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A Feasibility Study of Mobile Services Implementation in National Library and Archives of Iran: user's trends

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Abstract:

Purpose: This Study seeks to reveal the opinion of the users of National Library and Archives of the Islamic Republic of Iran (NLAI) about library services based on cell Phones, to recommend new services for this library.

Design/Methodology/Approach: Descriptive survey method was used in this research and the required data were collected from 150 randomly selected samples, through a questionnaire developed by researcher.

Findings: Findings showed that 68% of respondents supported the use of mobile phone in the library and did not recognize it as being a disruptive factor. Among several proposed services, over-due day reminder (in saloon, or circulation desk of public library of NLAI) with 76% was the most favorable service. Providing audio tours of the library with 33% had the lowest interest. Totally, in 79% of proposed services, respondents consent was more than 50%.

Originality/value: Mobile Library Services provide easy access to work with library services and facilities, and it's expected that the efficiency of NLAI Services will be greater by using Mobile Library Services, and for the first time surveyed NLAI user trends about mobile based library services.

Keywords: National Library and Archives of the Islamic Republic of Iran, Mobile Library Services, user's, Cell phones.

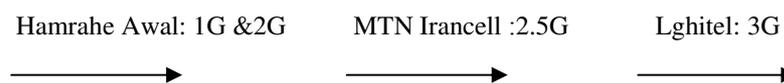
Introduction:

The technologies have made communication and access to information very convenient and time consuming. The users have the comfort of use in their home and office, and from where ever they are while on the move with their mobile phone units or PDAs (Abdul Karim, Darus and Hussin). In recent years the new mobile phones services and facilities have become as important as call making, and even more favorable. In 2009, for the first time ever, mobile phones were used more for accessing data than to making calls (Fox2010).

Hitherto in order to improve mobile communication several standards have developed: The first generation standard (1G) for voice only was developed in 1979. This was followed by the second generation (2G) standard using global system for mobile communications (GSM)/TDMA – time division multiple access, which emerged somewhere in 1992. The generation that follows is based on 2.5G standard known as General Packet Radio Service (GPRS). The most recent standard was called 3rd Generation or 3G (Abdul Karim, Darus and Hussin , 2006); By 2009, it had become clear that, at some point, 3G networks would be overwhelmed by the growth of bandwidth-intensive applications like streaming media. So the 4th generation standard was developed. The first two commercially available technologies billed as 4G were the WiMAX standard (en.Wikipedia).

In 1994, the first Iranian mobile Operator (Hamrahe Aval) services based on 1G and 2G standards began and then second mobile Operator (Irancell) service began in 2006. Because of Transferring policy and represented services like as GPRS, MMS, Irancell found great number of subscribers and forced mobile service marketing to a new competitive time. The third Iranian mobile operator (Lghitel) will represent services based on 3G in 2012.

The effect of each operator on mobile services in Iran.



According to the figure1 it's obvious that possibilities of using wide array of mobile phone services are available in Iran. Of course there is a gap among Iran and developed countries that are using 4G.

It seems that the first Mobile Library Services was through SMS, and then by development of web-enabled cell phones, other library services like OPAC service accessible via mobile phones were developed. We can assign the first mobile library services to Japan, because the first full internet service on mobile phones was introduced by NTT DoCoMo in Japan in 1999, and then the first mobile library service, based on mobile internet services was I-mode OPAC of Toyama University Library services, was developed in September 2000. One of the conditions for the development was the high popularity of mobile phones among students. By that time, some universities had begun news services of administrative affairs like cancellation of classes via short messages (Negishi, 2003).

Though in some libraries use of mobile services has emerged, but in most libraries use of Mobile is forbidden as part of policy and reserved right library and users' responsibility. Also some libraries allow users to make or receive short calls in a low voice only in some locations and spaces such as the stairwells or the entrance lobby.

Totally in all libraries, one of these two approaches is ruled: 1.The prohibition or restriction 2.Encouragement.

