Mobile Knowledge Portals: A new way of Accessing Corporate Knowledge

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Abstract:

Knowledge portals are constructed through the use of web and internet technology and are accessed to add, retrieve or update knowledge and are done through a web browser using a computer system. Corporate knowledge portals are used by organizations for sharing, storing and retrieving knowledge by all its customers, employees, vendors and partners. Corporate knowledge portals allow organizations to become more competitive and innovative. This paper discusses the use of mobile portals as a new form of accessing corporate knowledge through the use of the mobile devices and identifies the main issues when mobile portal is meeting knowledge management, the paper focus on mobile knowledge portals which are considered to be the main ICT to support mobile knowledge management.

1.Introduction

Many researchers, economists, politicians and businessmen are referring to today's economy as "knowledge economy" reflecting a shift in trends for organizations from relying on information to make decisions to relying on knowledge as vital component for organizational survival and success. Knowledge economy as a term also implies that today's organizations has a continuing quest for knowledge that is needed in their daily operations. Although it is information that is at the center stage of everyday activities at organizations, knowledge remains the ultimate goal for employees, top management and decision makers. This accumulation of information over time becomes explicit and implicit knowledge stored in the learning organization. Knowledge accumulation and use needs a knowledge management system to support the "creation, capture, storage and dissemination of information" [1]. The Internet has played a major role in building a huge database of accumulated information that is ever growing in size and content. In November 2004 Google has announced on its company's website that it has indexed 8 billion web pages [3].

The Internet technology prompted organization to use a modified version of the Internet; this led to the introduction of the Intranet in the organizational settings. The Intranet allowed the fast and convenient sharing of company information among employees [7] from the office or home. For many corporations an intranet is seen to be the way in which employees would have access to company's information and expertise and to work collaboratively [2].

Organizations over time learned how to balance the access of information for both internal and external use [2]. Today, organizations deploy Intranets and extranets to allow its employee easy access of company's information through its firewalled Intranet and at the same time allows suppliers, vendors and stakeholders secured access to its production data through its Extranet networks.

The overwhelming amount of information available at a company's web site requires continuous amendments and updates and this led eventually to the development of Content Management Systems (CMS). CMS are web applications designed to make it easy for non-technical users to add, edit and manage a website (The Plone Foundation). There are many CMS providers out there, some of them provide the system for free and some charges a modest fee to download and use their software. Wordpress.org is considered one of the notorious free CMS software that is used globally by millions of users [10].

According to Reneker Organizations are building and identifying strategies to enhance the "intellectual capital of the organization's workforce". This implies paying attention to the use of knowledge management systems and portals within the organization and disseminating knowledge about the strategic benefits of knowledge management systems for "decision making" [2] and strategy formulation.

Currently the US government is focusing its efforts to bring the "librarian's professional knowledge and expertise to stand on integrating electronic library and information services with rising knowledge management (KM) practices". Many organizations are following this norm form large to small all over the world. This requires a complete and comprehensive change management approach to allow and guarantee that all individuals within organizations shall grasp this new technological and managerial change.

2.Knowledge Portals Evolution

Portals evolved over the years to what we know today as Corporate Knowledge Portals (CPK). In the early days of the Web, portals were merely a collection of disassociated websites [Altman 2007]. They were used to "consolidate corporate intranets and to provide single sign-on to back-end applications and database systems" [2]. Such systems are still in place today by some small and medium size organizations and are used by their employees on a daily basis. An example of such early day portals are the web enabled Grad Reporting Systems at universities and the HR Employee Attendance Systems utilized in most organizations. Such systems have a user log to record all users' activities on the system for administrative review and to monitor employee's actions and evaluate their performance on a daily, monthly and yearly basis.

Online portals later evolved into online systems that included access to almost all organizations internal applications such as accounting, marketing, inventory, human resources, and finance. Thereby users can access their company systems and perform all the required transactions both form office and home. They would also find information about other business departments through the centralized database over which the system is running on.

