Attitude of the Rudjer Bošković Institute's scientists to the small screen mobile devices library services - a user survey

1. Introduction

Contemporary society is in the era of mobile devices which is, considering the significant number of users of different age and social groups, clearly visible in the public space. Mobile devices have been changing rapidly, integrating different functions, which, as a consequence, blurs the boundaries between their categories.

This paper focuses to handheld mobile devices that can read HTML and have a small screen, requiring a customized display. Small screen size implies that its size does not exceed 7 inches (17.1 cm). Larger screen devices are not taken into account because due to their size and weight they are less practical and not frequently used in the public space. Furthermore, web pages on devices with larger screen can be viewed without special adjustments.

Accordingly, mobile devices referred to in this paper encompass: mobile phones, personal digital assistant – PDA, smartphone, small tablets, so called *phablets* and e-book readers with a web browser.

As mobile devices are becoming more and more sophisticated they are used for various activities: communication, business, entertainment and for finding information. Given their numerous features, mobile devices are becoming more like small computers and many people can no longer imagine their everyday life without them.

Strong impetus to mobile devices trend was given by the smartphones expansion and emergence of third-generation(3G) and later fourth generation (4G) connectivity. With the increase of access and data transmission speed the expansion of mobile devices is growing at a quick pace. (Bridges et al., 2010; Nowlan, 2013; Paterson and Low, 2011)

Considering the current situation, predictions that browsing web sites with mobile devices will soon overtake browsing with PC and laptop are more and more common. (Hanson, 2011a; Liston, 2009)

This is confirmed by the smartphones sales figures which have already surpassed the sales of personal computers. The popularity of iPhone has contributed to this figures to a great extent. (Ballard and Blaine, 2013; Liston, 2009; Little, 2011)

Sales figures of smartphones in Croatia in the first half of 2013 show an increase of 61% in comparison with the first half of 2012 while tablets salesrose by 780% in the same period. ("Prodaja smartphonea skočila 61%, tableta - 780 posto!", n.d.)

Smartphones are very popular among younger population under thirty years of age and especially among students.(Dresselhaus and Shrode, 2012; Nowlan, 2013) Mobile devices are most frequently used for surfing the web sites, checking e-mail and social networking sites and for text messaging. (Paterson and Low, 2011)

According to data, as many as 77% of the world's population own a mobile phone. An interesting phenomenon has occurred in developing countries that skipped the development of landline infrastructure and where the number of mobile phones as a cheaper and more accessible device has exceeded the number of PCs. (Ballard and Blaine, 2013; Bridges et al., 2010)

Mobile devices have enabled an unprecedented mobility and availability of information resources, literally at any time and from anywhere.

Nevertheless, a small screen is their maind is advantageand regardless of the screen increase in recent years, it is still quite difficult to use them for reading longtexts. Users still prefer to read full texts, especially those in the PDF format, on a computer. (Ballard and Blaine, 2013; Cummings et al., 2010)

Navigational limitations of small screens are certainly one of the reasons why mobile devices are primarily used for checking short, handy information like important facts, weather forecast, news, road maps, opening hours, etc.(Bridges et al., 2010)

However, some studies have shown that students also use mobile devices for finding academic contents, but academic community, including libraries, has relatively slowly acknowledged and accepted the needs of this type of users. (Dresselhaus and Shrode, 2012) In contrast, commercial publishers very soon began customizing databases and e-journals for mobile devices. (Little, 2011)

In time, libraries have turned to this type of mobile users and today a large number, especially academic libraries, intend to go in that direction. (Carlucci Thomas, 2010)

Libraries that have decided not to follow this trend state the lack of time and costs as the main reason. Another reason is the perception of the librarians who are skeptical and cannot see a need for changes. (Carlucci Thomas, 2010).

Librarians question the feasibility of investing in such a service because mobile access accounts for no more than 6% of total usage of all libraries' mobile web sites and catalogues. (Carlucci Thomas, 2010) Likewise, some users believe that customization of library services to mobile devices is unnecessary. (Cummings et al., 2010)

Before deciding on adjustment of library contents and services to mobile devices libraries should conduct a survey to determine what users' find as important. Usually, due to ignorance users are initially not interested in new services, but it has turned out that the interest is growing after the implementation. (Dresselhaus and Shrode, 2012; Karim et al., 2006)

Libraries do not necessarily need to customize all their services and resources for the access through mobile devices; they can offer what is most important for the users and what is easiest for such an adjustment.