Apart from approach of libraries about using mobile phone in library environment, because of some requirements mobile phone usage in library is inevitable. Library services have changed with the transformations in computing and networking (Cummings, Merrill, Borrelli, 2010), and also under the influence of technology, users' behaviors and expectations in this new environment have changed (Lorcan, 2008). Consequently in order to respond to

changes in users' behavior, library environment, communication and telecommunication services, libraries should fundamentally redefine their future functions and services to attract users. The access via mobile phone which is continuously evolving with the users' needs should be regarded as one of the most important factors in formulating the innovative library services in the future (Negishi, 2003). Present library services by the help of mobile technologies and other similar equipments like tablet-pc, makes the bond between library services and users' daily life.

Some of the advantages of the mobile library services are:

- Providing library services beyond the location and geographical barriers.
- The use of Cell phones is simpler than PCs.
- Cost-saving in purchasing soft/hardware (compared with computers particularly laptops).
- High influence coefficient.

Note that a lot of library services such as searching in library OPAC, current awareness, book loan/reserve, database accessing, reference services through mobile phone are as well as (and in some cases) even better than computer based library software's, The importance of this mobile technology will be appear.

Problem Statement:

Because of great facilities and financial ability and governmental support in National Library and Archives of the Islamic Republic of Iran (in contrast with other libraries), and having experts in computer, librarians and information science as a potential power to represent mobile library services, and National Library and Archives of the Islamic Republic of Iran(NLAI) possible future role to determine Mobile Library Services Policy in Iran, and consequently representing software and hardware standards to other libraries far from inconsistencies in library software's, NLAI was chosen as first center to survey the feasibility of mobile library services implementation.

The inefficiency of NLAI OPAC, due to failure to provide a full range of web-based library services outside the library environment and intranet, resulted in library users' dependence on a specific location to request reserve and using some full-text resources.

One of the main results of Mobile Library Services will be users' easy access to library services and facilities. Although successful experiences in world (Cambridge University Library, MIT University Library...) it's expected that the efficiency of NLAI Library Services will be greater by using Mobile Library Services.

Literature Review:

Negishi(2003) in "development of Mobile Phone Culture in Japan and Its Implications to Library Services: Prospecting Information Services in Coming "Ubiquitous Society" reviewed mobile phone infrastructure development in Japan and consequently it's application in Japanese university libraries Including I-book service in library of Toyoma university.

Iwhiwhu, Ruteyan & Eghwubare (2010) discussed mobile phone application in library services with an emphasis on Delta State university library and enumerates some of applications and views about it.

The result of Abdulkarim, Daroos & Hussein (2006)'s article about "Mobile phone applications in academic library services" showed many respondent's willingness to receive benefits of mobile phones services.

Marato and Fang (2010) in the article of "Mobile Phone Access in Sub-Saharan Africa: Research and A Library Proposal" showed application of these services among villagers and farmers.

Camings, Meril & Borrelli, (2010) in the article about the use of handheld mobile devices, their impact and implications for library services showed that 58.4 percent of respondents who owned a web-enabled handheld device indicated that they would use small screen devices, such as PDAs or web-enabled cell phones to search a library OPAC.

M.llever, E. Katz (2006) surveyed American great university libraries policy responses to an invasive mobile technology, the results showed that libraries adopt an array of stances when approaching cell phone use within their library facilities. These approaches included structured guidelines that specifically address cell phone use posted on the library website, signs displayed throughout the library barring cell phone use, and signage that provides patrons with a list of areas in which use is permitted.

Research Questions:

1. How are the NLAI users' approach to using rate of soft/hardware facilities of mobile phones?
2. What's the view of NLAI users about the mobile phone disturbance in library?
3. What's the acceptance level of mobile library services among NLAI users?
4. According to data obtained from questionnaire which services have capability to serve in NLAI?

Research Method:

Descriptive survey method was used in this research and the required data were collected through a questionnaire developed by researcher. Data were collected from 150 randomly selected samples.

Because of uncertainty about exact number of NLAI users, 150 questionnaires were distributed randomly among users in several steps. 137 questionnaires were returned and analysis on collected data fulfilled.

Findings results:

Data analysis showed that most respondents have the following features: 26 to 30 years Age range (47%), male (61%), and postgraduate (53%), (see Table1).

