organizing, processing, and maintaining), resulting in 30 items for IMC. The initial set of items was refined and purified through two tests using 120 (i.e. 50 for the Study 1 and 70 for the Study 2) MBA students who are working as knowledge workers as participants.

The five researchers participated in the initial item creation of IMC, creating and discussing the new items. The initial scale of IMC was six items for each dimension of five constructs, which resulted in 30 items. After the initial scale item creation, four PhD students participated in a card sorting method for the reliability and construct validity as suggested by Moore and Benbasat (1991). Cohen's κ was 89.8 percent and the average of degree of inter-judge agreement was 92 percent, indicating that items were generally placed as they were intended. Because the reasonable Cohen's κ was over 65 percent, and the inter-judge agreement over 90 percent (Moore and Benbasat, 1991), overall pretests of initial items were proved to be reliable and valid. Following the recommendation of Moore and Benbasat (1991), the present study retained all items and then performed the test using these items in Study 1.

To purify the measurement items from the initial scale and finalize the items, we used SPSS technique in the test to analyze the data. The Study 1 was surveyed to MBA students with more than five years of average knowledge worker job experience. They had extensive knowledge work including system designer, financial analyst, general manager, teacher, and librarian. Given the characteristics of job style and various work experiences related to knowledge work, 50 MBA students with the various knowledge worker job backgrounds were chosen randomly. The main objective of the Study 1 was to purify the items by rewording the initial items based on the reliability measured by Cronbach's α. The initial scales of IMC were revised and reworded to achieve higher reliability. Job performance, sensing, and organizing constructs were reliable (α was more than 0.70), whereas some dimensions of IMC showed lower reliability less than 0.70. Items with lower reliability were revised to provide the clear meaning based on participants' suggestions. After rewording and revising the items, 30 new items of IMC were prepared for the Study 2.

In Study 2, two rules were used to get the refined items for the final field test; Cronbach's α should be more than 0.70 (Moore and Benbasat, 1991); and item-to-total correlations should be more than 0.60. The samples were seventy MBA students who had

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been knowledge workers for more than five years with the titles of senior manager, financial analyst, secretary, and technical manager. By eliminating low reliability (less than 0.70) and item-to-total correlation (less than 0.60) items of the Study 2, the item numbers were reduced into 16 for IMC. Detailed items retained after the Study 1 and the reliabilities as well as item-to-total correlations of the constructs were shown in the Table I. As shown in the table, every Cronbach's α in the model was over 0.70, which shows higher reliability of the construct than in the Study 1. Every item-to-total was more than 0.60.

Throughout the scale development processes, considerable efforts were made to make sure the content validity of the study variables and to make distinctions among the five dimensions of IMC. Using the final set of items from the Study 1 (see Table I), the Study 2 was conducted with partial least square (PLS) modeling technique with 70 samples.

4.2 Study 2

Measure validation and model testing were conducted with PLS Graph Version 2.91.03.04 (Chin and Frye, 1998), a structural equation-modeling tool that utilizes a component-based approach to estimation using merged samples of 70 in Study 2. PLS makes few assumptions about measurement scales, sample size, and distributional assumptions (Chin, 1998; Fornell and Bookstein, 1982). In general, PLS is better for explaining complex latent variables, as it avoids two problems: inadmissible solutions and factor indeterminacy (Fornell and Bookstein, 1982). Compared with covariance-based SEM tools such as LISREL and EQS, PLS is appropriate for the research model that has both formative and reflective constructs, which is the case in our study (Chin, 1998; Fornell and Bookstein, 1982).

