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## Historical Newspapers Content as a Base for Scientific Research – Europeana Newspapers Project

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### Abstract:

*University Library “Svetozar Marković” is one of the seventeen partner institutions participating in the three-year project Europeana Newspapers (2013-2015). During the project around 18 million digitized newspaper pages in full text will be delivered to the European Library and Europeana. Our library contributes to the project with approximately 400,000 digitized pages from 45 titles of digitized newspapers printed mostly in Cyrillic and covering the period from the mid 19th to the mid 20th century.*

*University Library project team have detected and analytically processed over 2,000 articles from the old Serbian newspapers making those articles about everyday life searchable through corresponding metadata and annotations. In addition to that, OCR (Optical Character Recognition) results for the given materials have been checked and evaluated.*

*During 2014, University Library project team will perform manual corrections of OCR for the title “Ratni dnevnik” which contains official reports about the operations in the WWI and which is a part of a wider project Europeana Collections 1914-1918. Also, University Library in cooperation with the National Library of the Netherlands has planned to participate in the development of NER (Named Entity Recognition) for the Serbian language.*

*Dissemination of the newspaper content to the scientific community in Serbia will be carried out simultaneously with these activities. First and foremost, this will be done at the University of Belgrade by organizing various lectures, workshops and presentations.*

*Newspapers represent a very important and an indispensable source for scientific research since numerous patents, inventions, essential achievements and scientific discoveries as well as significant works of fiction and poetry of prominent writers were first published in the newspapers. This content will be available completely free of charge at Europeana portal. Hopefully, researchers in Serbia will recognize the importance of this project and Europeana portal will become a starting point in their research work.*

**Keywords:** Serbian historical newspapers, University Library “Svetozar Marković”, digitization, Europeana, scientific research, marketing activities

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## **1. University Library “Svetozar Marković“**

University Library “Svetozar Marković” originates from the library of the Lyceum of the Principality of Serbia founded in 1838. Lyceum later became the University of Belgrade, which was established in 1905. However, the University at that time did not have a university library. There were only seminar libraries at some colleges. The basis for the creation of the university library was the library of the so-called Serbian Seminar at the former Faculty of Philosophy in Belgrade. Another important point that has contributed to the creation of the University Library in Belgrade is a large book donation after the First World War, partly in the name of war reparations, and partly as a help of the allies because many libraries were destroyed in the war.

The decision on the establishment of the University Library in Belgrade was made in 1921 at Professor Pavle Popović’s proposal. The first appointed principal was Uroš Džonić. At that time, the Carnegie Endowment for International Peace was helping the construction of many library buildings around the world. However, in Europe, Carnegie Foundation supported only three libraries – renewal of the University Library of Leuven in Belgium, reconstruction of the Public Library in Reims, France, and the construction of the University Library in Belgrade. The city of Belgrade donated the land, and the Carnegie Foundation granted 100,000 dollars for the construction and equipment of the library building. It is the first building purposefully built as a library in Serbia and it was officially opened on St. Cyril and Methodius Day, May 24 1926 (University Library “Svetozar Marković”, 2014).

Library collections were formed from gifts received from foreign universities and foundations, as well as individuals. When moving into the newly built building, the collection contained slightly more than 57,000 volumes and the University had 6,000 students. Today the Library has more than 1,5 million units, and the University has about 90,000 students. According to these figures, it is obvious that the building capacity has become insufficient.

As noted by Filipi-Matutinović (2012), today the University Library “Svetozar Marković” is a central library of the University of Belgrade and the parent library for all scientific and academic libraries in Serbia. It is one of the founders of the Virtual Library of Serbia, a shared cataloguing system which enables access to information

from more than 160 Serbian libraries and KoBSON, a consortium which provides access to 35,000 electronic journals and 40,000 electronic books in full text.

