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Dimension of Mobile Information Behaviour

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ABSTRACT

Mobile information is a significant access point for human information activities. Theories and models of human information behaviour have been developed over several decades but have not yet considered the role of the user's computing device in digital information interactions. This paper reviews the literature that leads to developing a dimension of mobile information behaviour. Based on the literature review, information needs, information access, information retrieval and information use are recognized as the dimensions of mobile information behaviour. The study is significant to understand the nature of user behaviour in searching, retrieving and using of information via the mobile device.

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1. Introduction

The purpose of this paper is to review the dimensions of information behaviour and propose a dimension for mobile information behaviour. Many studies had been done in the aspect of information behaviour but with the advanced technology in mobile device, user (e.g.; managers, lecturer, medical practitioners, students) information behaviour may have gone through changes. One of the flexible and fastest spreading ICT devices in the last decade has been the mobile phone. Apart from phone call activities and short message service (SMS) exchanges, this mobile device known as a smartphone, becomes the most flexible multimedia device for users (Westlund, 2008). The widespread adoption and utilisation of mobile devices, have moved information interactions from the dwelling areas and workplaces to the street, and given fresh meaning to the daily routine of information access. Much work in the area of mobile information behaviour had focused on how mobile search differs from desktop search, with the conclusion that it tends to be less tedious or more sophisticated and successful than desktop searching (Kamvar, Kellar, Patel & Yu, 2009).

At the same time, people are performing complex information searching activities, such as browsing, downloading and sharing content, using mobile devices (Smith, 2012). Absar, O'Brien and Wenster (2014) given the unfettered nature of mobile use, also perform these activities are embedded in and influenced by constantly evolving situations of mobile user. Moreover, most academic and public libraries in modern times nowadays are trying to apply the openness concept to give their citizens some freedom in searching information.

Openness can be defined as accessing, processing, publishing and disseminating information

sources without any distraction of policies or acts. This becomes easily achievable due to the spread of ICTs and mobile devices. Most information seekers or information users hope that democratisation of information and knowledge is positively supported by the government sector (United Nations Educational, Scientific and Cultural Organization, 2015). This paper focuses on the dimensions of mobile information behaviour which are the dimension of information need, dimension of information, information access, dimension of information retrieval and dimension of information use that lead to the openness concept in the library information science field. The objectives are:

- a) To formulate and evaluate a dimension of manager's mobile information behaviour.
- b) To develop and validate mobile information behaviour measurement in future research.

These dimensions will lead to the formulation and evaluation of a model mobile information behaviour among librarians in the private and government sector.

2. Information Behaviour

Information behaviour has become the focus for many researchers including the highly developed behavioural model of information seeking strategies by Ellis (1989), Kuhlthau (1993), Information search process, and Wilson (1997) problem-resolving model. Fairer (1990) has defined information behaviour as the way people think, search and use information. Additionally, Bates (2010) identified information behaviour as the currently preferred term used to delineate the many ways in which human beings interact with information, especially, the ways in which people try to search and use the information they need. Information behaviour is also a term of art used in library and information science to refer the type of human research behaviour and to understand the human behaviour relationship to information activities. Moreover, according to Wilson (2000), Information Behaviour is the entirety of human behaviour in relation to sources and channels of information, including both active and passive information seeking, and information utilisation. Thus, it includes face-to-face communication with others, as well as the passive reception of information as in, for example, watching TV advertisements, without any intention to act on the information given. But still, there is scarcity in studies on user mobile information behaviour, while many literature state that a mobile device was used mainly for obtaining information (Balasubramanian, Peterson, & Jarvenpaa, 2002).

3. Mobile Information Behaviour

Mobile information behaviour is a significant access point for the librarians in handling information activities through the mobile devices and aligning it with the concept of human information behaviour. The growing use of mobile devices increases the number of applications that have been developed to support mobile social information interaction between mobile users (Church, Cousin & Oliver, 2012). Examples of this include applications than contain information on web page ranks and application of sharing search result for information seekers (Kotani, Nakamura & Tanaka, 2011), or travel information among proximal users (Yang, Hwang & Shih, 2012). For instance, Teevan, Morris and Azenkot (2014) designed an application with a collaborative mode activated by changing the phone's orientation. Collectively, these applications presume that information sharing takes place in real time with co-located others. According to the report, one out of every three smartphone users search for a business's contact information (Lee, 2013). Due to the demand for current and timely of information, many would use mobile device i.e., smartphone in searching and retrieving information. Because as known by all, the smartphone is a device that is handy and able to facilitate

searching and retrieving process at any time. But, how much do users depend on this mobile device in fulfilling information needs?