Before testing the hypothesized structure model, we first evaluated the psychometric properties of the study variables through confirmatory factor analysis using a measurement model in which the first-order latent variables were specified as correlated variables with no causal paths. The measurement model was assessed by using PLS to test internal consistency reliability and convergent and discriminant validity[1] (Chin, 1998). Table II shows internal consistency reliabilities, convergent and discriminant validities, and correlations among latent constructs. The internal consistency reliabilities were at least 0.83, exceeding the minimal reliability criteria (i.e. 0.70). Also, satisfying convergent and discriminant validity criteria, the square root of the average variance extracted was greater than 0.707 (at least 0.83) and greater than the correlation between that construct and other constructs without exception and the factor structure matrix (Table III) shows that all items exhibited high loadings (>0.707) on their respective constructs without exceptions and no items loaded higher on constructs that they were not intended to measure. Collectively, the psychometric properties of the study variables were considered excellent and sufficiently strong to hold up valid testing of the proposed structural model.

4.3 Test of model and hypotheses

The PLS structural model and hypotheses were assessed by examining path coefficients and their significance levels. Following Chin (1998), bootstrapping (with 500 resamples) was performed on the model to obtain estimates of standard errors for testing the statistical significance of path coefficients using *t*-test. Because PLS Graph (Version 2.91.03.04) does not directly hold up second-order latent constructs, the IMC

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Indicator	Items	Corr	α
Sensing 1	I am good at recognizing potential problems and sensing information to address them	0.71	0.87
Sensing 2	I am good at detecting potential problems and finding the information that will eliminate problems	0.69	
Sensing 3	I am good at evaluating changes in my environment and responding with the right information	0.74	
Sensing 4	People seek my advice about defining new information needs	0.70	
Sensing 5	I am good at sensing changes in our business that requires new information	0.70	
	I can predict future events in my job that require new information		
Collecting 1	I am good at gathering the right information to prevent information overload	0.73	0.82
Collecting 2	I am good at filtering information for others to prevent information overload	0.67	
Collecting 3	I significantly contribute to collecting information other people need to do their job	0.68	
	I know how to tap sources of knowledge and record them for use		
	I don't need other's help in understanding what information I am responsible for collecting		
	I know how to tap sources of knowledge and record them for use		
Organizing 1	In an emergency, my co-workers could find useful information in my files	0.64	0.80
Organizing 2	I frequently take time during my working day to classify new information for easy future retrievals	0.68	
Organizing 3	I do not waste time looking for information as I have it well organized	0.62	
	I have developed a personal scheme to organize my information for maximum job performance		
	When asked for information, I can locate it quickly		
	I naturally have a scheme in my head for organizing information for effective use		
Processing 1	Compared to my co-workers, I am better at processing information from many different sources to make the best decisions	0.64	0.77
Processing 2	I know how to translate information into specific knowledge that can be used by others	0.61	
Processing 3	Once I have the information I need, it does not take much time for me to process information and solve problems	0.61	
	I would be more decisive in my decision making if only I could process the right information		
	I take the time to thoroughly analyze all available information before making a decision		
	I don't rely on other's help to make decisions in complex situations because I am very good at using the information available to me		
Maintaining 1	I am good at determining the future value of information for later use	0.69	0.80
Maintaining 2	Compared to my co-workers, I am good at eliminating outdated information in my job	0.69	
	I often find myself having to recreate information I previously created		
	Compared to my colleagues, I am an expert in updating information for future use		
	I often find myself having to recollect information I previously collected		
	I do not take the time to discard information that I know will not be useful in the future		

Notes: $n = 70$: Study 2. Deleted items in Study 1 are italic

Table I.
Questionnaire items and construct reliabilities

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constructs conceptualized as second-order constructs in the proposed model were represented by factor scores derived from the confirmatory factor analysis (Chin, 1998). IMC was modeled as formative.

As shown in Table IV, all of the first four hypotheses (*H1-H5*), each of which corresponds to a formative path of IMC, were supported within the 0.001 significance level. Variance Inflation Factor (VIF) index (Hwang and Kim, 2007) indicates that multicollinearity is not a problem when it is less than ten. VIF of IMC sub-dimensions were below ten, which showed that multicollinearity was not the problem in this model.