Table 1: Characteristics of questionnaire respondents

Degree	Gender	Age distribution
--------	--------	------------------

25-20	31
30-26	47
35-31	11
+ 36	11
man	61
Woman	39
Undergraduates	28
postgraduate	53
PhD	14

The brand and type of device and subscribed operator of the respondents had the following priority: Nokia brand 52%, Hamrahe-Avall operator 65%, unwillingness to improve their mobile phones 46%, mobile phone capable of the multimedia and internet access (expect Smartphone operating system) 47%. Totally 54% of respondents intended to upgrade their mobile phones (see Table2), to have better capable such as Smartphone (with good configuration of hard/software's) to do multiple tasks and serve any and every purpose.

Table2. Hardware and software platforms were used by respondents

Subscribe of the		Intending to upgrade		Mobile Types			Brands								
To subscribe	Sewom operator	No	Yes. But not soon	Yes. Soon	Smartphon ^e	Basic multimedia & Internet	Basic	Other	Motorola	HTC	LG	I phone	Samsung	Sony E	Nokia
9		46	18	36	42	47	11	3	3	5	5	1	10	21	52
	Both														
	Irancell														
	Hamrahe-Avall														

Results about NLAI users' approaches and using rate of their mobile phones showed: roughly 100% of respondents primarily use their phones to make calls and send text messages routinely. Also use mobile phone to take photographs and capture/play videos, by 60% was the next favorable mobile phone value added features. (see Figure1)

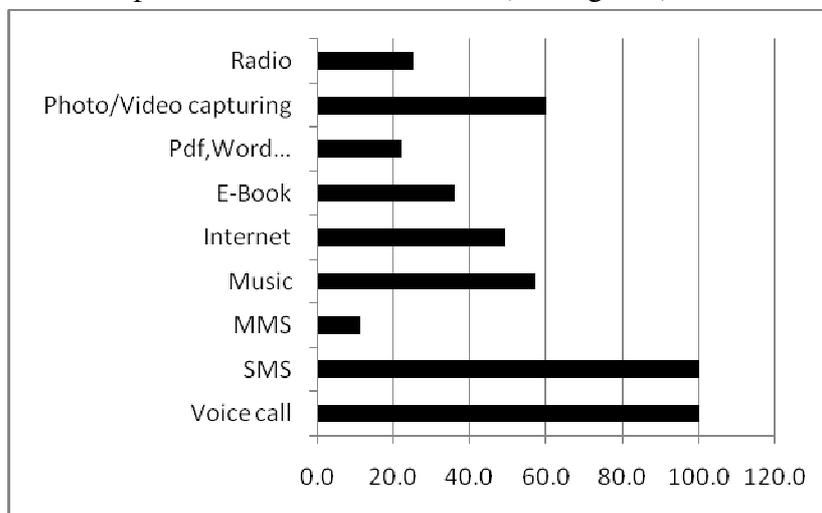


Figure 1. NLAI Users' approach and using rate of mobile phone added features

Mobile Internet Using rate by NLAI Users' via web browsing mobile phones showed that 49% of respondent (figure1) used their phones to check and explore: e-mail, chat, web logs and news, scientific, entertainment, social networks and downloading websites (see figure2).

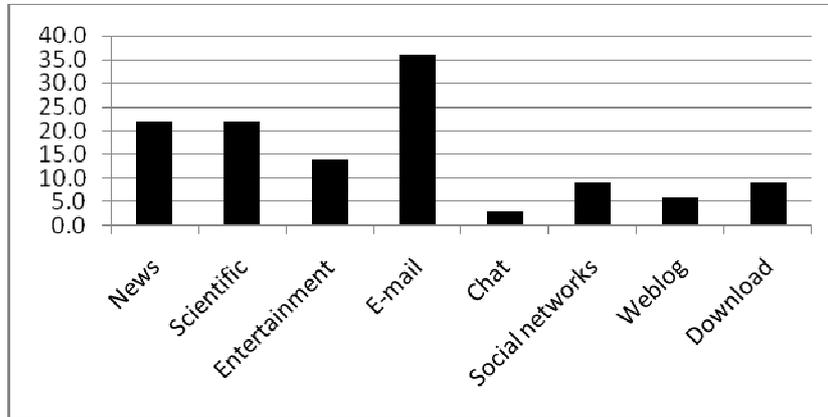


Figure2: The rate of using websites and services by NLAI users

A question about disturbance of mobile phone use in the library and also salons was asked. Results showed that 32% of respondents recognized mobile phones as obtrusive equipment; In contrast 68% of respondents agreed with the presence of mobile phones in the library and did not find it a disruptive action. (See Table 3)