The most valuable part of the Library collection is located in the Department of Old and Rare Books - manuscripts, Cyrillic and oriental, old and rare printed books, old journals and papers (especially “Zabavnik“, edited by Dimitrije Davidović from 1834, “Srpske novine“ from the very first issue, published in Kragujevac in 1834, “Novine Serbske“ issued in Vienna from 1813 and edited by Dimitrije Davidović and Dimitrije Frušić, “Šumadinka“, edited by Ljuba Nenadović in 1850, “Danica ilirska“, edited in Zagreb by Ljudevit Gaj, etc.) a significant collection of maps and engravings, M.A., M.Sc. and Ph.D. theses of Serbian scientists, as well as 30 library legacies – including the library legacy of Isidora Sekulić, Mihajlo Pupin, the collection of library benefactors and donors Joca Vujić and Gideon Dunderski with the invaluable publications.

## **2. Digitization Process at the University Library “Svetozar Marković”**

The process of digitizing old publications began in 2008 with the aim of preservation the old and very valuable collections that were mentioned in the introduction and with the aim of following global trends in the field of library and information science. At this point there was a considerable delay, but in years to come we have been actively working to make up for lost time.

Since most Cyrillic manuscripts are located in the Registry of the National Cultural Heritage, the digitization has started with these publications. In the first phase 129 Cyrillic manuscripts dating from the 13th to the 18th century were digitized. These are mainly with religious content, although there are those with secular character such as “Dušanov zakonik” from the 15th century. As reported by University Library (2014), the oldest manuscript is the “Psaltir” written on parchment in the 13th century.

As we followed the chronological principle old and rare Serbian printed books were digitized in the second phase. The first printed Cyrillic book from our region originates from the 15th century and the oldest is one “Oktoih” printed by Đurđe Crnojević in Cetinje in 1494. Our books printed in Trgovište, Venice, Shkoder, Belgrade, Vienna, Buda, Leipzig, Trieste are also part of this collection. On the whole, 2,548 pages of the oldest Serbian Cyrillic printed books were digitized. Books in foreign languages, printed from the 16th to the 19th century in more than 19,000 pages were added to the collection of old and rare books, based on the criterion of rarity and the importance of our history and culture (University Library „Svetozar Marković“, 2014).

High-quality digitization of printed or handwritten texts includes the following phases:

- Scanning of the printed material (Use always TIFF as an output file format of the master image. JPEG files produce undesired blurring effects in the output text);
- Image Processing (Page splitting, cropping and margin equalization; Deskewing – the process of removing skew from images; Geometric correction; Lighting correction; Brightness and contrast adjustments; Filters; Image Binarization; Image resizing);
- Creation of the output file which will be used for online access (by creating an output file (PDF, DjVu) from images and by converting images to text using Optical Character Recognition - OCR) (Ikonov and Dobreva, 2014, p.1-8).

Based on the aforementioned stages and by doing the situation analysis of digital collections of the University Library, we concluded that our institution lacks quality equipment necessary for digitization as well as trained staff who could effectively carry out these tasks. The quality of scanned pages was not satisfactory, digitization was not complete, just a JPEG of each scanned page was made and OCR was not done. The search was only possible via the descriptive metadata that had been entered into a bibliographic description of the physical copies processed in the University Library electronic catalog. An additional problem was the existence of two repositories at the University Library. Therefore, the visibility of the collection was very poor. An insight into the digitized collection was only possible via the Library website. However, a shift that has been made is significant because we have detected problems that needed to be addressed.

Based on the good results achieved in two Tempus projects and efforts in the field of digitization, LIBER, CERL and CENL invited the University Library to participate in the project Europeana Librariaies. In that way we got the opportunity to improve our skills, to learn more about digital collections, to find out what institutional repository should look like and to make significant efforts to transfer all digital collections in a single repository.

## **2.1 Participation in the Project Europeana Libraries**

Twenty-five libraries from eleven European countries participated in the two-year project Europeana Libraries. The only library participating in the project outside the EU was the University Library “Svetozar Marković”. “The idea for the project came on foot of the identification of a need to have a single aggregator for European research libraries, both national and university“ (Reilly, 2012). During the project the University Library digitized two important collections and submitted corresponding metadata to Europeana. These are the collection about Alexander the Great and the collection of oriental manuscripts. Digital objects of these collections were placed in the Digital Repository of the University Library in the form of PDF files and the corresponding metadata are searchable via Europeana portal.