Michelle L. Jacobs has introduced the term Information now generation – ING which best describes younger generations who use mobile devices the most and who expect all kind of information at finger tips no matter where they are.(Jacobs, 2009)

Regarding such information seeking behavior, acceptance of mobile devices as tools which could be useful in educational process is quite interesting. In this segment libraries could also have a role and applicationas "mobile libraries".

With the expansion of mobile devices, libraries have faced the new challenge and question whether they should except it or not. According to the current situation, this trend is getting stronger and many libraries accept it. A continuing growth of mobile library resources and services is thus expected.

1.2. Experience of libraries and general recommendations

Meier divides library offer through mobile devices into five categories: library mobile site, text messaging, online catalog search, resource access, new tools and services. (Meier, 2010)

Usually the first step for libraries going mobile is to create a mobile library web site, which is followed by the customization of other services, tools, and even online catalogues. Results of the studies have shown that mobile information/services that are requested most are the following: working hours, location of the library, contact information, working room reservations, checking PC availability, checking due date, books reservation and renewal information, news and events information. Users also find important the tools developed by the libraries, such as applications for orientation or virtual walk and for locating items on the shelves. (Karim et al., 2006; Paterson and Low, 2011)

Users have also expressed a desire for mobile friendly online catalogues and databases, which may come as a surprise because they both require a more complex search and downloading files which is complicated due to technical limitations – primarily because of the small screen and difficulties that users may have when using a small keyboard. (Ballard and Blaine, 2013; Dresselhaus and Shrode, 2012; Meier, 2010; Murray, 2010; Nowlan, 2013; Paterson and Low, 2011; Pendell and Bowman, 2012)

In order to obtain information in as simple manner as possible most "mobile version" catalogues (MOPAC) offer only simple search.[1] (Meier, 2010; Murray, 2010) Users have ambiguous relationship with MOPAC. On the one hand, the ability to search the library catalogue has been found by a good portion of users as very useful for mobile devices, (Paterson and Low, 2011) but on the other hand, the frequent catalogue users will not use a mobile device as their primary entry method into the library online catalogue. (Cummings et al., 2010)

Commercial software developers of online catalogues have already released versions for mobile devices (such as Aleph, SirsiDynix, Innovative, AquaBrowser), but open source solutions (such asjQuery, Koha, VuFind, Sopac, Scriblio) have appeared as well.

Information resources of commercial publishers/vendors, especially the databases, are in most cases mobile friendly, but the provision of an easy and clear way of access authentication is a very important component for the users.[2] (Meier, 2010)

Interest of users in access through mobile devices is most likely influenced by a good organization of access, so that navigation by means of clearly worded labels is particularly important for obtaining the information as easily as possible. It is necessary to reduce the number of links within the text and to abolish unnecessary features such as mouseovers. Too many graphic elements, tables and long texts should be avoided as well as theuse of Flash because many operating systems do not support it. Also, it must be kept in mind that users transmit their previous experience from desktop environment. (Ballard and Blaine, 2013; Hanson, 2011b; Lippincott, 2010; Pendell and Bowman, 2012)

Users are generally put off by excessive clicking and "walking" through too many web pages to find the desired information, and this is the feature that mobile devices display even to a greater extent. It is more likely that users will give up searching in the mobile than in a desktop environment if it takes too long to find an information. (Pendell and Bowman, 2012)

Finally, usability testing of mobile web sites and services has to be done for determining and eliminating the difficulties that users encounter.

2. Rudjer Bošković Institute's library mobile users

2.1. Objectives of the survey

Regarding the general expansion of smartphones,mobile friendly library web sites and our interest in customizing Rudjer Bošković Institute's library (RBI) web site and services for small screen mobile devices, a survey was carried out.

The objectives were to determine what types of small screen mobile devices are used and for what purposes or is there atendency for using academic/educational contents. Furthermore, the aim was to identify whether our users need mobile friendly library web site and services at all. In addition, which library resources/services are considered important for mobile friendly customization and to what extent. Finally, the results would serve as an orientation in building mobile friendly library web site and services.