5. Discussion

5.1 Summary

This study has developed and conducted an initial test that theorizes IMC of knowledge workers. All hypotheses of sub-dimensions of IMC were supported within the 0.001 significance level, supporting the model with high confidence. The five dimensions of IMC may play the dominant role in formalizing IMC in the information life cycle, minimizing the effects of maintaining. Overall, the proposed model is well supported by the data and provides a new and theoretical explanation of how IMC of a knowledge worker can be understood and measured.

Table II.
Reliabilities, convergent and discriminant validities, and correlations

	ICR	(1)	(2)	(3)	(4)	(5)
(1) Sensing	0.92	*0.83*				
(2) Collecting	0.92	0.68	*0.89*			
(3) Organizing	0.91	0.46	0.50	*0.87*		
(4) Processing	0.87	0.63	0.74	0.55	*0.83*	
(5) Maintaining	0.85	0.60	0.68	0.61	0.75	*0.86*

Notes: $n = 70$. Internal Consistency Reliability (ICR) should be larger than 0.70

Table III.
Factor structure matrix of loadings and cross-loadings

	Sensing	Collecting	Organizing	Processing	Maintaining
Sensing 1	*0.85*	0.54	0.36	0.52	0.43
Sensing 2	*0.90*	0.57	0.37	0.53	0.49
Sensing 3	*0.86*	0.59	0.43	0.53	0.53
Sensing 4	*0.76*	0.55	0.35	0.50	0.48
Sensing 5	*0.78*	0.58	0.44	0.56	0.58
Collecting 1	0.62	*0.91*	0.43	0.67	0.65
Collecting 2	0.64	*0.93*	0.48	0.68	0.62
Collecting 3	0.55	*0.83*	0.42	0.61	0.54
Organizing 1	0.44	0.44	*0.86*	0.47	0.48
Organizing 2	0.39	0.44	*0.86*	0.48	0.58
Organizing 3	0.39	0.43	*0.90*	0.50	0.55
Processing 1	0.45	0.57	0.37	*0.78*	0.61
Processing 2	0.58	0.67	0.53	*0.89*	0.66
Processing 3	0.53	0.58	0.47	*0.80*	0.58
Maintaining 1	0.59	0.60	0.53	0.64	*0.89*
Maintaining 2	0.42	0.57	0.52	0.65	*0.83*

Notes: $n = 70$. Loadings on their respective constructs are italic (all greater than 0.707)

Latent construct	Sub-dimension	Definition	Path
Information Management Capability	Sensing	"A person's perceived evaluation of his ability to actively scan the environment to detect and identify information for the job."	0.31***
	Collecting	"A person's perceived evaluation of his ability to gather information accurately and effectively for the job."	0.31***
	Organizing	"A person's perceived evaluation of his ability to manage information to better do the job."	0.26***
	Processing	"A person's perceived evaluation of his ability to use information well to solve problems, make decisions or complete tasks."	0.32***
	Maintaining	"A person's perceived evaluation of his ability to accurately discern the future value of processed information and make it reusable."	0.21***

Notes: $n = 70$. ***$p < 0.001$

Table IV. Sub-dimensions and paths of information management capability

From the knowledge-based view of the firm, the effectiveness of the individual knowledge worker's information management and its capability has been highlighted as the core resource of a company (Grant, 1996a; Kogut and Zander, 1992; Nonaka, 1994). Given that knowledge is originating with individuals (Grant, 1996a), the extent to which a person is motivated and able to use information effectively is crucial to the success of a firm. As individual performance is an essential building block of organizational effectiveness, understanding IMC provides initial empirical evidence in establishing the linkage between individual workers' information management and organizational effectiveness. Assuming that cultural barriers to KM (e.g. organizational norms that promote and encourage knowledge hoarding) cannot be effectively reduced or eliminated through IT applications alone (Alavi and Leidner, 2001), a major cultural shift may be required to change employees' attitudes and behaviors so that they willingly and consistently share their personal information and insights. The framework presented by this study helps reduce the gap between individual's information management activities and organizational KM processes.

