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KM Value Creation: Evidence from a case.

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Abstract

One of the fundamental knowledge management questions is how organizations can use their knowledge to create value. There is general agreement that knowledge management should add value. It is not clear, however, what value means in the context of knowledge management and how it is created. This fundamental question is complex as value has different meanings to different people. Understanding value in the context of KM will lead to better understanding of the potential sources of value creation from knowledge management and better management of knowledge assets. It will inform the measurement of knowledge and its impacts on organizations. It will lead to recognition of the contribution of knowledge assets to organizational success.

This paper provides a review of prior research on value creation and how this can improve the understanding of value in the context of knowledge management. Based on this review it poses questions to explore value creation in the context of knowledge management. It then reports on preliminary analysis of a case study of a process-based knowledge management system and the expressions of value, value creating actions and value capture as perceived by different stakeholders.

Keywords

Knowledge management, value creation, KM systems, KM value

INTRODUCTION

The 21st century is a knowledge economy and knowledge workers are the most valuable asset of organizations (Drucker, 2000). Knowledge is needed to deal with complexity, to provide value-added services and to encourage innovation. There is potential to achieve sustainable competitive advantage by utilizing and renewing the knowledge within the organizations (Prusak, 1997). Knowledge Management is an approach that was developed to leverage this new core resource. Knowledge management (KM) aims to help employees effectively create, share and utilize knowledge to enhance the organisation's knowledge (Jashapara, 2004)

The aim of knowledge management is to leverage knowledge as a strategic asset to gain and sustain strategic advantage and to create value for organizations. There are many different approaches to knowledge management on the continuum between strong technocratic to predominantly humanistic approaches. Based on the definition of knowledge as a unique and inimitable resource most studies in KM start with the assumption that KM projects and initiatives create value. However, there is concern that KM has generated a lot of interest and investment but in some cases no real value (Davenport&Prusak, 1998; Spender 2006). Therefore, there is a need for identifying the value of KM initiatives to provide organizations with a basis for decisions on KM investments.

Current research suggests that value is a multi-faceted and complex notion and has different meanings to different stakeholders (Bowman and Ambrosini 2009, Pitelis 2009). This paper overviews the main categories of value and the activities related to value creation and value capture. Defining value in the context of KM will lead to better understanding of the potential sources of value creation from knowledge management and to better management of knowledge assets. It will inform the measurement of knowledge and its impacts on organizations. It will improve to recognition of the contribution of knowledge assets to organizational success (Boudreau, 2003 p 361). Therefore, the purpose of this paper is to investigate the sources of value creation at the organizational level and to improve our understanding of value in the context of knowledge management initiatives.

This paper provides a comprehensive literature review investigating the potential sources of value for KM initiatives and where this value is captured. First, the paper outlines prior research to define the concept of value and how value is created in organizations. As knowledge management systems are predominantly IT-based, the review of the literature also reports on advances in the area of IT value. A discussion follows as to how the findings from prior research can be applied in the KM context and the questions that need to be addressed. The main themes identified from the current

literature on value are then used to present preliminary results from a case study of a process-based KM system in a large financial institution.

PRIOR RESEARCH ON VALUE CREATION

The Concept of Value

In order to understand the process of value creation from KM systems, it is important to understand what value means. Value is a concept that is not well understood and there is no agreed definition in the KM literature (Fischer et al 2011). It is linked to concepts such as intellectual and human capital, technology use and success, organizational learning and performance. It is also linked to tangible and intangible benefits. There are many perspectives of value and the literature refers to different phenomena. (Vorakulpipat and Rezgui, 2008; Kulkarni et al, 2007, Lavergne and Earl, 2006). This debate on the notion of value is not new. It has been the focus of intense discussions in the areas of philosophy, economics and strategic management (Pitelis 2009). This paper aims to build on prior research in these areas and use them to organize and integrate the existing KM literature.

Classical economics distinguishes between two main aspects of value: *use value* and *exchange value* (Bowman and Ambrosini 2000). Use value refers to the perception of users of the quality of a product or a service as compared to their needs. Use values (UV) are properties of products and services which provide utility. Use value is a subjective measure as it is based on the perception of worthiness (Pitelis 2009). Exchange value refers to the monetary amount that the user pays to the seller for the use value. So, organizations *create* perceived use value and when products are sold they *capture* exchange value.