Table3. Respondents' attitude about disturbance of mobile phones in library

Is mobile phone disruptive in library?	
No	Yes
68	32

To identify respondents' trends about mobile services that can be represented in libraries, some of services have been asked. Results showed that current awareness of book overdue (salons, or in NLAI public library) by 76% and providing audio tours of the library with 33% owned the lowest interest. Totally, in 79% of proposed services, respondent consent was more than 50%(see Figure3).

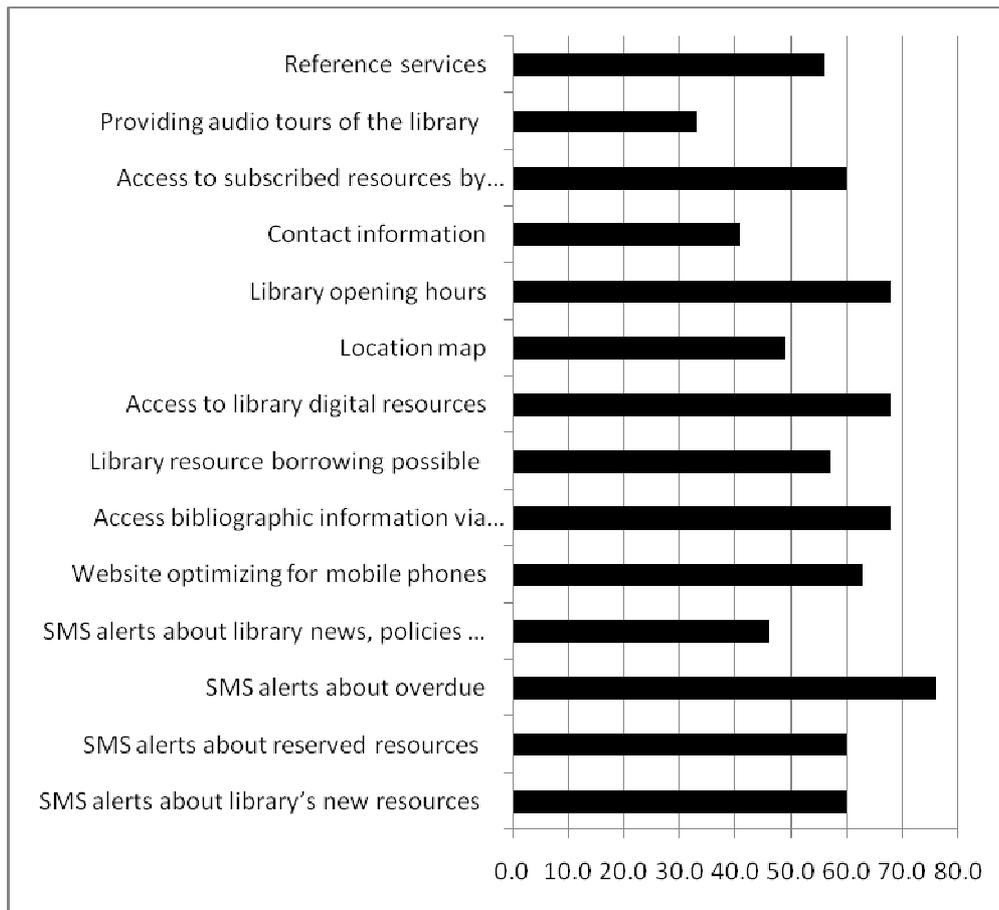


Figure3.user trends about proposed Mobile Library Services

From the viewpoint of 55% of respondents, mobile based Reference services were a suitable and inevitable service (see Figure3).

Analysis of agree respondents showed that: reference services via SMS with 55% and reference services through library website with 9% had the maximum and minimum advocacy (see Table4).

