New Technologies – New Possibilities.
A Case of Electronic Publications Management Information System (ELVIS)[1]

Agnė Bankauskaitė: Vilnius University, Faculty of Communication, Saulėtekis av. 9, 1st building, LT-10222, Lithuania, agne.bankauskaite@kf.stud.vu.lt

Fausta Brasaitė: Vilnius University, Faculty of Communication, Saulėtekis av. 9, 1st building, LT-10222, Lithuania, fausta.brasaite@kf.vu.lt

Monika Parėdnytė: Vilnius University, Faculty of Communication, Saulėtekis av. 9, 1st building, LT-10222, Lithuania, monika.parednyte@kf.stud.vu.lt

Abstract: *Accessibility of information and reducing social exclusion of visual impaired people is a global problem nowadays. Digital libraries and information systems including global initiatives like TIGAR are the priority today to diminish the information gap experienced by visually impaired users. Lithuanian Library for the Blind is a unique institution serving visually impaired people in Lithuania developing and implementing ELVIS – Electronic Publications Management Information System. The main purpose of ELVIS is to centralize, organize, process, analyse, display, and provide audio books, audio magazines, and books in DAISY (Digital Accessible Information System) format, texts in print, and other electronic publications. The main tasks of the paper are to reflect on the experience of developing ELVIS system for the blind and visually impaired users and to reveal its advantages and ways for further improvement based on the findings of the research of information needs of ELVIS users.*

Keywords: visually impaired people, electronic publications, ELVIS system, Lithuanian Library for the Blind.

Introduction

Visual impairment is a global issue. It is estimated that all over the world 40 to 45 million people are totally blind, 135 million have low vision and 314 million have some kind of visual impairment (Velásquez, 2010). Unfortunately, these numbers tend to grow significantly. It is clear that much more public attention is needed for the issues of visual impairment as it is predicted that in 2020 the number of visually impaired people globally will double. The social exclusion due to the lack of access to information remains one of the biggest problems visually impaired people face with as long as they can't use all of the public services they need. It is reported that less than 5 percent of published materials and less than 20 percent of websites are accessible to blind and visually impaired users (International Federation of Library Associations and Institutions (IFLA), 2012).

In the context of permanent information deprivation services of libraries for the blind and visually impaired users are of particular importance. According to World Blind Union, 90 % of books in accessible formats are published by organizations serving the blind and visually impaired users (World Blind Union, 2010). It means that libraries for the blind are often the most significant and sometimes the only source of quality information that enable their users to study, work and provide an opportunity for a meaningful leisure. IFLA defines libraries for

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the blind as public libraries that are the major gateways to knowledge for visually impaired persons (International Federation of Library Associations and Institutions (IFLA), 2005b).

Development of information and communication technologies has a profound impact on information provision in the libraries for the blind worldwide. The paper focuses on digital libraries for the blind and visually impaired users as an effective mean of access to information. It reflects on the experience of developing a digital library for visually impaired users – ELVIS (Electronic Publications Management Information System) in Lithuania.

Worldwide development of digital libraries for visually impaired users

The development of digital information sources and digital libraries for visually impaired started in the end of the 20th century and intensified in the very beginning of the 21th century. Early projects analysed the issues of organizing information access for visually impaired persons in digital libraries including research of information behaviour, development of user interface and navigation means (Golub, 2002). In 2005 the IFLA survey of digital libraries for the blind identified 7 libraries for the blind that developed or were planning to develop a digital information system. Five digital libraries were fully functional (International Federation of Library Associations and Institutions (IFLA), 2005a).

Contemporary digital libraries for visually impaired users function due to mass digitisation, well-developed collaboration with publishers and volunteer programmes. Such libraries are different from digital information systems in other domains. They are usually information systems of limited access only to those users who can prove their disability. Digital libraries for the blind serve diverse user needs because they are the main sources for different purposes – learning, work, leisure and self-development activities (Manžuch, 2012).

Notable examples of efficient digital libraries for the blind include *Bookshare* (USA) by non-profit organisation *Benetech* and *Open Library* by *Internet Archive*. The *Bookshare* focuses on digitisation and converting digital materials to accessible formats by collaborating with a wide network of authors, publishers, universities, schools and volunteers. Currently, there is more than 200000 books in Bookshare that are accessible in DAISY, Braille Refreshable Format (BRF) (Bookshare, 2013). Similar initiative of providing digital materials for visually impaired persons is implemented by a non-profit organisation *Internet Archive* which develops a project *Open Library*. Since 2010, the initiative has opened access to more than a million publications that are available for studying with screen readers or in DAISY format (Internet Archive, 2010).