We believed that our users were still unaware of the possibility of accessing library web sites and services through mobile devices in general; therefore, this survey also had a role of raising awareness and stimulating their interest.

Our hypothesis was that it was more likely for older respondents than for the younger ones not to own any kind of small screen mobile device and that older respondents supported mobile friendly customization of library resources and services to a smaller extent.

Today, women follow technological trends, almost as much as men, and it was assumed that there were no gender-related differences regarding the possession of small screen mobil edevices, nor the differences with respect to the support to mobile friendly customization of library resources and services.

2.2. Methodology

Data collection was performed through aquestionnaire containing 10 questions. Questions were mainly multiple-choice and close-ended, but for the additional option there was *other* field.

The pilot survey was conducted among RBI librarians, and after its evaluation the questionnaire was finalized. The web survey was launched on October 3, 2013 and it finished on November 19, 2013.

The online questionnarie was created by LimeSurvey tool and for mobile optimized version, SurveyMonkey.com service was used too. The latter was used to collect data from library Facebook page fans.

A link to the questionnaire was placed on the library homepage, library blog and library Faceook page as well. RBI employees were also notified by a general e-mail and subsequently by personal e-mail messages, which has brought the largest response. Nevertheless, the survey was anonymous.

Rudjer Bošković Institute's Library is the largest Croatian scientific library in the field of natural sciences (physics, mathematics, electronics, chemistry, medicine and environmental sciences). The main users of library resources are RBI scientists who were, as a consequence, the target population.

Since the library is also open to students and faculty of the Croatian universities, and there are many virtual users of the library web site, as well asa respectable community of library Facebook page (708 fans), we also wanted to find out their opinion.

According to the author's experience, a great number of Facebook users use small screen mobile devices. Therefore, they would probably be the first ones who could acquire the habit of using mobile library resources/services. It was thus assumed that Facebook fans would be interested to participate in this survey. Contrary to this expectation, they failed to respond, although many of them have seen the posts about the survey. The reason for that could be the fact that the majority of fans are not RBI scientist and they probably thought that the survey did not apply to them.

2.3. Results

We received 295 questionnaires, 10 of which were excluded because they were unfinished[3] or mobile devices that have been chosen have larger screen (more than 7 inches).[4]

Therefore, the final number of 285 questionnaires was taken into account. After excluding the respondents who answered that they did not own a small screen mobile device,[5] a total of 240 questionnaires was processed.

The collected data has shown that the majority of participants were RBI employees - 257 (90%) and only 28 (10%) of the respondents were from other institutions. Their answers mainly came through the Facebook page.

Compared with the total number of RBI resident scientists (587)[6], those who participated in the survey accounted for 44%.[7]

The number of survey participants according to their age has shown that the group aged 31 to 40 (113 i.e.40%) is the most represented one. The second largest age group is 41-50 (77 i.e.27%), followed by the age group 21-30 (51 i.e. 18%), 51-60 (28 i.e.10%) and older than 61 years (16 i.e.6%). There were no respondents in the age group under 20 years. This distribution is according to the expectations.

The number of survey participants according to gender has shown that female respondents are slightly more numerous (161 i.e.56%) than male respondents (124 i.e.44%).

2.3.1. Types and models of small screen mobile devices

Considering the types of small screen mobile devices, the survey has shown that the largest number (58%) of respondents own smartphone/tablet/phablet.[8,9] The second most common device is a mobile phone (33%), followed by the e-book reader with web browser (8%) anda personal device assistant (1%). It should be emphasized that a significant number of users still do not have any kind of a small screen mobile device. (45 respondents, i.e. 16%).(see Fig. 1)

The comparison across and within the age groups shows that the group of respondents older than 61 years has the highest percentage of those who do not own any kind of small screen mobile devices (44%), followed by the age group 51-60 (29%). The lowest percentage of those respondents are in the group aged 20-30 (9%) and in the group aged 31-40 (10%).