The collection about Alexander the Great contains 150 books in 300 volumes printed between the 15th and 19th century. The collection is part of the legacy of Heinrich Christensen (1849–1912), a university professor from Hamburg. The collection was purchased in 1928 in Germany as part of war reparations. Ten doctoral dissertations about Alexander the Great are a significant part of the collection. The oldest book from this collection dates back to 1494. The collection of oriental manuscripts contains 686 works in 395 volumes. These manuscripts were created between 13th and 18th century and they were written in three Oriental languages: Arabic (525 manuscripts), Ottoman Turkish (149 manuscripts) and Persian (13 manuscripts). The oldest manuscript from this collection dates back to 1206 (Sofronijević, 2012, p. 44-45). A large number of manuscripts were mostly created in Serbia and most are from the fields of law, history, philosophy.

Participation in such a great project and the possibility to access digital material through Europeana portal was extremely significant not only for our institution and other libraries in our country, but also for researchers and scientists in various fields. “For a researcher the value lies in being able to access and search a critical mass of cultural

heritage and related research content in one place“(Reilly, 2012). It is the successful participation in the project Europeana Libraries and its promotion to the academic community in Serbia that provided University Library an invitation from LIBER to be a partner in the upcoming Europeana Newspapers Project.

### **3. University Library in Europeana Newspapers Project**

#### **3.1 Introduction to Europeana Newspapers Project**

Europeana is an online collection of the European cultural heritage which provides access to various types of digital objects – books, photographs, manuscripts, letters, works of art, notations, audio and video records, 3D presentations of artifacts. When we talk about cultural heritage, collections of digitized historical newspapers are indispensable. „For many years now libraries and publishers are digitizing extensive newspaper collections to meet the demand of their users and already millions of articles have been scanned [...] The project (Europeana Newspapers) brings together key stakeholders to make the process of digitization more efficient in areas such as image refinement and the development of newspaper related metadata by providing best practice recommendations” (Neudecker and Wilms, 2013).

The three-year project (February 2012 – January 2015) involves 18 partner institutions which will provide access to 18 million digitized newspaper pages. National Library of the Netherlands is a supervisor and the University of Innsbruck, Content Conversion Specialists GmbH and the University of Salford are working on the development of applications and testing of OCR, Optical Layout Recognition - OLR and NER. Newspapers are covering the period from 1618 to 2002 “in over twenty languages, and with fourteen different metadata and master file formats” (Neudecker and Wilms, 2013). The only project partner outside the EU besides National Library of Turkey is the University Library “Svetozar Marković”<sup>1</sup>.

#### **3.2 The Significance of Newspaper Collections**

The importance of serial publications in scientific research is not easily determined from the definition which says that a serial publication is “a publication in any medium issued under the same title in a succession of discrete parts, usually numbered (or dated) and appearing at regular or irregular intervals with no predetermined conclusion. In Anglo-American Cataloguing Rules 2 - AACR2 2002, serials are classified as a type of continuing resource. Serial publications include print periodicals and newspapers, electronic magazines and journals, annuals (reports, yearbooks, etc.), continuing directories, proceedings and transactions, and numbered monographic series cataloged separately” (Reitz, 2004-2014).

The definition refers to the form in which the publications appear, but it does not analyze the content. Looking at the content reveals the essence and importance of periodical publications that illustrate the overall human life through the ages. Information in the paper describe the everyday life, current affairs in the society, politics, economics, culture, art, sport, and at the time before the foundation of scientific

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<sup>1</sup> Since 2013 11 associated partners and 22 networking partners participated in Europeana Newspapers Project (among others University of Niš and National Library of Serbia)

journals they had described scientific achievements, patents and inventions that were of great importance for the development of certain disciplines. The forerunners of libraries in Serbia were reading rooms where newspapers could be read – “all around Serbia during the forties in the 19th century reading rooms were founded for the purpose of reading newspapers and socializing” (Stamatović, 1984, p. V).

### **3.3 Digital Newspaper Collection of the University Library “Svetozar Marković”**

The printed serial collection of the University Library contains over 8,500 titles in 700,000 volumes. About 5,200 titles are foreign serials, mostly in English, German, French and Russian. Due to the financial problems, the greater part of the serial collection is acquired through exchange and gifts.