Today's portals provide employees a "single sign-on and access to back-end applications, business information, and also other portals in the organization" [2].

Systems and business developers relying on new business flow methodologies started building portals that are connected to back-end systems and thereby providing employees with the advantage of using portals that are "business process-driven, rather than data-driven as in older portal designs" [2].

3.Corporate knowledge Portals

The Corporate Information Portals evolved over time into what we know today as Corporate Knowledge Portals (CKP) that are influenced by the goals of Knowledge Management [Grammer 2000]. They inherited EIPs functionalities and they also integrated access to expertise and embedded applications functionalities [Grammer 2000].

In reality one may not be able to distinguish from start if the application he is using is an CKP or EIP. Both portals provide information about the organization and its products, services and operations. It also provides "collective services such as security, metadata repository, personalization, search, publish/subscribe," [9] they also mimic the general layout and look of a portal user interface [Firestone 2002].

Knowledge portals contribute to the success of the corporate knowledge management systems. They provide users with a unified platform for the access and retrieval of vital information residing on the company's website and web enabled applications. They are considered a knowledge management networking system for organizations.

In theory CKPs are a perfect solution to knowledge management systems in organization, but the real world implementation show that these systems lack a major contributor to the continued success of knowledge management systems and that is real time online collaboration. "It is not surprising that there is now a perceived need for better collaboration between knowledge workers across organizations" [Marshall 2008].

4.Mobile knowledge portals (MKP)

MKPs are defined as Knowledge portals that the user can interact with on the multi-access basis, in Particular through a web interface or via handheld devices like PDAs, smart or cellular phones.

The most important class of MKPs are those that not just provide mobile access to the functionalities of the underlying KPs but also use some specific characteristics of mobile technology like for example permanent connectivity, Anytime accessibility, exploit location-related context of the users to provide them, With some additional value like delivering location-related information or providing Anytime connectivity to domain experts [5].

According to them they identify the following major specific characteristics of mobile technology and its services that distinguish them from the ones of Internet:

- independence of location and time
- anytime accessibility,
- personalization,
- context awareness,
- Permanent connectivity.

In (**Search community-of-knowelege.de**) the following aspects of knowledge mobility are introduced:

- Mobility of knowledge users (MKP provides mobile access to its knowledge recourses),
- Mobility of knowledge carriers or domain experts (MKP supports access to the experts' knowledge),
- Personalization and context awareness of knowledge (MKP delivers location- and context-related knowledge in accordance with users' preferences).

5.Research objectives:
1. To understand customer's perception of Mobile Portals ease of use.
2. To understand Customer's think about the existence of helpfulness for mobile knowledge portals.
3. To understand Customer's perception for control and efficiency of mobile knowledge portals used by their bank.

6.Problem definitions:
The study was conducted to address certain key issues related to the mobile portals as extension to corporate knowledge portals. It would be worth to have some answers for the following questions:
1. What is the degree of customer's perception about the ease of use of Mobile Portals?
2. Do Customer's think about the existence of helpfulness for mobile knowledge portals?
3. What are Customer's perception about the control and efficiency of mobile knowledge portals used by their bank?

7.Suggested Model:
Based on Firestone [2] and [5] research model is developed. A model consist of four variables: information portal, knowledge portal, web portal and mobile portal, as shown in figure (1)

8.Data Collection
The data and information were gathered from two main resources:
1. Primary Resources:
 This comprises General data and the questionnaire
2. Secondary Resources:
Using the scientific references (Books, articles, etc…) concerned with the study's subject.

9.Research Instrument:
The researchers opted to use the close-ended questionnaire by restricting the answer set according to likert scale. The source of the questionnaire items for each construct as shown in Table 1 bellow.