Table4.The priority of mobile based reference services platforms

SMS	Voice call	website	software
9	35	9	11

Finally 38% of respondents said if they had access to the proposed mobile services (listed in diagram 3), they never used library's computer systems or any computers.

In contrast, 9% of Respondents said that: the proposed services would not affect their attitude toward using computer to access library services. Also 11% of them predicted that their attitude would change in an average rate and they might use both of services. And also great number of respondent avoided answering this question.

Proposed services derived from questionnaire results:

As we can see in figure3, in 79% of proposed services, acceptance was more than 50%. On the other hand, proposed services had broad acceptance. This can be a great serving opportunity for NLAI to use mobile phone. So there are several implacable mobile library services (according to the user trends) for NLAI:

- SMS based services
- Website based services
- Client/server software's based services for all popular mobile platform and operating systems in Iran:
- Mobile hardware based services
- Voice call based services

1. SMS based services are:

- Awareness via SMS alerts about library's new resources
- Awareness via SMS alerts to a member who requested for a book reservation about returning of that book to circulation desk.
- Awareness via SMS alerts to members about due-day reminder.
- SMS based reference services.
- SMS alerts about library news and policies.

2. Website based services are:

- Optimizing NLAI's website to become observable through mobile phones or other small screen gadgets.
- Access to Library's location map though mobile phone.
- Access to Library's opening hours through mobile phone
- Reference services through website and email (optimized for mobile phone).
- Access to library subscribed resources (e.g. full text journals) from anywhere, by using username & password through NLAI's mobile OPAC.
- Access to Contact information in website (how to contact with library's section)

3. Client/server software's based services for all popular mobile platform and operating systems in Iran:

- Access to the library resources bibliographical information through mobile phone. Since 12 October 2011 NLAI lunched a mobile based client software on Android platform to search and access bibliographical information. But according to the survey result " Nokia brand 52% and mobile phone capable of the multimedia and internet access (expect Smartphone operating system) 47%." We can Strongly recommend NLAI manager to expand this client on other platform such as JAVA and Symbian OS.
- Providing ability to requesting library resources loaning through mobile phone client.

- Reference services based on installable software on mobile phone (like as chat software's)
- Access to use NLAI's full-text databases from all over the world by entering username and password in, via installed client software on mobile phone

4. Mobile hardware based services are:

- Providing audio tours of the library
- Providing the building's internal GPS based maps.
- Set a Bluetooth terminal to send text and multimedia files of library news and policies, to mobiles of the user's.

5. Voice call based services are:

- Reference services via call making.

Conclusions:

According to the derived results about the user's trends in using of mobile facilities, it's necessary that all Iranian libraries and NLAI as leader of them use unique mobile phone facilities to represent library services in new era. Findings also showed that 100% of respondents who owned mobile phone used two or more of its functions continuously or by need. And mobiles of 89% of respondents had support multimedia and internet browsing facilities. Also 54% said that they would upgrade their mobile phones in the future.

Using the mobile internet by 49% of the respondents (see figure1), despite high charge and low speed, shows the users' interest in this technology. Of course we shouldn't miss the point that competition in service marketing and technology development, telecommunication infrastructures in Iran will be improved and consequently costs will be decreased. As a result, we can expect a significant increase in the number of mobile internet users. Each of these developments provides new opportunities to improve library services. To encourage the users to use mobile library services, it is necessary to strengthen NLAI wireless network, so users can use the services at no charge.

It is necessary that NLAI website and OPAC will be compatible with mobile phone, tablets pc and other small screen equipments, so users can receive their requirements by using wireless services in library campus. Also it's necessary to provide a Mobile phone or tablet-pc based client for mobile phone owners, which have ability to search, reserve, inter salon loan, access to full-text resources.

The final point that is essential to be considered in mobile library services is, 100% usage rate of SMS (see figure1) and acceptability of mobile phone services based SMS, for example, awareness of SMS alert about completion of book due-day (saloon, or NLAI public library) with 76% accessibility (diagram 3) and its simplicity setup of services, SMS based

mobile services in NLAI has priority. In the end it can be predicate all of this services will be more useful and applicable, too.

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