Bowman and Ambrosini (2009) distinguish between the use values of separable and human inputs. Separable inputs exist separately from people and include materials and machinery owned by the organization. These inputs hold a utility value but they cannot self-expand, they cannot create more value than what they already embody. Human inputs are in the form of performed services or activities and the utility values of human inputs can also include the capabilities of employees to perform tasks based on experience and learning. Human inputs have the ability to create new utility values. For example, employees can derive new ways of deploying separable inputs and this newly created value is attributed to the human inputs.

Value and Resource Based Theory

Value is a central concept to the resource based view and the related knowledge based view of the firm. The resource based theory of the firm views an organization as a bundle of resources and it focuses on the resources that the organization needs to create value. The main source of sustainable competitive advantage lies in resources that are valuable, rare, imperfectly imitable and non-substitutable (Bowman&Swart 2007). Valuable resources that are unique generate economic rents (Noe, Colquitt, Simmering, & Alvarez, 2003 p 227). To generate rents, a resource must contribute to a product or service that has use value or utility to internal or external customers.

Value from the perspective of different stakeholders

Lepak et al. (2007) suggest that the degree of perceived value by a user depends on the perceived novelty and appropriateness of the product or service. The novelty and appropriateness of a product or service will be evaluated differently by different users depending on their level of knowledge of the product and the existing alternatives, and the meaning of the new product/service in their context. An important implication of this definition of value and its subjective and context-specific nature is that there will be competing views on what is valuable among different users of value.

The main stakeholders are customers, suppliers of separable and human inputs and the owners of the firm. Customers aim to maximize the use value they get from a product as compared to the exchange value they have paid. Suppliers of separable inputs provide a use value for their products and receive an exchange value in return. Therefore, they aim to maximise their exchange value. Suppliers of human inputs also receive exchange value for their capacity to work. However, they do not necessarily aim to maximise only the exchange value they receive as they may be more engaged with the firm and may be motivated by more than a monetary gain. The firm acts as both a customer and suppliers of use values. As a customer, it will aim to optimize the use value of inputs for the exchange value they have paid. As a supplier it aims to optimize the exchange value captured from customers for the use value they have provided.

Value creation activities

Value creation activities produce new use or exchange values. As discussed earlier, new use values can only be created by human inputs into the process. Exchange values are only realised when a sale is completed. Porter (1985) states that companies create new value when they find new ways of doing things by using new technologies, methods and raw materials. These could be activities that optimise the use value of inputs/ resources such as procurement, activities that

improve production efficiencies. The innovation process changes or establishes new valuation of the use or exchange value of the product or service. Lepak et al (2007) argue that value creation processes include all activities that provide a greater level of novelty and appropriateness of products and services than the users already have. The primary activities of a value chain create use values or services that produce new revenue for the firm.

Other activities create value through creating new capital stocks. These activities are funded through exchange value streams or investments. They help to preserve current stock in a changing environment by updating and refreshing it. Such activities include research and development, learning from reflection or from interactions with customers. Also, they can extend the stock by creating new resources (Bowman and Ambrosini 2009). These activities aim to produce future exchange values for the firm but in the short term require use of existing exchange value. They can also produce intermediate use value for the firm.

Dynamic capabilities are also activities that create capital stock. Dynamic capabilities are the abilities of the organization to create, integrate and release resources. Creation of new resources can occur through reconfiguration, leverage, learning and integration of existing resources. The HR management literature contributes to this stream of value creation by examining the role of management practices to motivate employees and build up their skill in order for them to achieve organizational goals and thus create value.

Finally, Bowman and Ambrosini (2009) consider activities which maintain the existing stock and value destroying activities. The former are expenditures that are necessary but the later are not related to present or future use or exchange values. Value destroying activities incur expenses that do not contribute and have a negative impact on competitive advantage. Organizations aim to eliminate such activities to improve the value they capture.

IT and value

Most knowledge management initiatives in organizations are supported and enabled by information technology and this section focuses on current IT value research and how that can improve our understanding of KM value. The current research in IT examines how the application of IT impacts organizational performance and how to measure these impacts. In recent years, there have been a number of studies confirming that IT can contribute to improvements in organizational performance (Melville et al 2004, Kohli and Grover 2008). Studies consider as performance business process performance and perception-related performance as well as financial performance. Therefore, IT value is represented in different forms and at different levels.