4. Information Need

With the number of mobile device usage rapidly increasing, in 2013, over 967 million units of smartphone were sold to consumers (The Statistic Portal, 2015). Mobile devices such as smartphones and tabs are popular since the proliferating of mobile social applications. Numerous users use their mobile applications such as traveler applications, business apps, and communication apps for varied purposes. With the intention to fulfill information needs users use their smart phone devices regardless of space, time and geographical location. Thus, the mobile device becomes the must have item as it is always ready for use and become a popular way for users to fulfill their information needs by interconnection, contents and self-expression via mobile applications.

According to Faibisoff and Ely (1974) information need is considered as a generic term with information demand or information requirement and information desire as a subset. A mobile device enables people to fulfill their demand for information as fast as they can, and able to search their information desire at any time. With the increase of smartphone usage, a lot of mobile social applications have been increased to meet the needs of information and social requests of users (Zhu, Hui, Chen, Fu and Li, 2011). Almost all managers, including librarians have a mobile device and use it to retrieve information they need. Therefore, the information retrieved using a mobile device has to be presented in a different way than on a desktop computer. The needs for information occur without time or place barrier such as searching for language translation in the middle of a conversation. Thus, Heimonen (2009) stated that recurring information needs as habits that appear from an individual interest and practicality. Although it is difficult to tell what actually a man does with his mobile device such as a smartphone, but a mobile device always fulfills the demand and desire for information in order to seek answers or reduce a person's uncertainty at any time, since a mobile device is always ready to be used.

4.1 Seeking Answers

Seeking answer become a trigger in fulfilling one's information needs. According to Ellis, Wilson, Ford, Foster, Lam, Burton and Spink (2002) information seeking behaviour is the intention and action of seeking answers for accurate information to stratify some goals, which user may interact with a database or world wide web. Users with different education and background may have smartphones to fulfill their demands and needs in everyday life. Since mobile information behaviours include enthusiastically seeking for information to fulfill information needs, or accidentally bump into information and sometimes evade the information (Zhu, Hui, Chen, Fu and Li, 2011).

4.2 Reduce Uncertainty

Many keep close to their smartphone as it assists them in their everyday life. Many use their smartphones to search for a health condition, such as looking for symptoms of a disease and its treatment. In the United States, 62 percent of smartphone users used their devices to look up for information about a health care (Smith, A 2015). It shows that having a smartphone is more convenient to fulfill information needs as it helps in reducing the uncertainty feeling at any time and place. Mobile device users may use the internet wirelessly or any relevant

mobile applications (apps). There are three characteristics of applications on mobile device i.e. customisation (to attain personal information), convenience (easy access to information and services (Balasubramaniam, Peterson and Jarvenpaa, 2002), and content (to retrieve updated and in-depth information).

The theory of uncertainty reduction indicates that the beginning of a relationship is characterised by the high level of uncertainty. As people feel unpleasant about uncertainty, they comfort the feeling through seeking information from and communicating with others (Berger, 1987; Weiss et al. 2008). In today's environment, a lot of communication happen virtually, as people tend to socialise and communicate through a virtual community.

5. Information Access

Soon, the smartphones will become the competitor to other devices as the primary platform for information access. The smartphone becomes a preference because it works as a mobile phone, provides wireless internet, and has productivity applications such as email. Therefore, Thompson (2008) proposes that public libraries and information agencies should give attention on information service and access despite of the physical collection, as users happen to be more dependent on this ability. Therefore, the span of data repositories access will have to grow. Meanwhile, Smolla (1993) stated that librarians and information providers should provide information and make it accessible to the general public. Besides, smartphones can act as an intermediary between potential users and the information itself (Mathiesen & Fallis 2008).

5.1 Physical Access

The term physical access refers to an access or right to use the documents that represent information or in other words the process of receiving documents that are required (Svenonius, 2000). Thus, physical access is the ability of physically getting access to the computer system. The term access itself refers to a “source pertinent to an inquiry, to comply with the evidence that result in acquiring the knowledge desired” (Buckland M. 1991). Moreover, during information access activity, the user needs a physical device like the electronic structures that hold the information, and ways to retrieve the information (Jaeger & Bowman, 2005). Despite that, there are also challenges in assessing information such as identification of right sources, its availability, and price to fulfill the information need.

5.2 Social Access

The conceptualisation of descriptive norms is the atmosphere that tells us what it is (environment). Therefore, the social aspects of information access is based on the theory of normative behaviour (Burnett, Besant, & Chatman, 2001), in which within specific social contexts, information behaviour is like other day-to-day activities that must be seen as a normative situation. The theory stated that the value of information is not collective; however, it is embedded within the customs and attitudes of a particular social world. The smartphone technology enables any information from around the world to be shared widely and faster effortlessly. Despite of the difficulty in confirmation of its reliability, accuracy, and trustworthiness of the information, it creates awareness in a short time. According to Smith (2015) in his study, the features of a smartphone that are regularly in use by respondents are 97 percent use it for text messaging, 92 percent use it for voice or video calls, 89 percent use

it for the internet, 88 percent use it for emailing, and 75 percent use it for social networking. Apart from that, the smartphone is used to keep up-to-date with breaking news, and to share or to learn on what is happening. Therefore, a person may use stories around the world for casual conversation in order to maintain a connection, or to engage in “small-talk” (Burnett, Besant, & Chatman, 2001). Thus, for some people, asking for records on national security is acceptable, however, for others the act is considered as inappropriate (Mart, 2006; Smith, 2007).

