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Americas Conference on Information Systems (AMCIS)

December 2007

Impact of Knowledge Management Systems on Knowledge Intensive Business Processes

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ABSTRACT

Focusing on Knowledge Intensive Business Processes, we present empirical research into how an organization's Business Process Management Maturity (BPM Maturity) and Knowledge Sharing Culture (KS Culture) can moderate the impact a Knowledge Management System has on Business Process Effectiveness. Current research in the literature has focused mainly on main effects and thus far ignored these interaction effects. We utilize Ping's structural equation modeling technique to test the significance of the interactions and examine the moderating effects. Results show that both BPM Maturity and KS Culture have significant moderating effects and improve the explanation of Business Process Effectiveness.

Keywords

Business Process Effectiveness, Business Process Management Maturity, Knowledge Management System, Knowledge Sharing Culture.

INTRODUCTION

Empirical research into how knowledge management systems affect outcomes associated with knowledge work is needed for organizations to prudently invest resources into knowledge management (KM) related endeavors. Alavi and Leidner called for, among other questions, research into what effect increasing the depth and breadth of available knowledge, via information technology, might have on organizational performance. (Alavi and Liedner, 2001) Research has investigated the contributions of knowledge management and knowledge management systems (KMSs) to overall organizational effectiveness (Tanriverdi, 2005; Marqués and Simón, 2006; Darroch, 2005). However, empirical support for improvements attributable directly to KMSs has been inconsistent. We investigate and propose that this lack of consistent results is due to moderating effects of environmental variables that have not been addressed in prior research. This paper will attempt to fill that gap in the literature.

This paper explores the relationships between the use of knowledge management systems and overall business process effectiveness. KMSs are designed to assist knowledge workers with specific business tasks within a business process. The impact of KMSs is therefore likely to be primarily observed on the outcomes of the processes they support. It is therefore important to examine this direct relationship in the context of other organizational factors that may affect it. We have chosen to focus on knowledge intensive business processes (KIBPs) in our research and exclude business processes where IT has been introduced solely for the purpose of managing and automating the business process. We are concerned with those processes where the application of knowledge is an integral part of the activities that make up the process. That is, we are concerned with processes where IT has been introduced to augment the knowledge workers' role in the business process. This category of processes has been defined in the literature as KIBPs. A KIBP is a business process that has embedded knowledge needs and is made up of activities that require the input of knowledge from knowledge workers, knowledge repositories, knowledge experts, etc. (Robles-Flores and Kulkarni, 2005; Massey, Montoya-Weiss, and O'Driscoll, 2002; Eppler, Seifried, and Röpnack, 1999). A KIBP example frequently encountered during our research is the software development process. This KIBP was described by several of our subjects in briefs they wrote where they were asked to point out what is critical to the success of the organization. Within this particular KIBP, developers needed to utilize the knowledge gained in previous development efforts so as not to “expend valuable resources”, “…to reinvent the wheel…” and so they can benefit and learn from “…methods used in previous implementations and the pitfalls and successes of coding designs.”

It has been suggested that within any given organization, knowledge management does not operate as an independent phenomenon (Alavi, Kayworth, and Leidner, 2006). The introduction of a KMS into an organization executing knowledge intensive business processes must therefore be impacted by concerns other than the system itself. Based on the literature reviewed later in this paper, we explore the impact environmental variables such as an organization’s readiness to adopt knowledge sharing processes and its overall ability to execute processes effectively might have on any potential improvements to be expected from the use of a KMS. We propose a model that describes the relationships between the level of support a KMS can provide an organization’s knowledge sharing activities, organizational knowledge sharing culture, business process management maturity, and overall business process effectiveness. Of primary interest are the effects the interactions between these constructs will have on any potential improvements. We present results of empirical research investigating the impact of KMSs on the execution of knowledge intensive business processes from the perspective of knowledge workers participating in the business process with the major contribution from our research being the identification of the interactions and their implications for researchers and practitioners.

The next section presents the theoretical foundations for the model. We then detail the development of the survey instrument and describe the data collection activities. After that we present the data analysis, and then discuss the results. Finally, we provide insights, limitations, and future directions for this research.