The majority of studies on IT value are based on the resource-based view (RBV) of the firm and recognize that IT by itself and in isolation does not generate value (Nevo and Wade 2010, Kohli and Grover 2008). It creates value only in certain conditions and when there are certain combinations of mediating factors. Melville et al (2004) point out that a major limitation of the RBV is that it assumes the best use of resources and it does not study what such best practice might be. Thus, the path from the IT asset to performance remains a black box. It assumes a synergy between the IT asset and other complimentary IT and organizational resources such as culture, structure and business processes. Such synergy however may not be realized without the presence of enabling conditions. Researchers have emphasized the lack of study of these paths that lead to economic value and how we enable them (Kohli and Grover 2008). One of the issues in assessment of IT value is that it is difficult to attribute the value generated by IT investments. This is due to the subjectivity of primary data, lack of reliable secondary data and appropriate proxies. Therefore, “how” and “why” questions remain understudied. Kohli and Grover(2008) conclude that what we currently know about IT value is that IT and its complementary resources can create value on many levels and while we cannot prove the causality, we can extend our knowledge on mediating factors in the value creation process (Fig 1).

IT INVESTMENTS

IT Resources
 (human and
 technological)

MEDIATING FACTORS

IT and organizational
 complimentary resources
 Organizational capabilities
 IT-Strategy Alignment

IT-BASED VALUE

IT intermediate value (such as
 process improvement)
 Perceived output value (such as
 customer service)
 Financial value

Fig. 1 Schematic of “What we know” (adapted from Kohli and Grover (2008))

Current research has concentrated largely on financial post hoc metrics as representation of value and these metrics have not been able to capture the true value experienced by businesses and customers. Researchers have called for broader representation based on observations of practice of IT value from pure financial value to other “intangible” value to all stakeholders such as agility, flexibility and customer service. In other words, there is need to identify use values and value creating activities in the context of IT.

Value of Knowledge Management Initiatives and Systems

The preceding sections have identified that there are different aspects of value such as use and exchange value. Organizations have separable and human resources which hold use and exchange values. Human resources can self-expand; they can use the separable inputs to create new use values. Different stakeholders view the values of the same resources in different ways. Value creation activities are associated with creation and capture of value.

KM value assessment is a very new and emerging field and there is not even an agreement as to what constitutes a successful KM initiative and what performance indicators should be measured to assess the value of KM systems (Benbya 2010; Fischer et al 2011). Many terms are used to represent value and these include internal performance measures such as successful KM implementation as well as external performance measures such as cost savings, quality of decision making, customer service improvements. Many of these performance indicators such as implementation success do not necessarily guarantee value capture or creation of use values. There is no definition of KM value, the few models that exist are at the conceptual stage and of a very generic nature and none of them are empirically supported (Fischer et al 2011). Most models concentrate only on the outcomes such as performance of KM initiatives without considering the capabilities and processes that help to achieve this performance. Most studies deal either with knowledge as a strategic asset or with the benefits or outcomes of KM initiatives.

Measurement of KM value particularly difficult is the elusive and intangible nature of knowledge (Fischer et al 2011). Knowledge management efforts are based on the assumption that the knowledge that individuals possess and create has value (Alavi and Leidner 2001). One stream of KM literature focuses on knowledge as a key resource that improves organizational capabilities and performance. Knowledge based view of the firm based on supports that knowledge is a strategic asset but there are no studies that provide evidence of its value. Studies based on the KBV take the objectivist view of knowledge.

The objectivist view of knowledge regards it as an object or entity that people possess but it can exist independently and can be codified (Schultze and Stabel 2004). This explicit knowledge is free from individual subjectivity and therefore superior to tacit knowledge which is very difficult to articulate and embedded within the individual context of beliefs and assumptions. (Jakubik 2007, Hislop 2009 p 19). Knowledge is perceived as commodity. Many studies which use the knowledge-based theory of the firm adopt this view on knowledge and make assumptions that knowledge can be quantified and objectively measured through quantitative methods.

Objectivists view tacit and explicit knowledge as distinctive and separate types and the sharing of these two types is completely different. Sharing of explicit knowledge is easy and its only requirement is a communication channel (Szulanski, 1996). Based on this assumption, the starting objective of knowledge management is to identify what tacit knowledge is important and convert it into explicit knowledge. Once all knowledge is in explicit form, the objective is to store it in a central repository which can be accessed by all. Typically technology plays a central role in such projects.