5.2 Implications for research

Although the present research did not directly explain knowledge creation in the organization, the model provides the possible linkage point between organizational knowledge creation and an individual's IMC. Knowledge creation would be a more synergetic and complex process of individual member's information use, including socialization, internalization, externalization, and combination (Nonaka and Takeuchi, 1995). The findings in this study can be effectively extended to the first three processes because they involve individual's KM activities. Future research focussing on the knowledge creation and the relationship to job performance would be beneficial to understanding these complex phenomena.

Other organizational KM processes can be tested with the proposed model. For example, in the organizational knowledge transfer process, knowledge flows between individuals and groups, and a major challenge of KM is to facilitate these flows so that maximum amount of transfer occurs assuming that the knowledge, which individuals create, has value, and can improve performance (Alavi and Leidner, 2001). Based on

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this logic, organizational knowledge processes would consist of the summation of the individual and group knowledge processes (Saberwal and Becerra-Fernandez, 2003), which could be explained by incorporating group variables into the model proposed by this study.

Another interesting future research area would be assessing the relationships among the current model and other organizational interventions, such as close or weak ties, incentive systems, cultural changes, as well as the role of KM systems for organizational learning based on these relationships. Further research is also suggested to specifically examine the relationships among IMC and other individual characteristic constructs[2]. These further tests would be helpful to understanding how individuals are likely to manage information differently regardless of technology support and what training or other organizational interventions are most effective in changing their information management practices.

Future research on information management by knowledge workers will need to carefully consider potential effects of all the sub-dimensional constructs of IMC, proposed by this study. Prior studies suggested that several control mechanisms, such as clan, quantitative, or qualitative control, could be applied to the organizational intervention for an individual's performance. The influence of these different control mechanisms or organizational culture on IMC would warrant further investigation.

Given assumptions about the characteristics of knowledge and the knowledge requirements of production, the company is conceptualized as an institution for integrating knowledge (Grant, 1996a). IMC were suggested to capture the individual's knowledge domain in the company. The extent to which a member of an organization is able to use information effectively is crucial to a company, since knowledge is viewed as residing within the individual (Grant, 1996b). Thus, the IMC provides a theoretical explanation of the KM phenomena of knowledge application at the individual level.

User competence (Marcolin *et al.*, 2000; Munro *et al.*, 1997) and IT competence (Bassellier *et al.*, 2001) have been recently proposed as important characteristics of a knowledge worker in IS literature. However, these concepts focus more on the IT use perspective in knowledge application rather than directly covering the information and knowledge application for job performance. This study provides new constructs such IMC, to explain knowledge worker's information use behavior. Given that information use as well as IT use are important issues in knowledge application in the company, the findings in this study can be linked to the findings of user competence and IT competence. Furthermore, the findings in this study would be beneficial to KM research, linking the psychological aspects of knowledge application to the KM performance.

5.3 Implications for practice

The practical contribution of this research is to recognize important aspects of effective information management and provide validated measures of those aspects. The scales of IMC developed by this study can be used to directly assess how well a knowledge worker contributes to a company's KM processes and which part of information management activities need further improvement through training. Training program can be developed to improve this specific dimension rather than ignoring. The scales can be also used to compare the collective effectiveness of information management between organizational units or monitor the effectiveness of information flows across the organization. For example, group gatekeepers in an organization, acting as links between

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the episodic memories of two groups, should have high IMC to effectively shift the organizational knowledge into performance. Our proposed model supports the overall understanding of these phenomena and the direct measurement methods in this situation.

Davenport (1998) argued that personal information effectiveness is the most crucial factor in business information management, because personal manipulation of information is the main input of products in knowledge-based companies. In essence, the distillation of personal information behaviors and usage is fundamental to a knowledge-based organization in order for it to stay competitive. Our research will be beneficial to a company's KM in that it will provide validated measurements of individual-level information capability that are the essential component of a company's knowledge.