As newspapers and journals have great significance in scientific research in the fields of history, literature, arts, and social sciences in general, in 2010 the University Library “Svetozar Marković” began the process of digitizing its newspaper collection to indicate the developments in the economic, cultural, sports and other areas of social development throughout history, whether for its users, researchers and scientists, or only for users who are interested in historical newspapers for any reason.

The digitization of newspaper collection had started at the National Library of Serbia and the Library of Matica Srpska before it started at the University Library. So far the National Library of Serbia has digitized 25 newspaper titles, of which the most important ones are “Novine Serbske”, the oldest Serbian newspaper (the publication started in 1813 in Vienna, in Serbian) and “Politika” a daily newspaper whose publication has started in 1904, but only the volumes issued from 1904 to 1941 are in the digital form (National Library of Serbia, 2014). Library of Matica Srpska digitized 5 titles, among them “Bosanska Vila”, which was published from 1886 to 1914 (Matica Srpska Library, 2014). Both digitized collections allow only viewing different editions, searching by date, while the full text search does not exist because the OCR was not done.

The University Library leads in the digitization of newspaper collections in Serbia with 47 digitized titles. This is another reason why this library participates in Europeana Newspapers Project. Technologies developed during the project allow OCR collections, and much better opportunities to search and find information, as well as much bigger visibility on the web. All these were the motives to provide missing numbers for assigned titles and subsequently to digitize them. Serbian Academic Library Association and the National Library of Serbia have significantly helped us to complete these tasks.

When the University Library was invited to participate in the Europeana Newspapers Project the newspaper titles that would be presented to the wide range of users of Europeana had to be carefully chosen. With the titles that would be submitted to Europeana we wanted to stress the historical development of newspapers as a specific kind of serial publications. At the beginning of the 19th century, newspapers in Serbia were specialized, thematic - literary, agricultural, religious, military, political, etc.

By developing and looking up to others, especially by following the example of Austrian newspapers, we created newspapers as we know them today – newspapers

which bring about general news and serve for entertainment, the only medium through many years, until the advent of radio.

For these reasons, and in order to cover a longer period of time, we decided to deliver the Europeana metadata for newspapers with diverse content, which can be roughly divided into four groups:

1) Newspapers – Europeana users can read daily political news, news from everyday life, information about the way of life in Serbia and the important events of that time in the newspaper “Vreme“, “Pravda“, “Srpsko Kolo“, “Nedelja“, “Zvezda“, “Male Novine“, “Beogradske Opštinske Novine“. “Male Novine“ is the oldest newspaper in this group, and it was first published in 1888.

2) Literary newspapers – Important Serbian writers of the 19th and early 20th century made first creative steps in literary journals. Within the project, the following papers that brought literary contributions, stories, poems, novels in sequels of domestic and foreign writers were presented: “Stražilovo“, “Nova Iskra“, “Šumadinka“, “Podunavka“, “Zora“. The oldest of these papers is “Podunavka“ whose publication began in 1843 in Belgrade, and it is also interesting because it is printed in the old Serbian Cyrillic alphabet, which contains the letters of the Russian alphabet.

3) Political and humorous-satirical newspapers – severe criticism of the community, social and political affairs, the current government, the political party policies are reflected in the content of the following newspapers: “Starmali“, “Starmladi“, “Bodljikavo Prase“, “Srpska Nezavisnost“, “Srpski Narod“. All these newspapers are lavishly illustrated, they abound in cartoons, sketches through which one can better see the political mood in Serbia at that time.

4) Newspapers published during the First World War – This is „the special group which will enrich a separate part of the European digital collections, called Europeana Collections 1914-1918, especially important for the current anniversary of the outbreak of the First World War“ (Milnović, Trtovac and Sofronijević, 2014, p. 5). The selected titles are: “Ratni Dnevnik“, “Službeni Vojni List“, “Ilustrovana Ratna Kronika“, “Balkanski Rat u Slici i Reči“. These titles are indispensable sources for the study of the reasons that led to the outbreak of the First World War, the events on the battlefield, war destruction, but also the amazing victory of the Serbian army and Serbian outstanding military strategists.