THEORY DEVELOPMENT

Starting with one question from Alavi and Leidner’s framework for knowledge management research (Alavi and Leidner, 2001): How will IT, when used to increase the depth and breadth of available knowledge, affect organizational performance?, we have decided to investigate the impact a KMS has on the effectiveness of the KIBP it supports. Expecting that other organizational conditions will affect the answer to this question, we focus our research on answering the question: Will organizational environment, in terms of willingness or readiness to adapt, collaboration, and general knowledge sharing make a difference as to whether or not a KMS will positively impact a knowledge intensive business process? The environmental influence is captured via two exogenous latent constructs. The first, Business Process Management Maturity, is an indication of how process-oriented the organization is and therefore a measure of how ready and willing the organization is to adapt to the introduction of new tools and processes such as the introduction of a KMS. The second, Knowledge Sharing Culture, is an indicator of how deeply ingrained the idea of collaboration and knowledge sharing is in the organization prior to the introduction of a formal KMS. Figure 1 provides an overview of the model.

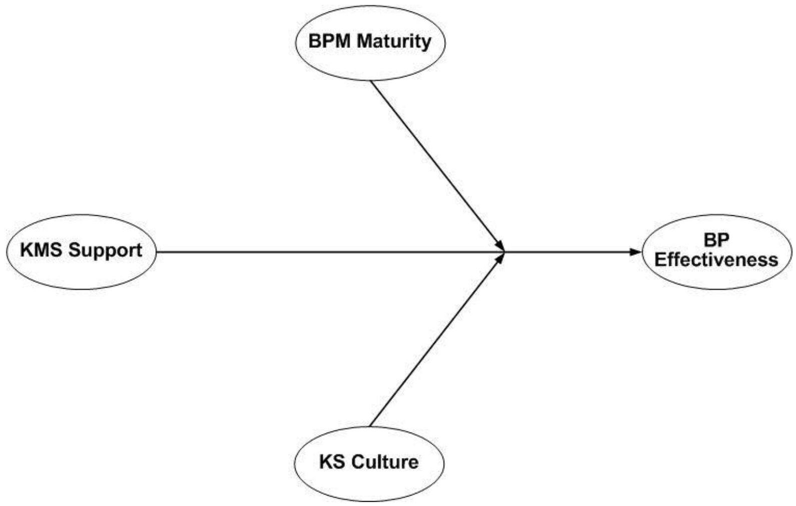

Figure 1 - High Level Path Research Model

The support the KMS provides the business process (*KMS Support* in our model) is the amount of system support that the KMS supplies to the process. It is a combination of the ability provided by the KMS to capture, store, disseminate, and reuse knowledge. It includes the technology sophistication of the KMS, as well as the extent of prevalence in systematically using the technology by the knowledge workers. The measurement of this variable was derived from qualitative data collected from respondents as explained in the next section. A KMS is likely to affect the business process it is designed to support. Hence, we chose business process effectiveness (*BP Effectiveness*) as our dependent measure.

The introduction of new and the improvement of existing KMSs have experienced mixed results on organizational performance. While examining the impact a KMS has on a KIBP, environmental factors have been hypothesized as important contributors to successful KMS improvement or implementation. Lack of empirical results on the impact of KMS on business process effectiveness may be due to the fact that environmental variables have not been systematically and properly included in prior research. To address this shortcoming, we include two environmental constructs, Business Process Management Maturity (*BPM Maturity*) and Knowledge Sharing Culture (*KS Culture*), and investigate their moderating influence on KMS Support.

We first look at BPM Maturity. Research has shown that the process maturity level of an organization has a significant effect on that organization's ability to change or adapt. Since truly successful adoption of IT requires accompanying process changes (Cooper, 2000), we expect that the introduction of KMS is a significant change to be adapted by an organization. We therefore expect that the maturity level of an organization in managing its business processes will have a significant impact on the success of such a change. This lead us to one part of the primary focus of our research: that BPM Maturity will have a moderating effect on the impact a KMS will have on process effectiveness when a KMS is introduced into a KIBP operating environment. Therefore, when considering the introduction of a KMS into a KIBP operating environment, we include measures of the level of process maturity in the organization. Our initial hypothesis for testing is stated as:

> H1: The business process management maturity level of an organization will affect the KMS' ability to impact overall business process effectiveness.

