Management of Mobile Knowledge Base

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Abstract
In the past years, Most organization have been disconnected management technologies. Now a day, organization seeking to increase innovation with models of business that moving to out sourced solutions, improving processes. Knowledge management process today is increasing especially the acquisition and discovery carried out in mobile environment by the customers houses out of ever or through the road, bus train as where the mobile device are used instead of computer device for accessing to the high band width the network. Mobile knowledge management (mkm) is understand as usage of mobile accessing for establishing knowledge and document management system with user interface design. In this paper show how the knowledge will be managed for mobile environment. then describe the types of mobile knowledge database which differs on the basic of knowledge processes on database. Aslo, show how built the mobile management system. In addition, define the technical media that's used in the mobile environment.

Keywords: mobile knowledge , mobile database environment, reference Architecture.

1.Introduction
An organization is defined as a group of people who work together which are vary in size large or small flat or hierarchical ,distributed or centralized. When we want to analyze any organization should be understand it firstly then conceptualized by using metaphors shap[Morgan 1986][18] which reflect the changes in social values which depending on cultures in 1980,then in 1990,the organization use computer, network this lead to used information and modern technologies for communication [8].

The knowledge are characterized with using knowledge does not consume it, or when transfer does not lose it and much of an organization's knowledge also,walks out the door at the end of the day [4].

The best definition of KM would incorporate both the capturing and storing of knowledge perspective ,together with the valuing of intellectual assest[18].

Km develops systems and processes to acquire and share intellectual assets it increase the generation of useful ,actionable and meaningful information and seeks to increase both individual and team learning[4] .

Today, the combined of knowledge management(KM) and mobile technology can extend knowledge management to anywhere and anytime[18].
In the mobile environment, some of fixed hosts called mobile support station are arranged with wireless interface for communicate with mobile unit which are located within a radio coverage area which are called a cell. The cell as in cellular communication network or a wireless local area network which operate within the building. Mobile unit will communicate with other mobile or fixed host via a wireless channel.

Data dissemination is the delivery of data from a set of producers to a larger set of clients. The bandwidth from server to client is much greater than in the clients to the server. In the mobile system, sometimes, the mobile can receive the data with high rate but unable to transfer it at a high very speed.

In addition, the server need also for deciding the manner of pushing data when sending it periodically or aperiodically. Periodic push data means the advantage of allowing client to disconnect for a certain periods and still not miss out items. aperiodic is more effective way of using the bandwidth available. There are three organizations that suitable for real time environment, firstly flat organization, is the simples one the server sends the union of data item which needed by the client in periodic but causes wasteful bandwidth.

Secondly, to remedy this, it use rate monotic organization broadcast each item at inversely proportional to its time constraint[2].

2. Mobile Knowledge Management

There are two views related with word mobility, firstly, it refers to mobility of its source that the movement of the place in which knowledge intensive processes take place and the mobility of its information of place[9]. while the other distinguish between three groups of mobility knowledge management. Firstly, (mK)M which means on the mobile KM environment of organization (the integration between mobile processes of knowledge in mobile environment). Secondly, (mKM) the intersection between m(KM) and (mK)M .thirdly, (mK)M that means the knowledge mobility in organization (manages leverages knowledge assets by considering the nature mobile of knowledge)[15].

Below the figure of mobile knowledge management Architecture are shown.
FIGURE 1: ARCHITECTURE FOR MOBILE KNOWLEDGE MANAGEMENT

Due to the technical and organizational limitation of mobile workers. Select authoring, sharing, retrieved and presentation of knowledge.

To optimize in mobile setting when capturing information is used to structure the captured media, meta data are added, relations between different media elements, tasks and events are established[4].

Mobile computing has convergence of two technologies powerful network portable computers and the development of fast reliable[5].

In order for knowledge management to success it has specify what is important to knowledge worker. What is of value to them and to their professional practice.

3. Benefit of km

Km is benefit to individual, practice of communities and to the organization. the benefit of km for individual are described below help people to perform jobs quickly through take it the best decision make and to solve the problem assist people to keep up a date.

Contribute the opportunities and challenges built a sense of community bonds with in organization for community[18] are means:-

- Help drive strategy
- Solves problem quickly
- Diffuses best practices
- Improves knowledge embedded in products and services cross fertilizes idea and increases opportunities for innovation.
- Enable organization to better stay a head of the competition builds organization memory.
- Competition builds organizational memory.
4. Mobile Knowledge Data Base

Mobile knowledge management (mKM) are a new area of research and practice that appear when using mobile technologies in different knowledge acquisition and contexts has risen enormously.

mKM is defined as a mix of two research area (mobile computing or mobile technology and knowledge management) [16]. mKM is a subset of KM which used mobile technologies and wireless communication to manage the knowledge that is used. Then, can extend the definition of mkm which means the approaches and technologies to arrange knowledge [17].

