A KNOWLEDGE MANAGEMENT PERSPECTIVE ON CORPORATE PORTAL
Processes and Benefits

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Abstract: This pilot study examines a corporate portal from a knowledge management perspective by identifying the impacts of several corporate portal tools that support organizational knowledge management processes (such as acquisition, conversion, application and protection) on organizational processes (such as efficiency, effectiveness and innovation) and people (such as learning, adaptability and satisfaction). Preliminary analysis based on academic staff utilization of a corporate portal in a local university in Oman shows that providing tools through corporate portals that support knowledge conversion improves the effectiveness and efficiency of the organizational processes and people's learning, whereas providing tools that support knowledge applications improves the effectiveness of organizational processes as well as people learning, adaptability and satisfaction. Thus, the analysis indicates that knowledge conversion impacts organizational processes more than people, whereas the knowledge application impacts people more than organizational processes. Offering tools that support knowledge protection also improves the effectiveness of organizational processes. However, the preliminary analysis shows that knowledge acquisition process has no impact on organizational processes or people.

1 INTRODUCTION

Deploying IT tools that facilitate knowledge management and sharing are essential for the development of a knowledge-based economy. Several international reports highlighted the importance of IT tools to improve the effectiveness and efficiency of the nations and organizations efforts to manage their knowledge, and build their human resources (World Bank, 2003).

Portals are one of the IT tools that provide a common gateway into multiple distributed repositories. Portals provide an efficient access to relevant and accurate information and knowledge (Rainer et al, 2007). There are several types of portals such as commercial portals, corporate portals, affinity portals, industry-wide portals, mobile portals etc (Rainer et al., 2007). A corporate portal is a gateway into the organization's knowledge resources. Corporate portals improve employees' productivity by improving corporate information access (Aneja et al., 2000). As a knowledge management tool, corporate portals should provide tools that effectively support several

knowledge management processes (Benbya et al., 2004). Corporate portal provides a single web-based entry to corporate information and knowledge located inside and outside the organization. Based on Aneja et al. (2000), a corporate portal includes internal and external information resources. Internal information resources include internal websites, collaboration products, documents, organizational knowledge bases, and data warehouses; whereas, external information resources may include external websites, external content, news and news feeds, and external services.

The objective of the study is to examine how corporate portal supports organizational knowledge management by providing tools that support knowledge acquisition, knowledge conversion, knowledge application and knowledge protection , and how the support of each of these KM processes(as identified by Gold et al(2001) results in organizational processes benefits and people benefits (as categorized by Becerra-Fernandez(2004)).

Three are number of studies that empirically investigated the effects of organizational KM process on organizational effectiveness such as those

of Gold et al (2001), Liu (2003). Also, a couple of studies in developing countries such as Kuwait (Al-Athari and Zairi, 2001) and Malaysia (Chong, 2006; Syed-Ikhsan, and Rowl 2004) examined successful KMS deployment. However, there are limited studies that are focused on KMS users (Kankanhalli and Tan, 2004) and clear measurements of KMS users' satisfaction are still not well established (Ong and Lai, 2005). Based on my knowledge, there are limited studies that investigated the specific benefits that result from each of the KM processes independently.

2 BACKGROUND LITRITURE

2.1 Knowledge Management Processes

Knowledge management systems are systems that manage knowledge throughout the organization; they are developed to assist individuals and organization to store, retrieve, and transfer and distribute knowledge thought the organization. Structured or unstructured explicit knowledge from internal or external sources can be stored in an Organizational KMS (Davenport and Prusak, 1998; Turban et al., 2001).

Knowledge management is the management of organizational knowledge. Knowledge management processes have been classified in the literature in several dimensions, which are more or less the same. Gold et al (2001) indicated that organizational knowledge management capability is measured by providing tools and mechanisms that support four major knowledge management processes: knowledge acquisition, knowledge conversion, knowledge application and knowledge protection. Davenport and Prusak (1998) classified KM processes as knowledge generation, knowledge codification and knowledge utilization; Alavi and Leidner (2001) classified KM processes as knowledge creation, knowledge codification/storage, knowledge transfer, knowledge application, while Becerra-Fernandez and colleagues (2004) classified them as knowledge discovery, knowledge capture, knowledge sharing and knowledge application. Several other frameworks of KM processes were summarized by Benbya and his colleagues (2004).