The second environmental variable of concern is the organization's overall cultural emphasis on knowledge sharing (KS). An organization's KS Culture has an affect on the usage and adoption of a KMS. Since it has been shown that an organization's knowledge-sharing or knowledge-embracing culture has an impact on the success or failure of the adoption of knowledge management practices (Chua and Lam, 2005), that a knowledge sharing culture was a major contributor to an organization's knowledge management capabilities (Gold, Malhotra, and Segars, 2001), and that an organizational culture that values collaboration influences the expected outcomes from KM use (Alavi, Kayworth, and Liedner, 2006), we should expect that an organization's knowledge-sharing culture should have an impact on its ability to successfully adopt a KMS. The successful adoption of a KMS should lead to a positive impact on BP Effectiveness. This leads us to the second part of the primary focus of this research: the belief that an organization's knowledge sharing culture should affect how a KMS impacts overall KIBP Effectiveness. We therefore include measures of the organization's knowledge-sharing culture in our model and state our second hypothesis as:

H2: The knowledge-sharing culture of an organization will affect the KMS' ability to impact overall business process effectiveness.

It is important to note here that our primary focus in this research is to identify the existence of these interactions. We therefore have intentionally avoided any directional hypotheses associated with these interactions.

RESEARCH METHODOLOGY

The research methodology involved collection of both qualitative and quantitative data. The subject group was composed of a group of 63 mid-level managers – representing 38 different firms - enrolled in the part-time professional Masters of Science in Information Management program at one of the largest urban universities in the U.S.A. The participants had between 5 to 15 years of work experience. A majority (approximately 70%) of the subjects is IT professionals (e.g., Project Manager, Senior Analyst, Solution Architect, Director of IT, Quality Manager, etc.) and the rest are distributed across various functional areas (e.g., managers of Projects, Marketing, Processes, Manufacturing, Accounts, Finance, etc.). Their job responsibilities indicated that they were routinely involved with knowledge work. Substantial cross-industry representation was also present in the subject group by way of firms that included: Banner Health, Caremark, CSK Auto, DHL, EMC Corp., Honeywell, IBM, Intel, Mayo Clinic, Raytheon, SRP, Wells Fargo, etc.

Data Collection

Data was collected as part of an assignment integrated into a graduate level course. Collection occurred over two class periods separated by one week. During the first class period, lecture and discussion took place on knowledge management and KIBPs. Subjects were then given an assignment to prepare a one-page, single-spaced, brief describing a KIBP in which they routinely participated in their own organization. In this brief, they were asked to identify key knowledge needs of the process and a KMS that facilitated the work. These briefs were collected during the next class period. A nominal grade (1.25%) was awarded for the assignment. During the second class period, subjects were asked to take a voluntary survey (described later). The subjects were asked to complete the survey focusing on the KIBPs and the KMSs they had described in their assignment. The decision to use both qualitative and quantitative data in this research was driven by the fact that we were uncertain of the scale items to be used to measure the KMS Support construct. We felt we could draw on the information provided in the briefs to define this construct. The effort put into coding the briefs (described below) will be used to develop quantitative scale items for the KMS Support construct.

Each qualitative brief was reviewed by three coders (the authors of this paper). Some examples of KIBPs and KMSs described in the briefs are: "a manufacturing equipment maintenance process supported by a KMS designed specifically for that purpose", "a tracking process for debugging involving Hardware, Firmware, Software, IT, Customer Support, and QA departments of a company supported by an Anomaly Tracking System", "the development cycles (process) of a multi-year ERP implementation supported by a vendor supplied KMS". Of the 63 subjects who participated in the two-part data collection, 6 responses were removed from the study because the coders seemed unclear whether the subjects had truly defined a KIBP and a KMS. An example of a process from those six removed subjects was the automation of the accounts payable process at a local enterprise defined as "…creating a payment and printing a check for vendor/payee at the end of the month-end close process." This is an example of a transactional process that was completely automated via the use of IT. This is not, however, a KIBP as it is not a business process that has embedded knowledge needs; neither is it made up of activities that require input of knowledge from knowledge workers, knowledge repositories, or knowledge experts (Robles-Flores and Kulkarni, 2005). The other 5 discarded briefs showed similar lack of knowledge needs or KMS support for the business process. Overall, 57 subjects' KIBP/KMS briefs and survey responses were used in this study.