Discovery and acquisition process of km today is increasing carried out in mobile environment. in houses, market, office, university, road, cars where the knowledge worker used the mobile devices instead of to access the knowledge with high band width of network[4].

5. Design of Mobile Management System

For each organization specify the requirement and goals to find the framework of mobile knowledge management system. Beekman believed that knowledge management consist of 8 main steps:-

- Identify, acquire, select, store, share, apply, create and sell[3].
- While Allee articulated that km depending on four levels: capture, share, application and creation[1].
- Maryam and Dorothy's approach organizes the km process into five parts: acquire, storage, sharing, application and creation [10]. Which means (during knowledge acquisition learners start organizing knowledge during the storage step).
- In sharing, collaborating with other learners on collected knowledge and learning experience while in application (classify and access knowledge in different knowledge categories).
- Finally, in creation, learners create knowledge through sharing and application.

Due to the technical and organizational limitation of mobile workers, authoring, sharing, retrieval and presentation of knowledge to optimize in mobile settings.

The key of mobile km is the context aware information processing. This means, the system have a certain information related with current situation of the users, while assisting the user in the tasks with his partake computing device. When capturing information, the mobile context is captured as well and used to structure, captured media the context of metadata is added relations between different elements of media and events then the task are established[5].

6. Design Mobile Database Environment

A transaction is a set of operation that translate a database from a state to another or the series of read and write operation. It starts and end with the transaction. Mobile transaction is a set of instructions in execution that each write set satisfy the ACID properties[7]. Which can be
defined as a sequence of operations that form a single logical unit of work in a mobile environment.

While the environment of mobile's transaction contains three different components: mobile support stations (MSS), fixed hosts where DB servers (DB) reside, and mobile host (MH). In Figure 2, displays the architecture of the mobile environment [14].

![Figure 2: Architecture for Mobile System](image)

**FIGURE 2: ARCHITECTURE FOR MOBILE SYSTEM**

Always, there is an interrupt when execution the transaction in the MH because of the limitation of computing capacity and environment condition. Mobile environment requires distributed transaction processing because of the limitation of processing capacity and resources. Furthermore, mobile hosts require additional support to carry out the transaction. Also, the mobile transaction processing system should have enough capacity to cache data so it can execute the transactions when being disconnected from the DB servers.

Fixed host is a computer in the fixed network that is not capable of connecting to a mobile unit. Mobile host is a mobile computer that is connecting to a fixed network via wireless link. Base station is connecting with a mobile unit and it equipped with wireless interface also is called mobile support stations/base stations [13].

DBMS in the FH is used for providing the management facilities data storage. Cell is a coverage area that B is communicate with MH. This cell could either a cellular connection satellite, wireless LAN. The cell's size depending on the technology that is used [6].

BS is an interface between MH and FM. Because uses wireless interface in the BS there is a limitation in bandwidth, power limitation of the mobile device and unreliable storage of data when the network disconnects with MH, the value of data must be assured as valid and updates are reflected in DB [13].

The base station controller (BSC) and the home location register are small data base that contain information about the network subscribers [11].
The mobile switching center and public switching telephony network PSTN are used as a gateway to international or other networks, the fixed and mobile host has full access to DB using the DB system[1].

When a mobile unit (MU) leaves a cell boundary hand off protocol is used to transfer the responsibility for mobile transaction and data support to the BS of the new cell. It involves breaking the connection with old BS and establishing new connection with neighboring BS. It also involves the handoff data support to the BS of the new cell mobile host.

7. Conclusion

Now a day, the popularity of the mobile database is increasing in which that database technology permits users, customers are using mobile devices to reach the necessary data that's being moved to the applications in order to improve the performance of it.

In this paper, discussed the definition of mobile knowledge then presented the architecture for specifying the important processes of mobile knowledge management. In addition, conclude the types of knowledge mobile management briefly. At the end, defines the transaction and the processes in mobile database, what's the main parts of mobile database.

The limitation of wireless and difficulty to manage the transaction in mobile database because the mobility of processing node, when using wireless communication must use algorithm to treat the disconnected in the network when processing transaction, limited battery of mobile device.

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