The social or community view of knowledge assumes that knowledge is a social construct which is not static (Jakubik 2007). It is embedded within processes and day to day practices. It is based on the assumption that practices consist of both physical and cognitive elements and they are inseparable (Orlikowski 2002).

This view considers knowledge as a process, not an object. In addition, it contradicts the objectivist view as it assumes that knowledge is constantly changing as people perform various activities. The view does not consider tacit and explicit knowledge as separate but as two sides of knowledge. Tacit knowledge is the necessary background that allows the interpretation and development of explicit knowledge. This link between tacit and explicit knowledge implies that only individuals with sufficient common knowledge base can exchange knowledge, understand each other and correctly interpret the exchanged knowledge. This view limits the impact of IT on knowledge sharing (Alavi and Leidner 2001).

Based on these main assumptions the social view concludes that knowledge sharing requires a mutual understanding of tacit assumptions, immersion in practice and social interaction. It places strong emphasis on management and leadership practices to support social interaction and trust. While technology can still play a role, it is focused more on connection people to people rather than people to explicit knowledge.

Different perspectives of knowledge define different approaches to knowledge management. When knowledge is viewed as an object the focus of KM initiatives is on building knowledge stocks and providing access to them. When knowledge is viewed as a process, the focus of KM is on knowledge flows and supporting the creation and sharing of

knowledge. Finally, when knowledge is considered as a capability, KM initiatives aim to build competences, gain strategic advantage from know-how and create intellectual capital (Alavi and Leidner, 2001).

The studies on KM value are very fragmented. If we consider the value models from the previous sections, these studies focus on only one part of the models- outcomes, resources or capabilities in terms of enabling sharing and retrieval. It is very important to consider value in the context of knowledge, IT and other organizational resources required to derive value from KM initiatives and the paths that are taken to produce this value. The following case study aims to explore expressions of values as viewed by various stakeholders and gain insights on the activities that create value.

THE CASE STUDY

This case concerns a collaborative system for approval of lending to commercial customers of a large financial organization which in this paper will be called Bank1¹. It has been implemented for three years and there has been sufficient time for users to get used to it and for values to be realised. It is only used in the division that caters for business customers. Bank1 have invested considerable resources in the development, implementation and improvement of the system.

The case study material was collected from semi-structured interviews, documentation and training sessions. The interviews involved at least two representatives of each stakeholder groups including junior associates, business managers, senior credit managers, business system managers and information technology analysts. All interviews have been transcribed and validated and initial open coding has been performed. The aim is to understand how the participants view the collaborative system and their interaction with it and what their perspectives are on the value that it creates and the value that is captured. This section presents the case setting and some preliminary results.

Background

Bank1 is one of the largest banks in Australia and New Zealand and operates in many countries in the world. It was formed in 19th century and owns several subsidiaries. It provides a full range of financial services to retail, business and rural customers. The business division caters for small businesses and large institutions.

The focus of this study is a collaborative document authoring and management system, which supports the credit and relationship management of business customers. The business managers negotiate the terms and conditions of lending including securities and covenants. The business managers have a direct relationship with their business customers; they regularly review the credit agreements and respond to queries and requests for advice and changes. The clients are allocated to the business managers based on their current load and are not necessarily in the same geographical region. The associates support the business managers and sometimes communicate with clients to request information or provide clarifications on communications. Business managers have the discretion to negotiate loans up to a certain amount and also to approve reviews based on conditions. When the conditions are not met or the amount for the loan is above the discretionary threshold, the senior managers need to approve it. All lending documentation and conditions need to be approved by the senior managers. In some cases there are 2 or 3 levels of senior managers who need to approve decisions and documentation. In addition to financial data, business managers need to provide their assessment of risk, personal notes on the customer and their justification for the decisions on credit limits and conditions. Very often the senior managers would request further clarifications and explanations and sometimes they will request specific changes. If during a regular review the customer does not meet certain conditions that have been negotiated or their financial situation has been adversely affected, they are advised and supported by risk managers who also negotiate new terms and conditions.