### **3.4 The Selection of the Digitized Newspapers for Europeana Newspapers Project**

The goal of the selection of titles divided into 4 groups, presented in the previous section, was to show Europeana users all aspects of cultural, public, political and everyday life which a citizen of Serbia witnessed from the mid 19th to mid-20th century. The newspapers and news articles portray the most influential events, the development of culture and science, what the citizens of Serbia were upset or thrilled about, which characters and events were the most controversial and which were ignored. All these aspects are important points for research in various scientific fields. In order to make our participation in the project efficient and economical, only titles that contribute most to the potential exploration by Europeana users could be chosen. As noted previously, a digital collection of newspapers of the University Library is not the

only digitized collection of Serbian newspapers and it was important to establish good criteria for the selection of digitized material for further processing and refinement of the text.

Criteria for the selection of the digitized materials were the following:

- Titles that were not digitized yet in the National Library of Serbia and Matica Srpska Library and the titles which could not be found on the Digital National Library of Serbia or Digital Matica Srpska Library portals;
- Availability of good digital copies which could provide quality information to the end users;
- Technical limitations (poor microfilm copies, missing editions, incomplete supplements). This criteria implies that incomplete years, newspapers lacking extras or bad copies on microfilm were not included (Trtovac and Dakić, 2014, p. 4).

We tried to complete years by lending issues from the Serbian Academic Library Association and in several cases we succeeded in that, so we digitized those issues afterwards. In addition to the Serbian Academic Library, the National Library of Serbia significantly helped us to supplement the missing numbers especially regarding the newspaper “Ratni Dnevnik” which is a part of the wider project Europeana Collections 1914-1918 in which the afore mentioned library participates.

### **3.5 Results of Newspapers Text Refinement**

Following the set criteria for the selection of materials and the needs of users and the research community which access Europeana, it was decided that the University Library “Svetozar Marković” would participate in the project with access to and metadata for 45 newspaper titles and 392.323 digitized pages issued in the period from 1830 to 1944. All these digitized newspapers will be in open access at the end of the project, all of the newspaper numbers will be over 70 years old, which is in accordance with the copyright law (Trtovac and Dakić, 2014).

For content of newspapers provided by University Library “Svetozar Marković”, it was planned only OCR, for all 392.323 pages, and it was done by the University of Innsbruck. This kind of refinement will enable data search by key words across the entire text, including captions and explanations within pictures and photos. Since the newspapers delivered by our Library to Europeana are mostly printed in Cyrillic (one title in Latin), including the old Cyrillic alphabet, which contains Russian letters, we were very pleased with the results of the OCR testing, where the University of Innsbruck had over 90% success in character recognition. After testing, the University of Innsbruck submitted METS-ALTO files<sup>2</sup> of our newspapers, but it was still necessary to find a browser that would support the search of the specified files.

Along with testing at the University of Innsbruck, the testing of the application Altheia<sup>3</sup> was conducted under the supervision of the University of Salford in order to provide better optical character recognition. Throughout two iterations of testing a small sample of our newspaper collections, we got fantastic results that were later used for the

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<sup>2</sup>Based on METS and ALTO formats developed in Library of Congress, available at <http://www.loc.gov/standards/mets/> and <http://www.loc.gov/standards/alto/>

<sup>3</sup> Altheia – Ground Truthing System, available at <http://www.primaresearch.org/tools/Aletheia>



evaluation and validation of this software. Unfortunately, the software Altheia which is extremely user-friendly couldn't be applied on METS-ALTO files provided to us by the University of Innsbruck, without significantly disturbing the configuration of XML structure.

In cooperation with the project partners and the National Library of Serbia, it was agreed that during 2014, the University Library project team would perform manual corrections of OCR for the title "Ratni Dnevnik" which contains official reports about the operations in the WWI. And earlier during the project we were performing some work manually. To improve detection, visibility and accessibility of the content of the old Serbian newspapers to the Europeana users, librarians of the University Library "Svetozar Marković" had analytically processed over 2,000 articles from the historical Serbian newspapers so that the articles could be searchable through corresponding metadata and annotations.