Regarding our hypothesis, the correlation of the respective variables was performed: respondent's age and "possession of the small screen mobile device".[10] Correlation [11] has shown statistically significant difference ($F_{(4,280)}$=4,627; p<0,01) between the oldest age group (over 61 years) and the group of 21-30 years as well as between the oldest age group and age group 31-40 years. Respondents from the oldest age group have more likely responded that they do not own any kind of small screen mobile devices, in comparison with the respondents of the two younger age groups. Such results have confirmed our hypothesis.

As far as gender is concerned, our hypohtesis is also confirmed, because it has been found that there is no statistically significant difference between the gender of the respondents and their answers to the question about having a small screen mobile device ($t_{(285)}$=0,189;p>0,05)[12].

Only 16% of female respondents do not own any kind of small screen device and 15% of male respondents have declared the same.

One respondent has given an explanation for not having a small screen device: "I used to have a tablet and a Blackberry but I got rid of them, because I have vision problems and because it simply gets on my nerves to constantly scroll down the screens".

During the survey, it has been noticed that persons who do not own a mobile device are somehow embarrassed because of it and they did not not want to fulfill the questionnaire.

Figure 1. Types of small screen mobile devices

The survey has found that Samsung Galaxy is the most popular model of small screen mobile devices (22%).Second place is shared by Nokia mobile phone and iPhone (both with 13%). Sony Ericsson Xperia smartphone is in the third place (7%), followed by HTC One smartphone (4%) and SonyEricsson mobile phone (4%). Several respondents did not know the model of their mobile device (1%).

Apart from the models specified in the questionnaire respondents were able to add other models which make a total of 15%. Again, smartphones and mobile phones are the most represented among them.

Answers to this question have confirmed the data gathered in the previous question, i.e. that smartphones/tablet/phablet are the most widespread small screen mobile devices followed by mobile phones. (Fig. 2)

Figure 2. Models of small screen mobile devices

2.3.2. Operating systems

Regarding the operating systems (OS),Android (57%) proved to be the most popular and the second most popular was iOS (12%). It is important to mention that quite a number of respondents did not know the operating system of their device (21%). It can be assumed that most of them do not own web enabled cell phone and some respondents mentioned this in the *other* field. (Fig. 3)

Figure 3. Operating systems

2.3.3. Features used on the small screen mobile devices

Considering the small screen devices features,19 features have been listed as well as the *other* field where some extra features could be added. Furthermore, the aim was to assess the usage frequency and the users could choose between: *daily, occasionally* and *rarely or almost never*. Respondents could skip the features if they do not use them at all.

Looking at the responses for each single feature has shown that the most common response for reading full text e-journals or e-books on a small screen mobile devices is rarely or almost never (61% e-journals, 54% e-books). These results were expected, because of the difficulties people have while reading on a small screen. However, as there are also respondents who do it occasionally or even daily, this leads to a conclusion that this activity may intensify in the near future.

Blogs are read rarely or almost never (60%) which is correlated with the ever-growing importance of social networks in the recent years.

As could be expected, checking of e-mail is mostly a daily (63%) or occasional (24%) activity.

Reading the newspapers is predominantly an occasional activity (43%), but there is also 31% of daily readers.

Although mobile devices are occasionally used for educational purposes (41%), significant number (35%) use them for this purpose rarely or almost never.

Slightly surprising is a larger number of users who use Facebook rarely or almost never (43%) compared to those who use it daily (33%). Twitter is not so popular in Croatia and it is, as a consequence, rarely or almost never used (89%).

The most common response for taking pictures and using GPS is occasionally (62% and 56%, respectively).

Games are played rarely or almost never which could be assumed, considering the age distribution of the respondents (63%).

Scanning of barcodes and QR codes is rarely or almost never done (77%), but it is worth mentioning that there is 19% of those who do it occasionally.

Internet searching and searching of handy information are, as expected, performed by a large number of users as a daily (53% and57%, respectively) or occasionally activity (36% and 31%, respectively). A similar activity, checking of information is occasional (41%), but there is also a significant number of those who do it daily (33%). These results are in accordance with the results from the previously mentioned studies.

Listening of music is done occasionally (40%),but almost the same number of respondents do it rarely or almost never (39%).

As it could be expected, making phone calls and texting havebeen chosen as a daily activity by the greatest number of respondents (88% and 72%, respectively).