Coding the KMS Support Measure:

The three coders independently coded the KMS Support variable from the qualitative data represented by the KIBP/KMS briefs. While coding, various aspects of the system were evaluated, including: KMS support for capture, storage, dissemination, and reuse; technology sophistication; extensibility of the system; type of collaboration the system allowed or encouraged; policies in place to support use of the system. The coding took place in two steps. In the first step, ten briefs were independently coded on a scale form 0 to 5 with 0 indicating that no KMS was present in the KIBP described in the brief and 5 indicating that a fully-integrated, purpose built, adaptable/extensible KMS was implemented and used as a matter of policy as an integral part of the KIBP. To complete this step, the coders met to compare results. All differences greater than 1 unit across all three coders were resolved and reduced to a maximum of a 1-unit difference across all coders so that all coders were working under the same assumptions. This same process was then repeated for the remainder of the briefs. The final score used for each KMS was the majority of the individual coder scores. The average score was 2.1 with a standard deviation of 1.31. Eight KMSs were scored zero while none were given a score of five. This information leads us to believe that knowledge management practices in industry are still very immature.

An example of a KMS that was scored 4 for KMS Support would be a service request handling system in an IT infrastructure support office. This system stores the history of all service request resolutions for future retrieval and reuse. There exists a set of policies for managing the severity/difficulty levels of the service requests. When historical service requests are referenced for reuse in the resolution of newly entered problems, the KMS tool tracks that usage. This is an example of a highly integrated system with multiple levels of users across the organization. This KMS was also used to easily and efficiently store, retrieve, and reuse organizational knowledge. A KMS that we scored 1 is a set of files, emails, and databases scattered across an IT project implementation office. Although the information is not integrated, employees know where to look for it and use it regularly - but very inefficiently - when developing new project plans, which convinced the coders to infer that it was barely a system.

Survey Instrument:

The three constructs of interest (BPM Maturity, KS Culture, and BP Effectiveness) consisted of 23 questions in the survey. The constructs were derived from instruments used by other researchers. Our confirmatory factor analysis revealed that these scale items loaded onto the three separate factors as expected.

Business Process Management Maturity – How well the organization manages its business processes.

Please indicate the extent to which the following statements apply to your organization.

Work processes are **documented** and **kept up to date.**	**0 1 2 3 4 5**
Units that perform **similar activities** use **similar processes.**	**0 1 2 3 4 5**
Standard measures are defined for evaluating the performance of major processes and subprocesses.	**0 1 2 3 4 5**
Process **automation tools** are selected to be **consistent** with the defined processes used in the organization.	**0 1 2 3 4 5**
Skills needed to perform the tasks in the major processes are **defined.**	**0 1 2 3 4 5**
Training required **to manage** major processes is provided.	**0 1 2 3 4 5**
Process managers use **performance data to manage** their processes.	**0 1 2 3 4 5**
Process improvement programs are in place to identify and address problems and defects.	**0 1 2 3 4 5**

Figure 2 – BPM Maturity Survey Instrument

The Business Process Management Maturity construct (

Figure 2) was taken from Wolf and Harmon's Organizational Maturity and Business Performance construct which was intended to measure how well businesses have mastered and formed common business process activities as part of a survey on the overall state of Business Process Management in enterprises around the globe. Their survey demonstrated results that corresponded to other commonly used broad measures of organizational process maturity (Wolf and Harmon, 2006).

Knowledge Sharing Culture – What value the organization places on knowledge sharing.

In my organization:

Employees **understand the importance** of knowledge to corporate success.	0 1 2 3 4 5
High levels of **participation is expected** in capturing and transferring knowledge.	0 1 2 3 4 5
Employees are **encouraged** to **explore and experiment.**	0 1 2 3 4 5
Employees are encouraged to **ask others for assistance** when needed.	0 1 2 3 4 5
Employees are encouraged to **interact with other groups.**	0 1 2 3 4 5
Overall organizational **vision** is clearly **stated**. Overall organizational objectives are clearly stated.	0 1 2 3 4 5
The **benefits** of sharing knowledge **outweigh** the **costs**.	0 1 2 3 4 5
Senior management clearly the role of knowledge in the firm's success.	0 1 2 3 4 5

Figure 3 – KS Culture Survey Instrument

The Knowledge Sharing Culture construct (Figure 3) was taken from Gold, Malhotra, and Segars' Cultural Knowledge Management Infrastructure construct. This construct was used to measure how well corporate vision and values supported KM and how well those values and vision were communicated throughout the organization. The use of this instrument led to their finding that an organization's knowledge sharing culture is a major contributor to the organization's knowledge management capability (Gold, Malhotra, and Segars, 2001).