Libraries for the blind worldwide currently move towards developing a global digital library that enables exchange of materials across borders and more efficient provision of information to visually impaired users. The most prominent effort in this domain is TIGAR (*Trusted Intermediary Global Accessible Resources*) – an international project launched in 2010 that is aimed to organise international exchange of copyrighted materials among libraries serving persons with print disabilities (World Intellectual Property Organisation, 2013).

ELVIS – the Lithuanian digital library for the blind and visually impaired persons

The Lithuanian digital library for visually impaired persons is developed and managed by the Lithuanian Library for the Blind. It is the library of national significance that serves blind and visually impaired users and is the largest publisher of books in accessible formats in Lithuania.

In 2010-2012 the library implemented the project "Virtual Library for the Blind". The main task of this project was to develop an informational system ELVIS (Electronic Publications Management Information System) aiming to provide remote and mobile digital services to the visually impaired users. Original idea was surpassed – the system covered numerous functionalities. The most important task was to create a user-friendly environment for visually impaired people using assistive technologies (Juchnevič, 2012b). The best practices in the domain of digital libraries for visually impaired users were employed to create ELVIS. The typhlospecialists, blind and visually impaired users were involved in the development processes. The project was financed by the European Regional Development Fund and the Lithuanian state budget (Juchnevič, 2012a).

The electronic publications management information system ELVIS enables to serve its readers at a distance, 24 hours a day, on weekends or holidays. It ensures access to fundamental library services in cyberspace: searching, getting publications online, sharing opinions with other readers, ranking documents, getting the latest news, etc. ELVIS centralizes, organizes, processes, analyses and provides sound and other digital documents for visually disabled. The system structure is simple and clear, personalized. A person who is not a librarian or doesn't have any specialised knowledge can perform search very easily.

The system will be used not only by persons whose blindness (or other special needs) were officially diagnosed, but also by people with other disabilities (or needs) that prevent or become an obstacle for such users to read printed text.

System of ELVIS started with almost 7000 of various digital publications. Today 252 registered ELVIS users and 75 unique readers in ELVIS, who are registered only in this system, finding appropriate and necessary services here, can choose from more than 11 913 titles of digitized documents, new audio publications, DAISY books, audio magazines, and typhlological audio and textual documents. The number of downloads has already reached 5 222. This system is a growing organism – its' mission is to accommodate every document of Lithuanian Library for the Blind available in audio and other digital formats (Januševičienė, 2012).

The research of information needs of ELVIS users

In order to reveal advantages and ways for further improvement of the ELVIS system, *"ELVIS the research of informational needs of users"* was carried out in Lithuanian Library for the Blind. Online survey (hosted by ELVIS system) was used, and the research was carried out during the period of February 25-May 31, 2013. The survey consisted of five questions. Results analysis is based on 11.3% of the online respondents' feedback (Lithuanian Library for the Blind, 2013).

Results. More than a half of respondents claimed that ELVIS definitely changed their reading habits and the third part of respondents indicated that their reading habits were changed only slightly. Nearly fifth part of respondents stated that ELVIS didn't change their reading habits at all (Figure 1).

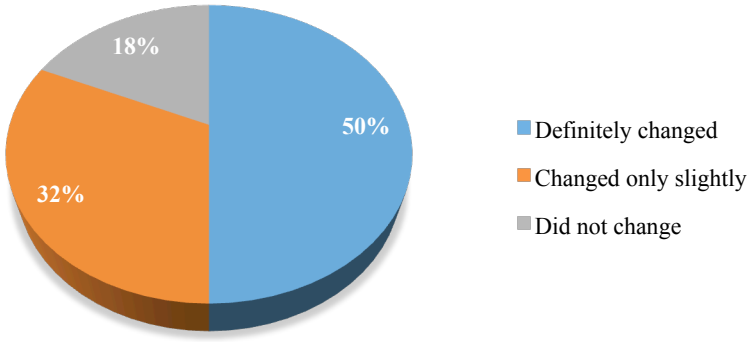

Figure 1. Change in reading habits

The question on how ELVIS system helps to find necessary variety of the sources, more than a half of respondents stated that they definitely succeeded in that: according to their answers ELVIS allows them to find more varied literature. But it is a point for further optimization of the system because nearly more than a fourth of the respondents said that ELVIS had no effect on their selection and nearly fifth of the respondents said they had hardly have any effects on their selection of literature (Figure 2).