Some other features that the respondents have addedare: mobile banking, instant messaging, Viber, task lists, calendar application, remainders, Skype, Whatsapp.

According to the gathered data, the top three daily used features are: phone calls (88%), texting (72%) and checking of e-mail (63%). The top three occasionally used features are: taking pictures (62%), GPS (56%) and reading newspapers (43%) and the top three rarely or almost never used features are: Twitter (89%), scanning barcodes and QR codes (77%) and games (63%).

The obtained results point that small screen devices are, to some extent, used for educational, academic and informational purposes (reading of e-books and e-journals, education, data checking, internet searching and searching of handy information), but non-academic purposes still predominate (texting, reading e-mails, phone calls, taking pictures).(Fig. 4)

Figure 4. Features used on the small screen mobile devices

2.3.4. Visiting rate of the RBI library website/services

More than a half of the respondents have not yet visited the RBI library web site or library services with the small screen mobile devices (57%).This result confirms the statistical data obtained through Googly Analytics tool, according to which in the period from October 3, 2012 to October 3, 2013 only 2% of the users accessed by any kind of mobile device.

Furthermore, 25% of the respondents visit rarely, 13% visit occasionally and only 5% visit often the RBI library web site. (See Fig. 5) Only a few respondents have indicated what they visit: databases, Croatian Scientific Bibliography, calendar of events, library catalogue, and they search for journals.

Figure 5. Visiting rate of the RBI library web site/services

2.3.5. Customizingof RBI library web site/services

Respondents have stated that RBI library shouldcustomize library website/servicesforviewing on small screen mobile devices (154i.e.64%), and only 15 respondents (6%) think that it should not, but there is also a significant number of respondents (71i.e.30%) who have answered that they do not know.(See Fig. 6)

The highest percentage of respondents who were undecided are aged over 61 years (33%), but almost equally high percentage of undecided respondents is seen in other age groups: 41-50 (32%), 51-60 (30%), 31-40 (29%) and 21-30 (26%). Considering the gender of undecided respondents 30% were male and 29% female.

It is hard to interpret the substantial percentage of the undecided respondents but we believe that the main reason is a lack of knowledge about the possibilities and benefits of mobile friendly library resources and services.

Correlation between the respondents' age and the variable"mobile friendly customization of RBI library resources and services" has shown that there is no statistically significant difference ($X^2_{(8,N=240)}$=12,38; p>0,05)[13], which does not support our hypothesis.

Statistically significant difference has not been found in correlation between the same variable and the respondents' gender ($X^2_{(2,N=240)}$=0,76; p>0,05), which confirms our hypothesis.

A respondent made the following comment: "It's nice that library explores this area. Access with a small screen device will become important sooner or later, therefore it is better to think about it in advance. Compliments to the Library."

Another respondent who no longer owns a small screen mobile device thinks: "For those who use these devices, it is useful to customize a web-interface."

Here are some other comments which also give a good insight into the mindset of the respondents:
"I think these devices will soon become the most commonway to search the Internet."
"Although, personally, I almost never use these devices and I find the data I need from web pages in another way, I think it would be good to have these options."
"Today virtually all is accessible via e.g, a smartphone, but I do not really know if I would use the library services via a mobile phone..."
"Mobile devices have been increasingly replacing desktop computers and people use them more and more."
"At present I do not need mobile devices, but I do not know if I would need them in the future."
"It is for younger generations, older generations do not use them so much."

Some respondents have pointed out the common reason for not using the small screen mobile devices:
"I think it would bevery useful. I do it very rarely because of poor visibility of the contents on a small screen."
"Personally, I would not approach via the small screen because it is difficult to read long contentson it."
"For content searching I would always prefer PC."

There are also respondents who do not see advantages of small screen mobile devices:
"I do not see why I would use small screen if you can use the big one."

These results and especially the comments indicate ambivalence of the current situation. On the one side, there is acceptance, understanding and even a need for mobile friendly library services and, on the other side, respondents experience technical problems and small screen limitations and mainly because of that they are not in favour of such mobile devices.

Undecided respondents are quite an interesting group because they are potential users who could adopt library resources/services on small screen devices if the benefits were pointed out to them, and that is a task as well as a challenge for librarians.