***Business Process Effectiveness* – How well the overall BP functions.**

I believe that the presence of the KMS in the business process environment has:

Improved overall business process **performance**.	0 1 2 3 4 5
Increased the **output** of the business process.	0 1 2 3 4 5
Enhanced the ability to **meet the goals** of the process	0 1 2 3 4 5
Improved the **quality** of the business process outputs.	0 1 2 3 4 5
Reduced the **cycle time** of the overall business process.	0 1 2 3 4 5
Reduced the **variability** in business process measures.	0 1 2 3 4 5

Figure 4 – BP Effectiveness Survey Instrument

The BP Effectiveness construct (Figure 4) was derived from prior research measuring knowledge management success. These measures were generalized from more specific measures of project success (Henderson and Lee, 1992). We applied a similar concept mapping to derive more generalized questions for our instrument. For example, we combined Henderson and Lee's separate questions on project budget and schedule adherence into one question regarding measures of variability of business process measurement.

ANALYSIS

The primary goal of our analysis is to discover the moderating effects of environmental variables on the introduction or improvement of a KMS. We used a confirmatory factor analysis (CFA) approach with LISREL software v.8.72 to analyze our structural equation models. The maximum likelihood estimation method was chosen because of its ability to provide good estimations with small sample size (N < 250) (Hu and Bentler, 1998).

To investigate the moderating affects of the selected environmental variables and estimate the resulting interactions in our model, we used the Ping (1995) method as described in Cortina, Chen, and Dunlap (2001). The two-step Ping approach to modeling interaction effects was chosen because it is a straightforward approach, both conceptually and operationally, and because it has been shown to be as effective in recovering parameters as other, more elegant solutions (Cortina, Chen, and Dunlap, 2001). This approach is a two-step analysis process performed on centered data. The first step involves running the base model with no interactions in order to provide information necessary to calculate the loading and error terms for the single-indicator of the interaction products (e.g., kmsbpm). The second step involves running the entire model (Figure 5) which includes the base latent variables (BPM Maturity, KS Culture and KMS) and the hypothesized interaction variables (KSCxKMS and KMSxBPMM). The scale items for the interaction variables are the products of the sums of the scale items of the interacting base variables (KMS and BPM Maturity for kmsbpm and KMS and KS Culture for kmsksc). The scale item loading of each interaction variable is fixed to the product of the sums of the scale item loadings of that interacting latent variable. The error term for each scale item of each interaction variable is fixed to a value determined by solving a non-linear equation. This equation involves the error terms and loadings from the scale items of the interacting variables. The scale item data input for each interaction variable were calculated as the product of the sums of the scale items of the interacting variables and added to the input data set. A more detailed explanation and LISREL example is available in Cortina, et al. (2001).

After centering the data, we began our analysis with the base model consisting of the four latent variables (KMS Support, BPM Maturity, KS Culture, and BP Effectiveness). No interaction variables were included since the base model is used to confirm that adequate loadings for all base constructs exist and must be run to get the estimated loadings and error terms needed to calculate the parameters of the single-item interaction variables. The base model provided satisfactory results with excellent factor loadings for all scale items and overall good model fit statistics. The second analysis was then performed on the expanded model containing the interactions of interest (KMSxBPMM and KMSxKSC) to test the structural equation model. Similar fit statistics were achieved with the expanded model and are summarized in Table 1. Values greater than 0.9 for NNFI and CFI indicate a good model fit (Hu and Bentler, 1998). RMSEA values less than 0.10 indicate good fit (Kelloway, 1998).