In addition to the theoretical explanation by IMC, the present research actually provided the consulting tools to the company through the validated measures of IMC, which can be the practical implications. For example, the organization that was used as a sample in this research was analyzed by the author for the practical guidance of information management at the organizational level, divisional level, and individual level. The average scores of IMC of the employees of the company or the division were used for this analysis. The practical guidance based on this analysis was to focus on enhancing the capability to use information effectively by implementing a training program or incentive system to support these activities. Specifically, the capability to organize and reuse information warrants improvement in this company.

For example, employees of one division in the company can show relatively lower sensing information capability when compared to employees in other divisions. One of the possible reasons for this result could be that most of the workflow is pre-defined and automatic and needed less ability to use information effectively in sensing new information in this division. The reactive and inflexible culture of workflow in this division could have influenced sensing capability based on the reciprocal nature of the environment and an individual's behavior (Marchand *et al.*, 2000, 2002).

This study would be helpful for the practitioners in order to evaluate the successful implementation of KM systems. Given that the knowledge worker systems are the priority of IT investment in the future and information management is the most important strategic focus in the era of the Information Revolution (Grant, 1996a), the IMC should provide practical guidance for implementing these systems in order to enhance subsequent job performance by technology innovation. Without enhancing the IMC of the knowledge workers, the investment in technology innovation such as KM systems or recruiting high-analytic workers/technicians would not be directly linked to the high performance of the organization.

The measurements developed in this study can be used as the diagnostic tool for the company in the knowledge worker recruiting process. Given that knowledge workers are the most important intangible assets in a company, this application would be beneficial to the practitioners who try to implement KM and technology innovation.

5.4 Limitations

In this study, based on a quantitative methodology, research hypotheses are identified and a series of statistical analyses are conducted with suitable rigor. The difficulty from another perspective is that the basic definition of the construct to be tested as outlined in the paper is essentially qualitative. There is thus a seeming disconnect between the quantitative methodology study and the inherently qualitative

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proposition. The study therefore could add a much more robust justification of the methodological approach used or further, qualitative research should be conducted. However, this research could not provide the qualitative analysis because of the lack of data sources. Future research can test the qualitative analysis results to compare the current research findings in the quantitative analysis.

The current research did not include the complete nomological net of information management but focussed on the important information management capabilities based on the information life cycle. Future research could assess the complete nomological net among the current model and other organizational interventions affecting incentive systems, decision rights, values, norms, and cultural changes, as well as the role of KM systems for organizational learning based on these relationships.

5.5 Conclusion

In conclusion, effective use of information by knowledge workers is an essential driver of a firm's competitiveness and value. As an organization is constantly faced with changes in the business environment, its ability to acquire appropriate information and reduce uncertainty in its decision making is an fundamental basis for its competitive advantage. The present research proposes and tests IMC of knowledge worker, representing an initial yet important step toward bridging the gap between individual information management activities and organizational KM processes. Further, the current research identifies the underlying formative sub-dimensions that constitute IMC and develops their scales, enabling organizations to directly assess the strengths and weaknesses of each individual's capability regarding the use of information. In today's business world, where effective use of information is a core asset of a company, our findings and measures should help organizations accomplish desired results with information and distinguish themselves from others.

Notes

1. Internal consistency reliabilities of 0.7 or higher are considered adequate. Two criteria are generally applied to assess convergent and discriminant validity: the square root of the average variance extracted (AVE) by a construct should be at least 0.707 (i.e. AVE > 0.50) and should exceed that construct's correlation with other constructs and item loadings should be at least 0.707 and an item should load more highly on the one it is intended to measure than on any other construct.
2. The relationships between other individual characteristic constructs such as personal innovativeness in IT (Hwang, 2009), learning goal orientation (Yi and Hwang, 2003), and IMC constructs deserve further exploring.

References

Ackerman, P.L. (1986), "Individual differences in information processing: an investigation of intellectual abilities and task performance during practice", *Intelligence*, Vol. 10 No. 3, pp. 101-139.