Figure 6. Customizing of RBI library web site/services

2.3.6. Importance of library resources/services

In the last question we wanted to determine the importance of 13 library resources/services for the small screen mobile devices access. The scale of responses were: *unimportant, partly important, important, very important, most important*.

Online databases were predominantly identified as important (35%) and only 4% of the respondents considered them as unimportant.

Majority of the respondents identified Croatian Scientific Bibliography, as important (30%), but it is also worth mentioning 21% of the respondents who found it very important.

Regarding the e-journals database (Elektronische Zeitschriftenbibliothek (EZB)), 35% reported it as important, but there is also a significant percentage of respondents who found it partly important (25%).

As was the case with the response to the question about the small screen mobile devices features, according to which Facebook is not heavily used, in this question 52% of the respondents considered library Facebook page as unimportant as well.

Library catalogue is for 34% of respondents important, but 27% considered it as partly important, and it was a little bit alarming to find out that 21% answered that library catalogue is unimportant.

Library blog is obviously unimportant to users because 43% has chosen this option, or just partly important (35%).

Data on the importance of the contact information (e-mail of the library and/or librarians, working hours andlocation) show that the majority (33%) indicated them as important, but there is a significant percentage of those who found it very important (17%) and most important (14%). These results also confirm the findings on great importance of contact information from other surveys.

Interlibrary loan service (SEND) is important for 30% of the respondents, but there is a high percentage of those who find it unimportant (27%).

Live chat with librarian is for the majority just partly important (39%) and quite a high percentage (34%) consider it as unimportant.

Pero - electronic journals search engine is partly important (34%) and there is also a significant portion of respondents who considered it unimportant (22%).

Full-text Institutional Repository of the Ruđer Bošković Institute (FULIR) is partly important (31%) and for 29% unimportant. This can be accounted for by the fact that repository is a relatively new service and that reading of full texts on a small screen is not the respondents' preference, as was seen in the question about the features.

Lecture halls reservations are important for 28% and there is a significant number of those who find it very important (18%). However, it is difficult to draw a conclusion because 23% indicated this service as unimportant and the same percentage as just partly important.

Finally, all library pages are predominantly partly important (35%), but there is also a noticeable percentage of respondents who consider them as important (29%).

Based on the collected answers, the top three *most important* resources/services were: contact information (14%), Croatian Scientific Bibliography(12%) and third place is shared by library catalogue and reservation of lecture halls (8%).

Nevertheless, it should be emphasized that the respondents have mostly chosen between *important* and *partly important*. *Very important* and *most important* was chosen significantly less frequently (*most important* gets only 6% on average).

The top three *unimportant* resources/services were: library Facebook page (52%), library blog (43%) and live chat with librarian (34%). (See Fig. 7)

In order to obtain a more relevant picture and to facilitate a decision about the importance of each service/resource for building a mobile friendly version, categories *partly*

important and *unimportant* were combined on the one hand and *important, very important* and *most important*on the other.

Accordingly, it has been proved for the following sources/services: Croatian ScientificBibliography (95%), e-journals database (ElektronischeZeitschriftenbibliothek - (EZB)) (57%), online databases (57%), contact information (64%) and lecture halls reservations (54%), that the users want them to become mobile friendly.

Library catalogue (52%) and Interlibrary loan service (SEND) (50%) are on the boarder line, which means that they could gain importance in the near future.

EZB database and the majority of commercial databases (Web of Science, Scopus, ScienceDirect, Ebsco, Emerald) already have mobile friendly versions but it is very likely that the majority of the users are not aware of it.

Library blog (78%), Library Facebook page (76%),and live chat with librarian (73%) are predominantly not interesting for the users. However, such results, especially those concerning the blog and library Facebook page, could encourage us to work more on their promotion, because these channels are intensively used for the announcement of library resources and services.

Figure 7. Importance of library resources/services

3. Conclusion

The devices for accessing information have been changing quickly and the information behavior changes as well. Mobile phones are still viewed as devices for making phone calls and sending text messages, but with smartphones this situation has changed because they are used for many other activities, including information searching. (Li, 2013)

Considering the constant increase in the number of small screen mobile devices users and this kind of access to the web sites in general, it could be expected that library services and resources will be more and more accessed in this way.