Fit Statistic	Base Model	Expanded Model
R-squared Mulitple (Variance Accounted For)	0.41	0.51
Root Mean Square Error of Approximation (RMSEA)	0.093	0.096
Non-Normed Fit Index (NNFI)	0.95	0.93
Comparative Fit Index (CFI)	0.95	0.94

Table 1 - Model Fit Statistics

We used the expanded model to answer our research question. To test our hypotheses, we examine the path coefficients for the two interaction variables KMSxBPMM and KMSxKSC. The path coefficient for KMSxBPMM has a value of –0.31 and is significant at the $\alpha < 0.01$ level. The coefficient for KMSxKSC is 0.25 and is significant at the $\alpha < 0.05$ level. The statistical significance of these coefficients supports our hypotheses: An organization's knowledge sharing culture and business process maturity both have moderating effects on the impact a KMS has on BP Effectiveness. The addition of the interactions to the base model also accounts for approximately 25% more of the variance in the KMS' impact on BP Effectiveness than did the base model ($r^2_{expanded} = 0.51$, $r^2_{base} = 0.41$). These findings indicate that the interactions modeled in this research should not be ignored while examining a KMS' impact on process effectiveness.

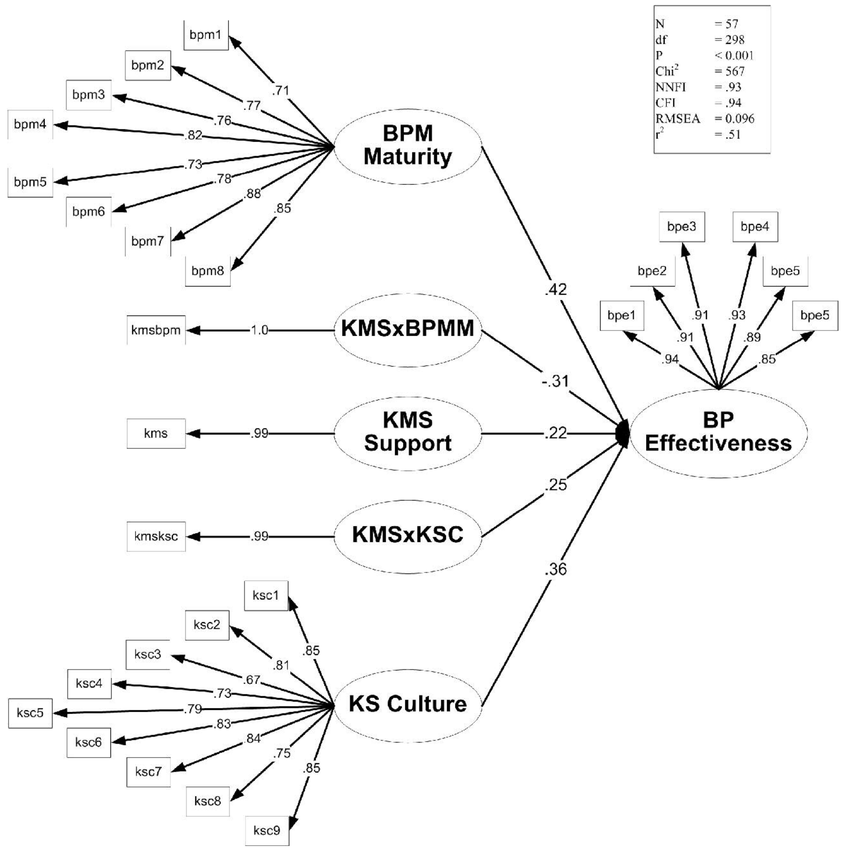

Figure 5 - Expanded Model

DISCUSSION

The primary goal of this research was to improve the explanation of how organizations can enhance the effectiveness of knowledge intensive business processes. The results of our analysis indicate that we have improved upon existing explanations. Improved explanation was indicated through a two step process showing the increase in explained variance from base model to the expanded model. The base model measured only the direct effects on BP Effectiveness of KMS Support, Knowledge Sharing Culture and the organizations' Business Process Management Maturity. The expanded model explained more of the variance in BP Effectiveness by additionally measuring the moderation of KMS Support by the Knowledge Sharing Culture and the organizations' Business Process Management Maturity. Although model fit essentially did not change, we saw that the addition of the interaction terms in the expanded model resulted in a 25% increase in variance accounted for.

The improvement in explained variance between the two models indicates that organizations introducing knowledge management systems without regard to the existing organizational environmental conditions may not experience improvement in process effectiveness. This is also true when taking into account the current process maturity and knowledge sharing culture of an organization. Prior research has often indicated mixed results as to successful KMS implementation and provided explanations for this lack of success due to their deficiencies in knowledge sharing culture or the need for higher levels of process maturity. This investigation provides evidence of these theoretical implications through the empirical testing of our two hypotheses postulating moderating effects on KMS impact on process effectiveness.