5.3 Intellectual Access

Intellectual access includes the way information is categorised, organised, displayed, and represented. As information is available in various disciplines, and is being represented in many formats, having a good searching skill is vital to enable access to the right information. Therefore, by learning intellectual access, the appropriate ways of making information accessible is disclosed. Whenever users retrieve the information, the request and the information are handled in an efficient manner through the representation of available information sources (Jaeger & Bowman, 2005). Intellectual access mechanism includes the quantity and readability of information provided, as well as possible connections between documents, knowing how to request records and how to pursue adjudication (Grunewald, 1998; Tankersley, 1998). Thus, to know the way in accessing information, a person needs to have good searching skill in order to access the information.

6. Mobile Information Retrieval & Use

Many researches in mobile information retrieval defined mobile information retrieval differently based on their context of studies and the nature of content to deliver in conferences and journals. At least five international conferences, including International Conference on Ubiquitous Computing, International Journal on Human Computer Interaction and International Conference on Mobile Data Management have focused on this topic. Meanwhile, for journals, Mobile Information Retrieval is the main theme lately.

7. Content Adaptation Aspect

The reason that mobile information retrieval is unique as compared to traditional information retrieval lies is the aspect of ecology. The context of mobile information retrieval includes location information context, cameras and ability of running a social network in its environment. Furthermore, the availability of geographic information system (GIS) sensors to detect the location and position of an individual making mobile information retrieval as a superb device and technology used by users.

8. Context Awareness Aspect

In technical perspective, information retrieval using mobile devices is concerned with the representational, modelling, indexing and retrieving multiple media of texts, graphics, image, sound, animation, audio, video and their possible combinations (Tsai, Etoh, Xie, Lee & Yang, 2010).

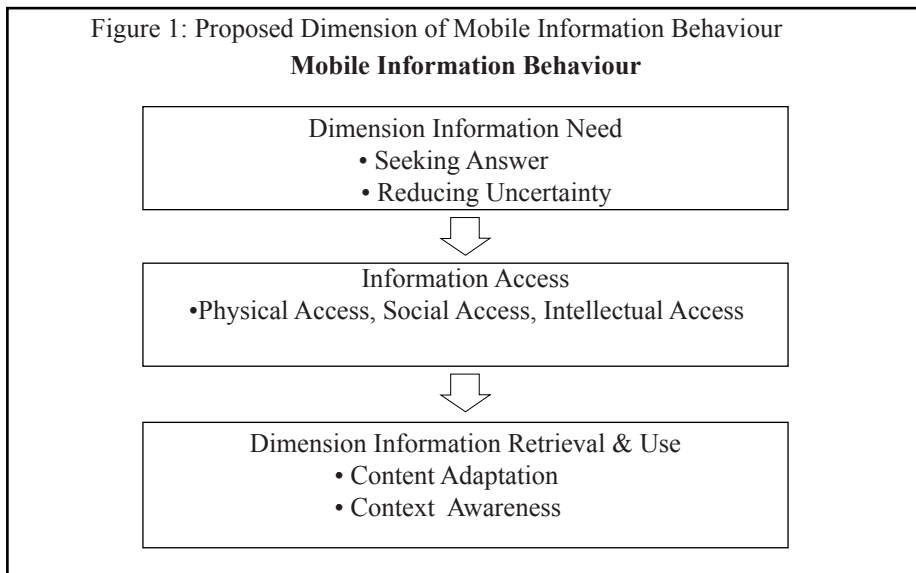
9. Characteristics of Mobile Information Retrieval

Generally, the uniqueness of mobile information retrieval is its ability to retrieve relevant results/information resources and/or information artifacts in a very short time and convenient ecology through

their connection among various digital information environments at difference contextual levels. Therefore, Mobile Information Retrieval should include all these aspects.

10. Conclusion

Based on the reviewe of literature that has been done, Figure 1 is the proposed dimension for mobile information behaviour. Based on the reviewe of literature, it is identified that information need, information access, information retrieval and information use are the dimensions of mobile information behaviour. These dimensions contribute to a model of mobile information behaviour.



In a nutshell, the advancement of information technologies has drastically introduced a new paradigm of information behaviour which is known as the openness paradigm era. This new paradigm has also changed the ways people interact, operate, search and disseminate valuable and accurate information to be used without any constraints of time, space, location and devices. Therefore, libraries and information agencies should prepare themselves to understand this new behaviour. This study is significant to understand the nature of user behaviour in searching, retrieving and using the information through the mobile device.

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