Ackerman, R., Kanfer, R. and Goff, M. (1995), "Cognitive and non-cognitive determinants and consequences of complex skill acquisition", *Journal of Experimental Psychology*, Vol. 1 No. 4, pp. 270-304.

Alavi, M. and Leidner, D.E. (2001), "Knowledge management and knowledge management systems: conceptual foundations and research issues", *MIS Quarterly*, Vol. 25 No. 1, pp. 107-136.

Downloaded by TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES At 21:10 07 November 2016 (PT)

Anderson, J.R. (1982), "Acquisition of cognitive skill", *Psychological Review*, Vol. 89 No. 4, pp. 369-406.

Ashby, W. (1956), *An Introduction to Cybernetics*, Chapman & Hall, London.

Bassellier, G., Reich, B. and Benbasat, I. (2001), "Information technology competence of business managers: a definition and research model", *Journal of MIS*, Vol. 17 No. 4, pp. 159-182.

Chin, W.W. (1998), "The partial least squares approach to structural equation modeling", in Marcoulides, G.A. (Ed.), *Modern Methods for Business Research*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 195-336.

Chin, W.W. and Frye, T.A. (1998), "PLS-Graph", Version 2.91.03.04, University of Houston, Houston, TX.

Churchill, G. (1979), "A paradigm for developing better measures of marketing constructs", *Journal of Marketing Research*, Vol. 16 No. 1, pp. 64-73.

Colquitt, J.A., LePine, J.A. and Noe, R.A. (2000), "Toward an integrative theory of training motivation: a meta-analytic path analysis of 20 years of research", *Journal of Applied Psychology*, Vol. 85 No. 5, pp. 678-707.

Fornell, C. and Bookstein, L. (1982), "The structural equation models: LISREL and PLS applied to consumer exit-voice theory", *Journal of Marketing Research*, Vol. 19 No. 4, pp. 440-452.

Gagne, M. (2009), "A model of knowledge-sharing motivation", *Human Resources Management*, Vol. 48 No. 4, pp. 571-589.

George, J.F.K., Marett, G. and Giordano, A. (2008), "Deception: toward an individualistic view of group support systems", *Journal of the Association for Information Systems*, Vol. 9 No. 10, pp. 55-71.

Grant, R.M. (1996a), "Toward a knowledge – based theory of the firm", *Strategic Management Journal*, Vol. 17 No. 10, pp. 109-122.

Grant, R.M. (1996b), "Prospering in dynamically competitive environments: organizational capability as knowledge integration", *Organization Science*, Vol. 7 No. 4, pp. 375-387.

Grover, V. and Davenport, T.H. (2001), "General perspectives on knowledge management: fostering a research agenda", *Journal of MIS*, Vol. 18 No. 1, pp. 5-21.

Hesamamiri, R., Mazdeh, M., Jafari, M. and Shahanaghi, K. (2015), "Knowledge management reliability assessment: an empirical investigation", *Aslib Journal of Information Management*, Vol. 67 No. 4, pp. 422-441.

Humphrey, L. (1979), "The construct of general intelligence", *Intelligence*, Vol. 3 No. 2, pp. 105-120.

Hunter, E. (1986), "Cognitive ability, cognitive aptitudes, job knowledge, and job performance", *Journal of Vocational Behavior*, Vol. 29 No. 3, pp. 340-362.

Hwang, Y. (2009), "The impact of uncertainty avoidance, social norms and innovativeness on trust and ease of use in electronic customer relationship management", *Electronic Markets*, Vol. 19 No. 2, pp. 89-98.

Hwang, Y. and Kim, D. (2007), "Understanding affective commitment, collectivist culture, and social influence in relation to knowledge sharing in technology mediated learning", *IEEE Transactions on Professional Communication*, Vol. 50 No. 3, pp. 232-248.

Hwang, Y., Kettinger, W.J. and Yi, M. (2010), "Understanding information behavior and the relationship to job performance", *Communications of the AIS*, Vol. 27 No. 8, pp. 113-128.