10.Study Population
To be able to examine the research problem and the questions raised in that respect and in order to fulfill the objectives of this study, the researchers have been chosen to conduct the research at one of the leading Jordanian banks (The Arab Bank) which constitutes the first private sector financial institution in the Arab World.
Arab Bank has an unmatched Global Arab branch network with 500 branches spanning 30 countries in 5 continents. The survey questionnaire was distribute to (165) clients at the main branch of the Arab bank at three different period of the day early morning, noon and after noon; (158) questionnaires were returned from the targeted   population, (6) questionnaire were excluded from the analysis leaving (152) questionnaires that were included in the analysis.

11.Research Methodology
Population and Sample
This section describes the population through the general characteristics of the respondents in term of gender, age, educational level, mobile portals usage as shown in table (2) below.

12.Results and Discussion

To understand customer's perception of Mobile Portals ease of use a combination of positive and negative statements were given for customers (Figure 1). A large number of customers (76.2%) "Agreed" or "strongly agreed" that using mobile knowledge portal is sufficiently easy. (75.6%) of customers "agreed" or "strongly agreed" that it is easy to move from one part of task to another using a mobile knowledge portal. 7.9% of customers "disagreed" or "strongly disagreed" with this viewpoint. Customers' response to the fact that "all services can be carried out in a systematically similar way" was in majority against this with a (64.7%) "Strongly disagreed". (84.9%) of customers "agreed" or "strongly agreed" to the fact that it is simple and uncomplicated to use mobile knowledge portals. A large majority of customers (71.4%) "Agreed" or "strongly agreed" that mobile knowledge portals enable quick, effective and economical performance of tasks and (75.9%) of customaers "agreed" or "strongly agreed" that it was easy to access information that they needed through mobile knowledge portals.
Customers were asked about what they think about the existence of helpfulness of mobile knowledge portals. 88.1% of customers "strongly agree" that the help information given was useful in the mobile knowledge

portals. 72.4% of customers confirmed that the explanation of mobile knowledge portals is clear and understandable. A large majority of customers 85.1% "strongly agree" that documentation for mobile knowledge portals are sufficiently informative. Feedback for customers was perceived as extremely helpful with a 73.5% "agree" and "strongly agree" with this stand.

Customers were asked about how they perceive control and efficiency of mobile knowledge portals used by their bank. 82.2% of customers responded that the response and information display is fast enough. 73% reported that the amount of information displayed on the screen is adequate. Mobile knowledge portals allow users to access applications and data with sufficiently few keystrokes scored 81.6% and "data display is sufficiently consistent"

Scored 71%. The argument "Mobile knowledge portal support all functions in the way that you find it useful" scored about 71.4%.

14.Conclusion

Knowledge management process - especially the discovery and acquisition - today is increasing carried out in mobile environment, like at the customers houses, out side of there offices or even at the roads, where knowledge workers use mobile devices instead of PC'S to have access to high-band width networks.

This paper shows that using mobile knowledge portals are becoming a very useful tool for both the corporate and the customers, also the customers agree through the distributed questionnaire that the mobile portal was very easy to access information with, and the help information given is useful, also mobile portal knowledge support all functions they needed.

Because of that Mobile knowledge portals have to be enhanced with mobile knowledge services and consider location-oriented information to meet fully the requirements of mobile knowledge management in the near future.

In future works it's highly recommended to address the adaptation of mobile services, the consideration of users and the work context for knowledge management and the design of highly context- aware knowledge portals.

15.Limitation

First and foremost this is a case study which is a descriptive method, not an explanatory one. So the conclusions about cause-and-effect relationships cannot be drawn. Behavior can only be described, not explained. Case studies also involve only a single individual or just a few and therefore may not be representative of the general group or population. So this leaves room for important details to be left out. Also, much of the information collected is retrospective data, recollections of past events, and is therefore subject to the problems inherent to memory.

The second limitation has to do with the extent to which the findings can be generalized beyond the cases studied. The number of cases is too limited for broad generalizations, further empirical evaluations, however, are needed to replicate the findings in different contexts and surroundings.

References

[1] Akscyn, Robert M., Donald L. McCracken and Elise A. Yoder (1988). "KMS: A distributed hypermedia system for managing knowledge in organizations". Communications of the ACM 31 (7): 820-835.