2.2 Knowledge Management Benefits

The literature indicated that the use of KMS resulted in several individual and organizational benefits. Becerra-Fernandez et al. (2004) categorized knowledge management benefits as people benefits (learning, satisfaction, adaptability), organizational process benefits (efficiency, effectiveness, and innovation), products benefits (value-added products and knowledge-based products and organizational benefits (direct impacts such as return on investment and indirect impacts such as economies of scale and scope and sustainable competitive advantage).

Alavi and Lidner(1999) found that the perceived benefits of KMS can be categorized as process outcomes and organization outcomes. Process outcomes include communication (enhanced communication, faster communication, more visible opinions of staff and increased staff participation); and efficiency (reduced problem solving time, shortening proposal times faster results, faster delivery to market, and greater overall efficiency). Organization outcomes include Financial (increased sales, decreased cost and higher profitability); marketing(better service, customer focus , targeted marketing, proactive marketing) ; and general (consistent proposals to multinational clients , improved project management and Personnel reduction).

Based on Herzberg's two factors theory, Hendriks argued that individuals share knowledge because of motivation factors rather than hygiene factors (Hendriks, 1999). Motivation factors are related to achievement, responsibility, recognition, work-challenge, and operational autonomy. Hygiene factors are salary, bonuses and penalties. KMS also improves individuals' performance and productivity in terms of time and speed of the knowledge sharing process (Maier, 2002). These benefits may be classified as tangible, intangible and

3 FRAMEWORK

3.1 Framework Development

The objective of this pilot study is (1) to examine the role of a corporate portal as a knowledge management tool and (2) to explore the benefits that might be resulted of each of the knowledge management processes in the context of corporate portal. This study adopted Gold et al (2001) KM processes of knowledge acquisition, knowledge conversion, knowledge application and knowledge protection, as it has been highly tested in the IS research, and it is more comprehensive than other classification. As for the benefits, the study adopted the Becerra-Fernandez and his colleagues' (2004) benefits classification of organizational processes

3.2 Knowledge Management Processes

3.2.1 Knowledge Acquisition

Knowledge acquisition process is the process or obtaining knowledge from internal and external sources. Gold et al (2001) indicated that several terms are used to describe this process such as acquire, seek, generate, create, capture and collaborate, and all these terms referred to knowledge accumulation. Providing tools for knowledge generation and acquisition is important for the deployment of KMS as it creates an organizational knowledge repository for future organizational reuse. Knowledge capture and acquisition is essential for the establishment of organisational memory (Davenport and Prusak, 1998; Becerra-Fernandez and colleagues, 2004).

3.2.2 Knowledge Conversion

Knowledge conversion process is the process of making existing knowledge useful; it is the process of organizing, integrating, and combining, structuring, coordinating and distributing knowledge (Gold et al, 2000). This KM process is critical because it standardizes organizational knowledge and make consistent and useful for utilization. It set the stage for a successful knowledge application. This will improve the efficiency and effectiveness of the organizational knowledge.

3.2.3 Knowledge Application

Knowledge application is the process of actually using the knowledge to solve problem and make decisions. It includes the retrieval and application of knowledge. The main benefit of knowledge utilization and application for individuals is individual productivity, which is indicated by improvement on individuals' decision-making and innovation capabilities (Davenport and Prusak, 1998; Liu, 2003). More specifically, productivity improvement means that individuals will improve their judgments and skills, which will help them, make better decisions and accomplish their work more efficiently. Knowledge application helped companies improve their efficiency and reduce costs (Davenport and Klahr, 1998).

3.2.4 Knowledge Protection

Knowledge protection process is related to the protection of the organization knowledge from illegal or inappropriate use. Protecting organizational knowledge provides a competitive advantage (Gold et al, 2001). For achieving competitive advantage through organizational knowledge, knowledge should be rare and inimitable (Barney, 1999) Securing organizational information is improving organizational efficiency and effectiveness, and its information quality(Turban et al, 2008).