Janz, B.D. and Prasarnphanich, P. (2003), "Understanding the antecedents of effective knowledge management: the importance of a knowledge-centered culture", *Decision Sciences*, Vol. 34 No. 2, pp. 351-384.

Jensen, A.R. (1998), *The g Factor: The Science of Mental Ability*, Praeger, Westport, CT.

Downloaded by TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES At 21:10 07 November 2016 (PT)

Johnson-Laird, P.N. (1983), *Mental Models*, Harvard University Press, Cambridge, MA.

Kanfer, R. and Ackerman, P. (1989), "Motivation and cognitive abilities: an integrative/aptitude-treatment interaction approach to skill acquisition", *Journal of Applied Psychology*, Vol. 74 No. 4, pp. 657-690.

Kieras, D.E. and Bovair, S. (1984), "The role of a mental model in learning to operate a device", *Cognitive Psychology*, Vol. 8 No. 3, pp. 255-273.

Ko, D., Kirsch, L.J. and King, W.R. (2005), "Antecedents of knowledge transfer from consultants to clients in enterprise system implementations", *MIS Quarterly*, Vol. 29 No. 1, pp. 59-85.

Kogut, B. and Zander, U. (1992), "Knowledge of the firm, combinative capabilities, and the replication of technology", *Organization Science*, Vol. 3 No. 3, pp. 383-397.

Kuhlthau, C. (1991), "Inside the search process: information seeking from the user's perspective", *Journal of the American Society for Information Science*, Vol. 42 No. 5, pp. 361-371.

Kyllonen, P.C. and Christal, R.E. (1990), "Reasoning ability is (little more than) working memory capacity?", *Intelligence*, Vol. 14 No. 3, pp. 389-433.

Langefors, B. (1973), *Theoretical Analysis of Information Systems*, Auerbach Publishers, Inc., Philadelphia, PA.

Leonard-Barton, D. (1992), "Core capabilities and core rigidities: a paradox in managing new product development", *Strategic Management Journal*, Vol. 13 No. 2, pp. 111-125.

Lim, K.H., Ward, L.M. and Benbasat, I. (1997), "An empirical study of computer system learning: comparison of co-discovery and self-discovery methods", *Information Systems Research*, Vol. 8 No. 3, pp. 254-272.

Marchand, D.A., Kettinger, W.J. and Rollins, J.D. (2000), "Information orientation: people, technology and the bottom line", *Sloan Management Review*, Vol. 41 No. 4, pp. 69-80.

Marchand, D.A., Kettinger, W.J. and Rollins, J.D. (2001), *Making the Invisible Visible: How Companies Win with the Right Information, People, and IT*, John Wiley and Sons, Chichester, NY.

Marchand, D.A., Kettinger, W.J. and Rollins, J.D. (2002), *Information Orientation: The Link to Business Performance*, Oxford University Press, Oxford.

Marcolin, B., Compeau, D., Munro, M. and Huff, S. (2000), "Assessing user competence: conceptualization and measurement", *Information Systems Research*, Vol. 11 No. 1, pp. 37-60.

Martz, W.B. and Shepherd, M.M. (2003), "Testing for the transfer of tacit knowledge: making a case for implicit learning", *Decision Sciences Journal of Innovative Education*, Vol. 1 No. 1, pp. 41-56.

Mithas, S. and Krishnan, M.S. (2009), "From association to causation via a potential outcomes approach", *Information Systems Research*, Vol. 20 No. 2, pp. 295-313.

Mithas, S., Ramasubbu, N. and Sambamurthy, V. (2011), "How information management capability influences firm performance", *MIS Quarterly*, Vol. 35 No. 1, pp. 1-15.

Moore, G. and Benbasat, I. (1991), "Development of an instrument to measure the perceptions of adopting an information technology innovation", *Information Systems Research*, Vol. 2 No. 3, pp. 192-221.