H1 investigated the moderating effect an organization's process maturity level has on the KMS's ability to impact process effectiveness. The existence of a moderating affect was indicated by our expanded model. However, the negative coefficient was not consistent with the expectation that higher levels of process maturity would leverage a KMS to further improve process effectiveness. This negative coefficient may be explained by the phenomenon of diminishing marginal returns. As an organization improves its process maturity, improvements in KMS support levels will generate smaller increments in process effectiveness. That is, if an organization possesses high levels of business process maturity, their processes (including those that are knowledge intensive) may already be highly effective. In such cases, introducing a new KMS may have marginal (positive) improvement. The negative path coefficient suggests support for this speculated reduced rate of return.

H2 investigated the moderating affect an organization's knowledge sharing culture has on the KMS's ability to impact process effectiveness. The existence of a moderating affect was indicated by our research model through the confirmation of a significant and positive path coefficient. This implies that the existence of an organization's knowledge sharing culture preconditions the ready acceptance of improvements in the level of KMS support. Alternatively, the investment in a KMS can be leveraged by improvement in an organization's knowledge sharing culture. Ultimately, these investments result in improved process effectiveness.

Managerial Implications

These results provide several indications for managers when planning for improvements in KMS support with the intent to improve the effectiveness of their processes. The first implication is that managers should not expect that improvements in KMS support will, by itself, improve their process effectiveness. Assessment of other organizational conditions must be taken into account. Both knowledge sharing culture and current process maturity are important to consider when improving KMS support. Each condition will result in potentially different responses and therefore, when implementing KMS support improvement need to be managed accordingly.

Managers should set expectation levels differently for high and low levels of current process maturity. Our research has indicated that higher levels of process maturity may result in a smaller return from KMS investment than will lower levels of process maturity. However, improving low levels of knowledge sharing culture within an organization prior to investing in KMS improvements will allow much greater improvements in process effectiveness than will occur if the investment is made while an organization has a weaker knowledge sharing culture. When investing in a KMS, the greatest improvement in process effectiveness will be achieved through high levels of knowledge sharing culture.

Limitations and Future Directions

Two limitations in the current research could restrict the validity of the results obtained. The first limitation concerns the sample size used in testing the research models, as well as the fact that the majority (about 70%) of our respondents had IT related responsibilities. The demographics may have induced some bias in their qualitative descriptions of their KMSs. The second limitation concerns measurement issues related to the KMS Support construct.

The initial sample size of 57 is considered to have provided a rich sample due to the respondents' organizational responsibilities and the fact that they represent 38 different organizations. However, the researchers realize that further confirmation of this research is necessary in a much broader sample. Currently, we are reviewing data that will more than double our sample size, include non-IT related responsibilities and increase the industrial cross-section of the study. This combined sample and the broader cross-sectional nature of the respondents can provide significant additional evidence as to the existence of moderating effects on KMS' ability to affect process effectiveness.

The measurement issue relates to KMS Support construct being measured as a single item variable and the need for a broader analytical representation. The method adopted for the KMS scale item was rigorous and consistent. However, the measurement of this construct can be improved by developing multiple scales to evaluate KMS support for capture, storage, dissemination and reuse of knowledge, as well as its technology sophistication etc.

Addressing these two limitations is the first priority for our future research. The opportunity also exists to consider the inclusion of other constructs in our model that may or may not moderate KMS improvements in an organization and help explain more of the variance in process effectiveness. Another interesting question to investigate would be the examination of explanations for the negative path coefficient encountered for the BPM Maturity moderation of the KMS Support construct. We have proposed one such explanation that still requires validation. While what we've suggested might seem plausible, other explanations might exist.

CONCLUSION

The effectiveness of knowledge intensive business processes is a complex organizational issue that directly impacts the success of an organization. This research has presented results supporting the moderating effects involved in explaining process effectiveness. Improvements in KMS support can be leveraged by a receptive knowledge sharing culture. In addition, managers need to assess their current process maturity in order to set accurate expectations as to the results that can be obtained from KMS improvements.

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