4 METHODOLOGY

4.1 Sample

This pilot investigation includes only 25 participants which are academic staff in a public university in Oman who are the user of the corporate portal. The medium of instruction in this university is English.

Based on the IT department, the objective of the university portal came from the need to have consolidated e-services for three types of users, students, faculty members, and other staff. The university portal is a dynamic web-based electronic gateway on SQU internal and external data resources. Information displayed is personalized, and designed to serve particular sectors of the campus community, that is different types of users. Pages accessed through the standard access authorization (username and password) issued to the university students, faculty, technical and administrative staff. Each type of user accesses the information and resources that he/she authorized to access.

The university portal has many features; some of these significant features are: Content management, resources aggregation, searching and indexing, personalization, single sign-in and bi-lingual (English and Arabic interface and content).

About 80% of the participants were male, and all the participants have above average computer skills. About 48% had at least two years of portal-use experience, and only 16%of them had less than one year portal-use experience. The majority of the participants, 68%%, were PhD holders; while 28% of them were MSc holders and 4% of them were BSc holders. About 24% of the participants were group lecturers, 44% were assistant professor, 24% associate professors and 8% were full professors

only 20% of participants with less than 2 years work experience.

4.2 Questionnaire

The questionnaire contained the constructs to be measured for quantitative analysis, along with demographic questions (e.g., gender, age, degree, portal usage experience, work experience, and job title). Construct measurements items were phrased according to a 5–point Likert scale (strongly disagree to strongly agree).

To test this study's theoretical model, the questionnaire had 34 indicators that formed the independent and dependent constructs (see Table 1). Constructs related to knowledge management processes was adopted based on Gold et al (2008), while the benefits were self- developed based on Becerra-Fernandez et al. (2004). Check the Appendix for the measurements. The study was conducted in English (the typical medium of business activities in Oman).

5 DATA ANALYSIS & RESULTS

5.1 Analysis Methodology

Data was analyzed by the SPSS 16. Preliminary analysis of this pilot investigation was based on the reliability, correlations and other standard statistical measures (such as means, maximums and minimums). Multi-variant analysis and hypothesis testing was not conducted due to the small sample size.

5.2 Constructs Reliability

The reliabilities of the measurements were evaluated through internal consistency reliability, the recommended level for internal consistency reliability is at least 0.70 (Chin, 1998). Despite the small sample size, this preliminary investigation found that the reliability of the study constructs were high. Table 1 shows that the study constructs' reliability were all above 0.7 except for the knowledge acquisition, which is 0.623 (almost close to 7).

The mean values of the constructs shows that the corporate portal provides average tools for knowledge acquisition, conversion and application, and above average for knowledge protection. The means also illustrates that the participants gave

above average (greater than 3) for organizational processes benefits of effectiveness and efficiency, but below average for innovation. The participants also gave above average (greater than 3) for people benefits of satisfaction, learning and adaptability.

Table 1: Constructs Reliability.

Construct	Total items	Reliability	Mean
Acquisition	3	0.62	2.82
Conversion	6	0.84	2.882
Application	6	0.80	2.89
Protection	4	0.92	3.24
Effectiveness	2	0.94	3.33
Efficiency	3	0.92	3.43
Innovation	2	0.93	2.50
Adaptability	2	0.77	3.06
Learning	3	0.91	3.06
Satisfaction	2	0.88	3.23

5.3 Correlations

Table 2 shows that the preliminary correlations analysis indicates that offering tools that support knowledge conversion through corporate portals is significantly correlated with the efficiency of organizational processes (a correlation of 0.599 and a significance level of 0.01) and the effectiveness of organizational processes (0.591; 0.01), and employees' learning(0.412; 0.05). Table 2 also shows that providing tools for knowledge application significantly correlated with the effectiveness of organizational processes (a correlation of 0.538 and a significance level of 0.01), employees' learning (0.623; 0.01), employees' adaptability (0.478; 0.05 and employees' job satisfaction (0.454; 0.05). In addition, providing tools for knowledge protection only significantly correlated with the effectiveness of organizational processes (a correlation of 0.461, and a significance level of 0.05) However, the correlations table shows that offering tools through the knowledge portals for knowledge acquisition have no significant correlations with any of the organizational processes benefits or people benefits.