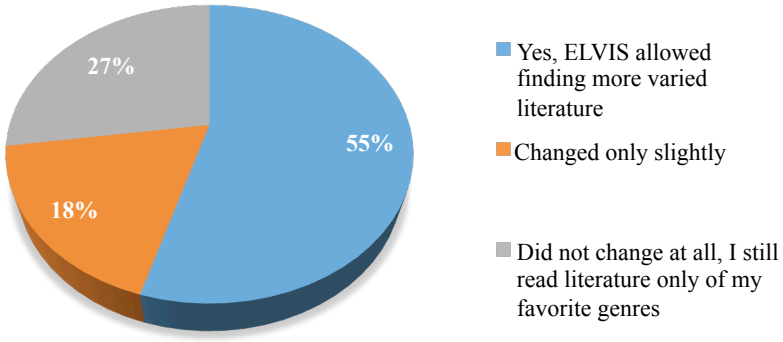

Figure 2. Change in literature genres

Answers to the third question resulted to over four fifths of respondents who have read more sources after using ELVIS than before. Nearly one fifth said that it didn't change the situation (Figure 3).

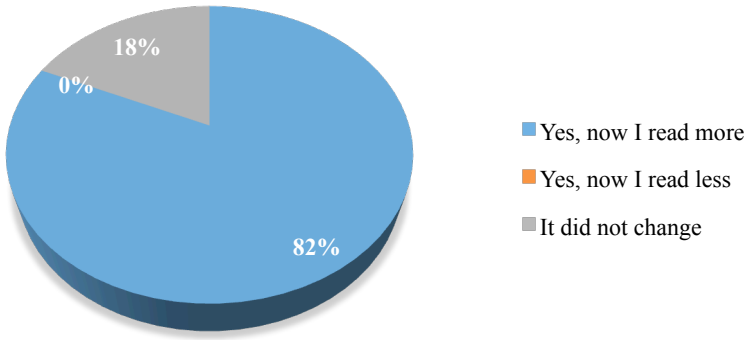

Figure 3. Change in the amount of books red

Following the fourth question it was found that the most of the respondents said that ELVIS has no effects on their reading time during the day. Only not significant part of respondents

answered that they started reading during different part of the day when compare with the situation before using ELVIS (Figure 4).

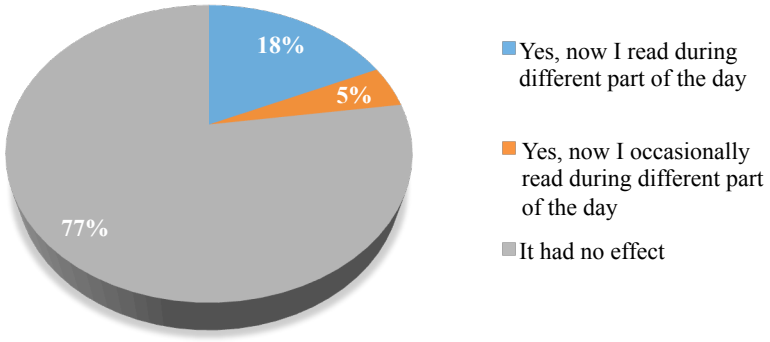

Figure 4. ELVIS influence on reading time

The results according to fifth question illustrated that significant more than half of the respondents read book reviews of the other respondents and take into consideration occasionally while more than one third of the respondents said that they do not read book reviews or take into consideration (Figure 5).

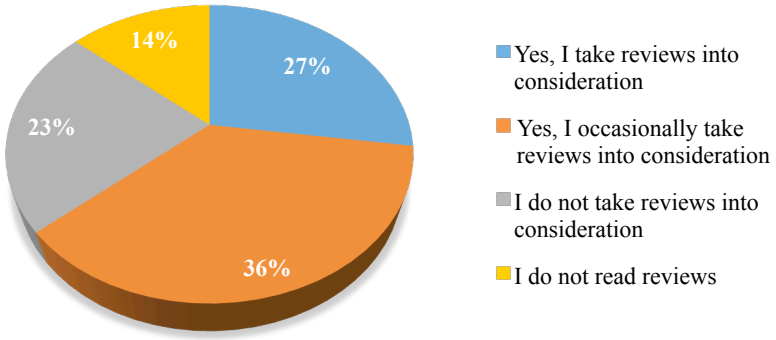

Figure 5. Influence of other users books reviews

Conclusions

The Lithuanian digital library for visually impaired persons ELVIS is a significant step towards the development of the national digital tool for effective information provision to these user audiences. Analysis of digital library trends worldwide and ELVIS functionalities shows that this system is in line with general developments in the field.

"ELVIS the research of informational needs of users" revealed its positive effects on most users' reading habits. It found out that ELVIS users read more and various sources after using ELVIS than before. Most of ELVIS users read book reviews posted by others and take them into consideration.

The next step for development of ELVIS is building the critical mass of digital content in accessible format, enhancing existing collaboration networks and volunteer programmes to establish an efficient workflow for delivering access to up-to-date content for studies, work and leisure.

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