[2] Colins White, (2007), "Do Portals Have a Future?", BeyeNETWORK http://www.b-eye-network.com/view/5673

[3] Google Corporate Information web site, Google History, (2004)
http://www.google.com/corporate/history.html

[4] Lee, Y.E., Benbasat, I. (2003), "Interface design for mobile commerce", *Communications of the ACM*, DOI, Vol. 46 No.12, pp.48-52.

[5] Loutchko,l and Birnkaraut,F(2005),mobile knowledge portals:Dscription schema and development trends, processing I know 05,Graz,Austria,June29-July1,2005.

[6] Petersen, A.K., Gransaether, A., Krogstie, J. (2010), "An empirical investigation of attitude towards location-aware social network service", International Journal of Mobile Communication, Vol. 8 No.1, pp.53-70.

[7] SearchWinDevelopment.com
http://searchwindevelopment.techtarget.com/sDefinition/0,,sid8_gci212377,00.html

[8] The Plone Foundation web site, Documentation, What is a CMS? http://plone.org/documentation/faq/what-is-a-cms .

[9] Wayne Eckerson. April (1999). "Business Portals: Drivers, Definitions, and Rules," The Data Warehousing Institute, Gaithersburg, MD.

[10] WordPress › Blog Tool and Publishing Platform, (http://wordpress.org/).
www.community-of-knowelege.de

[11] Yu, C., Chang, H. (2009), "Personalized location-based recommendation services for tour planning in mobile tourism applications", Lecture Notes in Computer Science; Vol. 5692, Proceedings of the 10th International Conference on E-commerce and Web Technologies, Linz, Austria, September 1-4, pp. 1-49 .
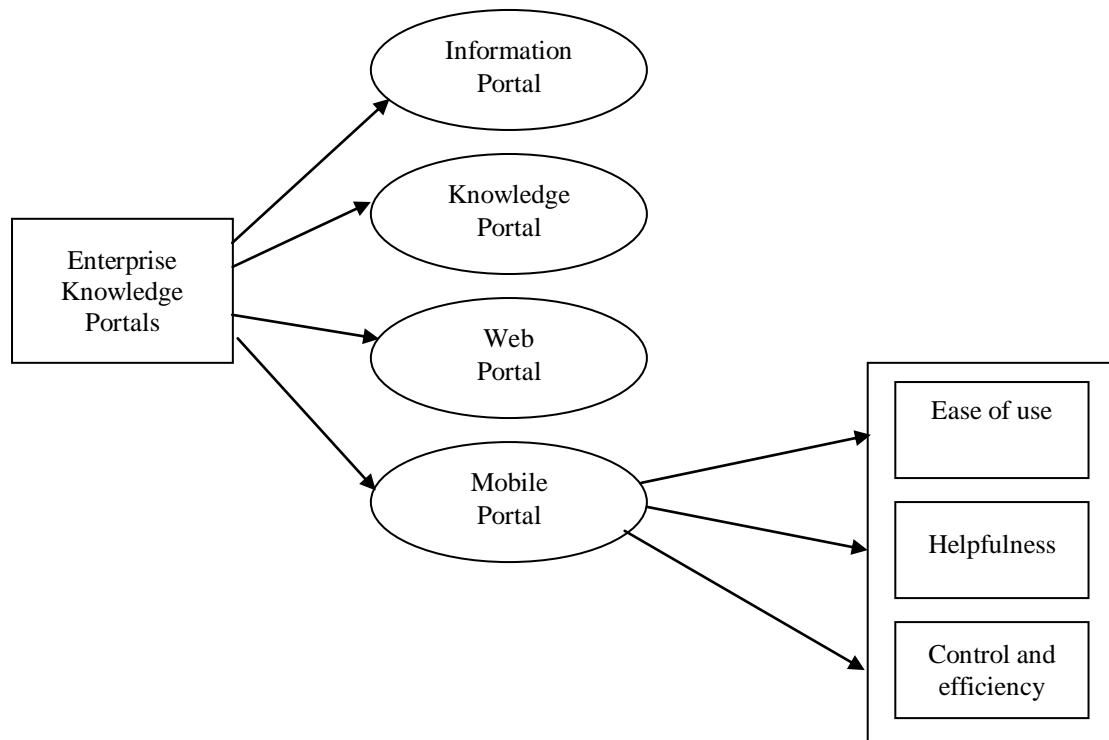
Figure (1) Mobile Portal Model