Table 2: Constructs Correlations.

Constructs	effectiveness	efficiency	Innovation	Learning	Adaptability	Satisfaction
Acquisition	.173	.183	.375	.343	.180	.170
Conversion	.599**	.591**	.246	.412*	.142	.341
Application	.538**	.391	.281	.623**	.478*	.454*
Protection	.461*	.392	.096	.219	.019	.244
**. Correlation is significant at the 0.01 level (2-tailed).			*. Correlation is significant at the 0.05 level (2-tailed).			

6 CONCLUSIONS

The objective of this pilot study was to identify the organizational processes benefits (efficiency, effectiveness and innovation) and the people benefits (learning, adaptability and satisfaction) that might result from offering tools that support knowledge management processes (acquisition, conversion, application and protection) in the context of corporate portal.

Preliminary analysis based on 25 participants showed that providing tools through the corporate portals that support knowledge conversion impacted effectiveness and efficiency of organisational processes, whereas providing tools that support knowledge applications resulted in process benefits (effectiveness) as well as people benefits(learning, adaptability and satisfaction). Thus, the analysis indicated that knowledge conversion impacted organizational processes more than people, whereas knowledge application impacted people more than organizational processes. Offering tools that support knowledge protection also impacted organizational processes effectiveness. The preliminary analysis showed that knowledge acquisition had no impact on organizational processes or people. This could be traced to the low construct reliability.

Despite the small sample size, this pilot study provided practitioners and researchers with reliable measures that can be used to examine knowledge management processes and also reliable measures to examine the impacts of knowledge management tools on organizational processes and people. Preliminary analysis also provided some insights for practitioners and researchers on knowledge management impacts. Future research may include larger sample size to conduct hypotheses testing and advanced regression analysis. Future research also may extend the measurements of the benefits to

include products impacts and organizational impacts.

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MEASUREMENTS APPENDIX

Knowledge Acquisition Tools : Corporate portal has tools for:
1.generating new knowledge(info) from existing knowledge
2. identifying best practices
3. acquiring new knowledge(information) from external sources

Knowledge Conversion Tools: Corporate portal has tools for :
1.transferring organizational knowledge(info) to individuals
2.distributing knowledge(information)throughout the organization
3.absorbing knowledge(info) from individuals into the organization
4.integrating different sources and types of knowledge(info)
5. converting competitive intelligence into plans of action
6. filtering knowledge(information)

Knowledge Application Tools: Corporate portal has tools for :
1.applying knowledge(information) learned from experiences
2. using knowledge(information) to solve new problems
3.locating and applying knowledge(information) to critical competitive needs
4. taking advantage of new knowledge(information)
5. matching sources of knowledge(information) to problems and challenges
6. making knowledge(info) accessible to those who needs it

Knowledge Protection Tools: Corporate portal has tools for :
1.protecting knowledge(information) from inappropriate use inside the organization
2. protecting knowledge(information) from inappropriate use outside

the organization
3. restricting access to some sources of knowledge(information)
4.clearly communicating the importance of protecting knowledge(information)

Processes Benefits: The use of corporate portal :
Effectiveness
1. improves the effectiveness of my work
2. improves the quality of my work
Efficiency
3. improves the efficiency of my work
4. helps me complete my work quickly
5. helps me complete my work at lower cost
Innovation
5. improves my creativity at work
6. Improves my innovation at work

People Benefits: The use of corporate portal :
Learning
1. improves my learning process
2. enhances my personal knowledge
Adaptability
3. enhances my adaptability level at work
4. helps me adapt quickly to new tasks
5. helps me be responsive to new job demands
Satisfaction
6. enhances my job satisfaction
7. makes me more satisfied with my job