Studies have shown the users' interest in and a growing demand for using library services with small screen mobile devices. Today we can talk not only about the "mobile library" but also about mobile users in the sense that library resources and services have become available practically from any location and at any time like never before.

However, a large number of users of the small screen mobile devices does not guarantee the visits to the library web sites and resources by itself. Accordingly, it is necessary to work on raising the awareness and on users' education about such possibilities.

The answer to the question why libraries should customize their services to small screen mobile devices and why users would access library resources in this way has already been given by previous trends (web pages, blog, social networking) which posed the same questions before the librarians in the past. Despite the doubts that accompanied the introduction of every one of these trends, librarians have managed to use them to the benefit of the libraries and they attracted users to use them. Considering such a positive experience, it could be assumed that the same situation will repeat with the library services through mobile devices.

Current situation indicates that we are ina transitional period in which mobile devices are increasingly popular and accepted in general, but due to technical limitations of a small screen and keyboard, users still perceive them as handy tools that are used when someone is not in a position to use a computer. However, this could change soon according to a survey which showed that users preferred using their smartphones while at home with access to either laptops or desktops.(Becker et al., 2013)

Undoubtedly, libraries already work on approaching the users through mobile devices and soon this kind of library presence will be customary. Some predict that by 2015 it will be nearly impossible to find a library without amobile access. (Ballard and Blaine, 2013) One thing is for sure, this ever-growing mobile society can not be ignored and librarians would have to find benefits for the libraries.

To the authors' knowledge, there is currently no library in Croatia which provides mobile friendly web sites and services, but as all the previous trends did not bypass Croatian libraries, this trend will surely emerge.

Our study has shown that RBI library users are definitely interested in accessing library services and resources through small screen devices and that some of them are even aware of new directions in searching of information.

The obtained results do not stand out compared to other surveys in general. Nevertheless, they gave us a precise insight into the RBI library users' needs for each existing library resource/service.

A total of 64 % of respondents want mobile devices customized library web site and services and this number will most certainly grow, as a result of which the library should seriously take into account mobile users.

The respondents identified a wide variety of services that they wanted to be offered by the library. Some of them already have a mobile version but, like in the case of Facebook, it does not necessarily mean that they are important for the users.

The survey also gave us an important insight into using small screen mobile devices for academic/educational and similar informational purposes. Although these features are not prevailing, they are used to a certain extent, which implies that the library resources and services, with a good promotion, could attract more mobile users.

Considering the limited budget, RBI library is not in the position to purchase commercial mobile library applications, but there are some open access alternatives which could be considered.

Priority should be given to customization of the library homepage where the quick links to the most wanted resources,according to this survey, can be found.

Customization of Croatian Scientific Bibliography and lecture halls reservations as well as customization of the library catalogue and Interlibrary loan service (SEND), are more complex tasks which would take more time for the library.

What library could do in the short run is to provide users' education and promotion of the existing mobile friendly versions of online databases and the electronic journals database (EZB).

Notes

1. From experience, it is known that the majority of users use simple search anyway.
2. Wireless network is used for accessing via mobile devices, and VPN (*virtual private network*)or proxy are used to access subscribed information resources from outside the home institution.
3. The first four questions were obligatory and if the respondent did not answer to one of them the questionnaire was not completed. Other six questions were optional.
4. iPadwas a device specified in most of these cases.
5. In the forth question respondents should specify the types of small screen mobile devices they possess, or they could declare not having it.
6. This number encompasses research staff (scientists, post-doctoral fellows, graduate students, support scientists, library and IT staff).

7. According to Raosoft Sample Size Calculator sample size of 233 respondents with an accepted margin of error of 5% and a level of confidence of 95% was needed.

8. Respondents could choose more than one small screen mobile device.

9. We felt that due to unclear boundaries between these mobile devices the respondents could have difficulties to choose the right one so we put them together in the same group.

10. Natalija Stanković, B. A. in Psychology, has made the correlations of variables by using SPSS software.

11. Scheffe's post hoc test; analysis of variance.

12. *t*-test.

13. C*hi-squared* test.

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