Munro, M., Huff, S., Marcolin, B. and Compeau, D. (1997), "Understanding and measuring user competence", *Information and Management*, Vol. 33 No. 1, pp. 45-57.

Nonaka, I. (1994), "A dynamic theory of organizational knowledge creation", *Organization Science*, Vol. 5 No. 1, pp. 14-36.

Nonaka, I. and Takeuchi, H. (1995), *The Knowledge Creating Company*, Oxford University Press, New York, NY.

Downloaded by TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES At 21:10 07 November 2016 (PT)

Orna, E. (1996), "Valuing information: problems and opportunities", in Best, D. (Ed.), *The Fourth Resource: Information and its Management*, ASLIB/Gower, Aldershot, pp. 18-40.

Ragowsky, A., Licker, P.S. and Gefen, D. (2008), "Give me information, not technology", *Communications of the ACM*, Vol. 51 No. 6, pp. 23-25.

Rouse, W.B. and Morris, N.M. (1986), "On looking into the black box: prospects and limits in the search for mental models", *Psychological Bulletin*, Vol. 100 No. 3, pp. 349-363.

Saberwal, R. and Becerra-Fernandez, I. (2003), "An empirical study of the effect of knowledge management processes at individual, group, and organizational levels", *Decision Sciences*, Vol. 34 No. 2, pp. 225-260.

Sambamurthy, V. and Subramani, M. (2005), "Special issue on information technologies and knowledge management", *MIS Quarterly*, Vol. 29 No. 1, pp. 1-9.

Santhanam, R. and Sein, M.K. (1994), "Improving end-user proficiency: effects of conceptual training and nature of interaction", *Information Systems Research*, Vol. 5 No. 4, pp. 378-399.

Taylor, R. (1968), "Question-negotiation and information seeking in libraries", *College and Research Libraries*, Vol. 29 No. 3, pp. 178-194.

Tsoukas, H. (1996), "The firm as a distributed knowledge system: a constructionist approach", *Strategic Management Journal*, Vol. 17 No. 10, pp. 11-25.

Tuomi, I. (1999), "Data is more than knolwdge: implications of the reversed knowledge hierarchy for knowledge management and organizational memory", *Journal of MIS*, Vol. 16 No. 3, pp. 103-177.

van Deventer, P., Kruger, J. and Johnson, R. (2015), "Delineating knowledge management through lexical analysis – a retrospective", *Aslib Journal of Information Management*, Vol. 67 No. 2, pp. 203-229.

Vandenbosch, B. and Higgins, C.A. (1995), "Executive support systems and learning: a model and empirical test", *Journal of MIS*, Vol. 12 No. 2, pp. 99-130.

von Krogh, G. (1998), "Care in knowledge creation", *California Management Review*, Vol. 40 No. 3, pp. 133-153.

Wilson, J.R. and Rutherford, A. (1989), "Mental models: theory and application in human factors", *Human Factors*, Vol. 31 No. 6, pp. 617-634.

Yi, M.Y. and Hwang, Y. (2003), "Predicting the use of web-based information systems: self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model", *International Journal of Human-Computer Studies*, Vol. 59 No. 4, pp. 431-449.

Yigitbasioglu, O.M. and Velcu, O. (2012), "A review of dashboards in performance management: implications for design and research", *International Journal of Accounting Information Systems*, Vol. 13 No. 1, pp. 41-59.

Further reading

House, R., Shane, S. and Herold, D. (1996), "Rumors of death of dispositional research are vastly exaggerated", *Academy of Management Review*, Vol. 21 No. 2, pp. 203-224.

McHenry, J.J., Hough, L.M., Toquam, J.L., Hanson, M.A. and Ashford, S. (1990), "Project A validity results: the relationship between predictor and criterion domains", *Personnel Psychology*, Vol. 43 No. 3, pp. 335-354.

Mount, M.K. and Barrick, M.R. (1995), *Manual for the Personal Characteristics Inventory*, Wonderlick Personnel Test, Inc., Libertyville, IL.

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