Prior to the introduction of the Credit and Relationship Management System (CReMS), all participants used Word and Excel documents which were not shared. These documents were printed out and faxed or couriered to senior managers and risk managers. They will write comments and recommendations by hand on the hard copies, attach further documents and then the bundle of new documents will be sent to the next person who participates in the decision. This pile of papers "up to an inch thick would be physically moving around". Various versions of documents will be circulated and sometimes the most up-to-date version will not be the one that is used to draw up the final contract. In addition to the physical documents there were sometimes email exchanges between senior managers, business managers and associates that were sometimes printed out and attached to the file. Sometimes there were phone conversations on

¹ The name of the bank, job titles and bank department names have been altered to preserve confidentiality.

what needs to be done and if in the process the business manager is sick or leaves and someone picks up his job, “they will be none the wiser and have to start all over again”.

The main reason for the initiation of the CReMS is that a review of practices in different areas and departments revealed that there were many different ways in which business managers performed the same processes. In the context of the lending process, some managers would ask for different securities covenants, they would have different ways to assess the risk. As a result, there were significant variations in how well documented and justified decisions were, the conditions that would be attached to the same type of credit and the time that it took to provide service to customers. The review discovered over 40 different templates that managers were using. A team reviewed all the templates and met with focus groups to identify best practices. The CReMS has preset templates with headings and sections prompting the user to fill the correct information. Some of the sections are purely factual and require financial and historical information on the customer, the industry risk factors and codes. However, some of the sections require the business managers to present their assessment of the situation and justifications of their recommendations. The justifications are based not only on their assessment of the risk based on the information but also on their personal knowledge of the customer and their circumstances. There are also sections for the senior managers to add comments and request clarifications and changes. These notes are saved in a log that is part of the history of the document. Also, the system acts as a customer relationship system. Business managers record separate notes when they have had a communication with the customer, including phone conversations and meetings. A lending document is a living document and changes can be made and logged until the final decision is made. Then the document is locked and nobody can make any alterations. Everyone in the bank has access to current and past documents unless they are deemed particularly sensitive.

Preliminary case findings

The aim of the case study was to gain some insights and understanding of the value perceived by different stakeholders, how value was created and where the value was captured. The data collection started with two sessions with a business systems manager who explained how the system works, showed me a few examples and provided me with a background. He also explained the roles of the participants in the process. The first two interviews were with a senior manager and a junior associate. The first impression of these interviews was that they were discussing a very different system. With each new interview, consistent themes emerged and also some conflicting interpretations of the use and exchange values. This section will briefly outline the main perspectives on value expressed by different stakeholders.

The preliminary coding resulted in generation of over 20 main themes which show that values generated by CReMS fall into the following major categories: efficiencies; improved customer service and relationships; learning and collaboration; effectiveness; strategic response and compliance and risk reduction. Within each category participants may discuss similar scenarios or themes but have very different perspectives on what value is generated by the same capability.

All interviewees discussed the **efficiencies** and savings in cost that were achieved by the electronic access to current and past documents. There was no need to fax and courier documents which saved time and postage costs. Also, the standardisation of some of the legal conditions had led to reuse of a limited number of conditions and saved time. The shared access also allowed a more even distribution of case loads at any time. If a business manager has too many requests in their queue, another business manager from anywhere else in the country could pick up the new loan request and work on it. The electronic access also allowed for parallel processes.

These efficiencies were interpreted differently in terms of impact. The technology representatives and one of the junior associates viewed these efficiencies as reduction in cost, being able to invest less to produce the same service. The junior associates appreciated the ability to reuse documentation to save time. The business and senior managers viewed this as a major improvement in customer service and a necessary competitive response to “customer pressures”. One of the business managers states that “it used to be that a week to give a client an answer was satisfactory; now they want 24 hours...the competition out there, we have to keep up with it”. Another manager stated that “it is a different world and there is continuing evolvement”. Business managers also stated that they have more time to interact with customer and “do the real job”.