Table: 1 Research Constructs

Variables	Source of items
Ease of use	Petersen, Gransaether, Krogstie(2010)
Helpfulness	Yu, Chang (2009),
Control and efficiency	Lee, Benbasat (2003)

Table 2: Demographics

Characteristics	Frequency	Percentage
Gender:		
Male	86	56.6
Female	66	43.4
Age:		
Under 20	42	27.6
20 – 30	76	50
31 – 40	28	18.4
Over 40	6	3.9
Educational Level:		
High school	-	-
College degree	15	9.9
Bachelor	133	87.5
Post graduate degree	4	2.6
Mobile portals usage		
Less than 6 months	22	14.5

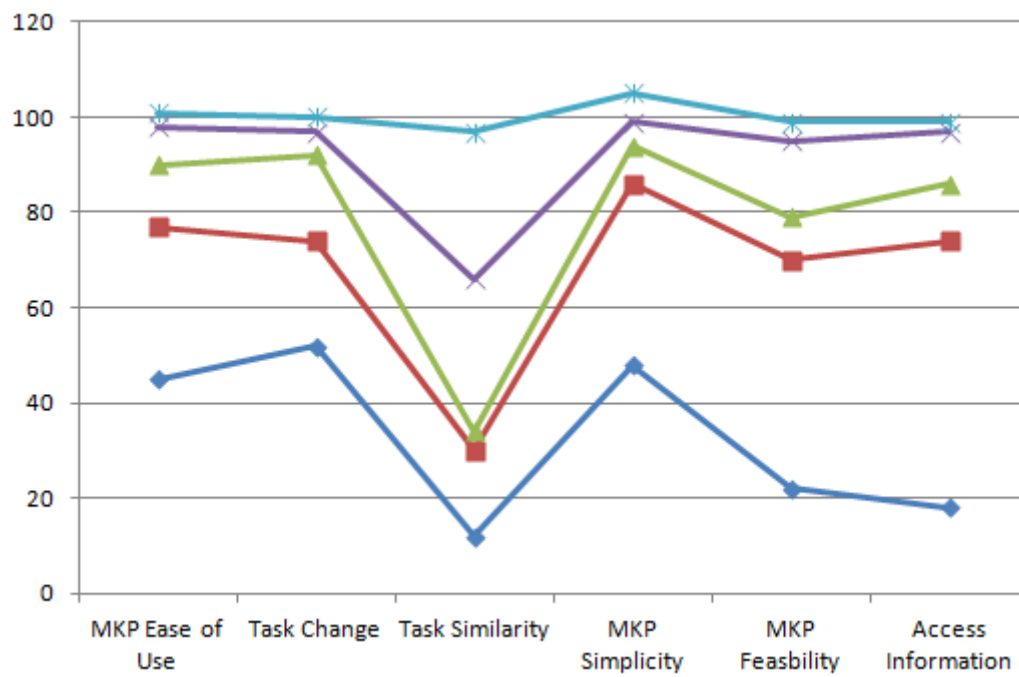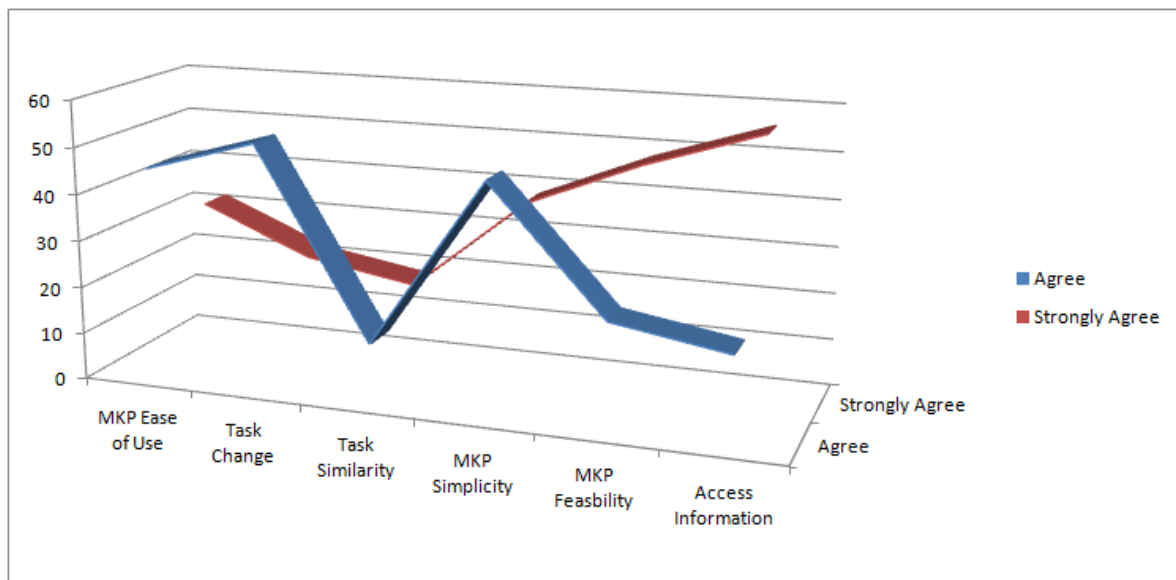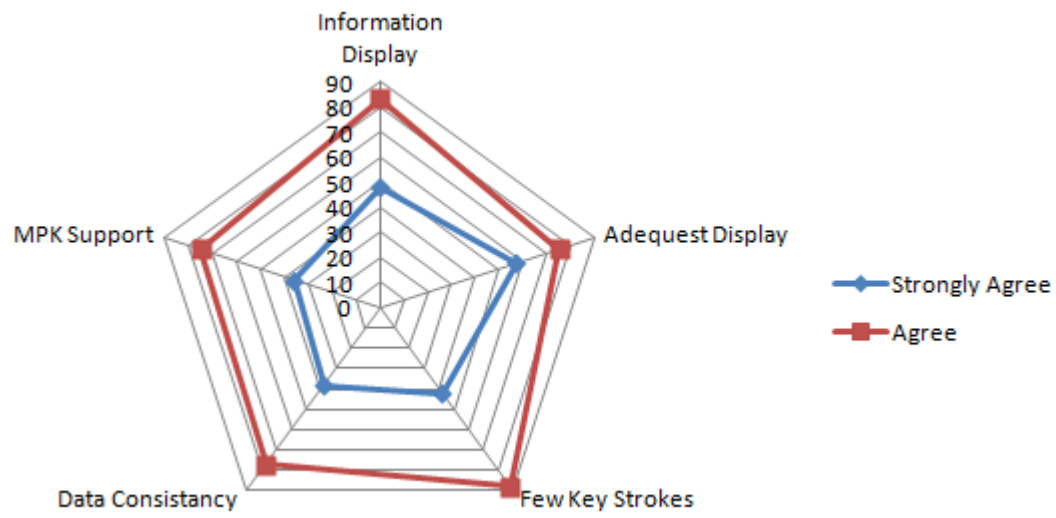| 1/2 to 1 year | 41 | 27 |
| 1 to 2 years | 81 | 53.3 |
| Over 2 years | 8 | 14.5 |

Figure 2 Ease of Use

Figure 3 helpfulness

Figure 4 Control & Efficiency