Shared access was consistently stated in terms of providing increased **learning capacity** for the organization and improved **individual expertise**. As all documents are available to everyone, business managers reported that they searched the documents to find previous cases within a particular industry if they have just started working with a new client. This gave them insights in the requirements of this particular industry. Junior associates stated that they proactively searched for documents created by their immediate superiors to understand better their expectations in terms of preparing the documents. They also mentioned that they would ask about examples of really good case documents so that they “can learn from the best”. A former training manager mentioned how much easier it is to train new staff now as they have compulsory training in the system and through that they also learn about the processes. On a slightly conflicting note, one of the senior managers expressed disappointment at the unrealized potential value of the system as it should explain better and prompt what associates should fill in the free text sections. According to him, this created

more communication with them to explain and request for revisions. He did not think that any of them looked at other documents to learn. The system analysts saw the access to other documents as negative and considered it a security risk. They did not think that anyone would access other documents for a "good reason" and could not understand why some people had insisted on it.

Requests for revisions were mentioned by most interviewees but again there were different perspectives on their value. A business manager or a senior manager can request changes and revisions. Those are recorded in the system and become part of the final document. Some participants saw them as a **knowledge sharing and learning** mechanism as they allow all actors to have shared understanding of what is required and provide clear feedback. They are kept in the history logs and associates and business managers can access previous cases and review the requests for revisions and learn from them. Junior associates saw positive value in this information as they could judge which business managers "are really good at writing the documents" if there were not many requests for revisions. Another associate mentioned that she uses the revisions requests from her previous cases to remind herself of some potential mistakes. However, some interviewees perceived this history as monitoring performance tool. They are aware that the number of requests for revisions for each team/person are recorded and that these can be used to assess performance. Some participants found the comments embarrassing and one senior manager stated that she has to call some people and let them know by phone if they need to make revisions so that it will not be in the system and they "will not be upset". Senior managers saw **positive learning value, improved organisational knowledge and individual performance**. The statistics on requests for revisions were used to identify the most common issues and further training and mentoring was provided to address these issues. There were notable improvements after these exercises.

One of the first values expressed by senior managers was that the systems allowed the assurance of consistent standard practices which **reduced** inefficiencies and most importantly **risks** of making the wrong decisions or presenting the wrong versions of the documents to the customer. Also, it allowed more transparency on how decisions were made and the ability to comply with reporting requirements imposed by external bodies. This value was not discussed by most of the business managers or the associates even though this was the original reason for creating the system. Such lack of awareness of value generated by CReMS was often demonstrated by various groups. It affected their overall perception on the importance of the system and some of the features and capabilities incorporated in it.

Even though there were no specific questions related to **factors affecting the perceptions of value**, some participants discussed what influences their perceptions. Interestingly, two interviewees stated that previous experience with other systems had a negative effect on realising the value from the system as people tried to stick to what they used to do and work around the system. One of the associates stated that she could get more out of the system as "she has not used any other system". Conversely, one of the senior managers stated that his extensive experience has helped him to "get the most out of the system" as he understands what the different sections are. The implementation strategy was another common factor cited by many interviewees. Some participants cited that the specific date to start using the new system affected positively the generation of value as "it forced us to start using it rather than giving us the option to use paper and or CReMS...that was a good thing". However, the fact that the system was implemented "as a living system" without much changing had a negative effect on the value perceptions. There were many technical issues at the beginning which discouraged some employees from using it to its full potential.

Some business managers found creative ways to use the system to generate **new exchange values**. One of the senior managers stated that he collaborates with the sales team within the organization and they used his documents to identify what other products or services they can offer to his customers. This relates directly to capture of exchange value at organizational level. It demonstrates how the interaction of a human input with a separable input can create new value. Collaboration was discussed by most of the other interviewees as they mentioned that now that their processes were aligned with the terms and requirements of other units, they found it easier to collaborate. Also, the access to all documents allowed them to identify individuals that they can call if they need help in a particular situation.

CONCLUSIONS

This paper reviews the literature on value in the areas of economics, strategic management and IT to identify some common themes and to clarify the concept of value and value creation. Value is captured in stocks and capital and human capital can create new use values by interacting with separable inputs. In addition to exchange value or profit, there are other important use values that are created within the organization. These values are subjective and perceived differently by different stakeholders.

The preliminary results show examples of both separable stocks such as explicit knowledge incorporated in the process based system and human capital expressed by the experience, firm-specific knowledge of employees and their ability for innovation. It also shows that the KM initiative generates use values such as improved customer service, competitive response and engagement.

Even though the analysis is still in initial stages, the findings of the case study demonstrate the difference in perceptions of use values and the lack of awareness from some stakeholders of actual and potential value. This is really important as it influences the decisions on the design of a KM system and initiative and the perception of its overall value.

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