However, manual OCR corrections require a corresponding software that makes them possible. As good relations with partners have been developed during the project, it was agreed, in cooperation with the National Library of Luxembourg, that they will share the software which they developed themselves, while every software used so far changes the structure of the METS-ALTO file.

Once we have established a good system for manual corrections of the text processed with OCR and test it on the "Ratni dnevnik" newspaper, crowdsourcing and enabling users to improve online content of other newspapers will be possible. One of the world's major libraries to which, in this sense, we can look up is the National Library of Australia with the project Many Hands Make Light Work (Holey, 2009) within which users by using Trove tools search for articles and manually correct errors in the OCR.

Although the project hasn't anticipated NER for Serbian historical newspapers, there are agreements that in cooperation with the National Library of the Netherlands our Library participates in the development of NER for the Serbian language by using a tool that was developed by the National Library of the Netherlands.

### **3.6 Browser for Serbian Historical Newspapers**

In order to search the text of historical Serbian newspapers processed with OCR, it was necessary to develop a tool - a browser which will display pages, enable full text search and allow reading of required articles or their segments. A browser was developed at the University Library "Svetozar Marković" with significant support from colleagues from the National Library of Luxembourg, who shared a tool which they created themselves.

Beta version of the browser (University Library „Svetozar Marković“, 2014) enables a search for keywords within a specified number of newspapers. The drawback is that one must choose the title of newspapers and the specific date when searching for a search term. Also, the search is performed by letter in which the newspaper was printed (Cyrillic newspapers by Cyrillic, Latin newspapers by Latin). Another disadvantage is the inability to search parts of words, it allows the search of the whole words only. Since the Serbian language is rich in flexion, this is a major drawback. For example, if one searches for something related to "Srbija", the search should be conducted for all

forms of the word – Srbija, Srbije, Srbiji, Srbijom, Srbijo... By querying over the root word „Srbij“ it is not possible to get any hits.

However, it is important that browser exists and that through it information relevant to researchers from various scientific fields can be found. Detected problems will impact its improvement. The improvement will require consultation with experts in IT, the Serbian language and computer linguistics from the University of Belgrade.

#### **4. Promotion of Content and Project Objectives**

As previously noted, this project provides quality refinement of the text, improved search and retrieval of historical newspapers. However, if the public were not notified about it, the users of digitized historical newspapers would only be few enthusiasts who visit the Library website on a daily basis. It is not enough to get quality content and revised texts that allow the retrieval of information. It is also necessary to promote this content. Promotion of online newspaper collection content and the information contained in them is the job of the library. “ Libraries can develop specific goals as they develop their marketing plan, including: [...] support newspaper readership and news literacy, [...] educate users about the functions and content provided by the library’s news databases — Including local historical preservation projects...” (Cheney, 2011, p. 93-94).

##### **4.1 Workshop at the University Library Belgrade**

In order to promote the Europeana Newspapers Project and achieved results, partner institutions should held three workshops during the project to discuss the plans, achievements, created applications and tools, the problems encountered by the project participants, potential solutions etc. The workshops aim to present the benefits of the project to the local community, to all potential users of digitized newspapers, researchers, scientists, students and pupils. Also, companies and individuals who can contribute to the solving of the problem are invited to attend these workshops.

The first workshop was aimed at presenting the tools to assess the quality and refinement of the text and it was held in Belgrade at the University Library “Svetozar Marković“ on June 13 and 14 2013 (Europeana Newspapers Project, 2014). Workshop participants (representatives of all project partners) were, through the presentations and demonstrations of new tools and applications, introduced to the techniques for OCR and NER, instruments for evaluation the presented tools and quality assessment of the processed content. Having worked in groups, participants were better informed, shared experiences and proposed ways to overcome some of the problems.

In addition to the project partners, the workshop was attended by researchers from the University of Belgrade who were presented with the advantages of the digitized newspaper content and the ability to use them in their research work. There were also the representatives of the University of Nis and the National Library of Serbia, who became networking partners in the project after completion of the workshop.. In addition, representatives of some private companies engaged in IT followed the presentation, learned about the problems the University Library encountered and offered possible solutions.

## **4.2 Marketing Activities and Media Coverage**

For the purpose of better marketing promotion, the Library has launched a series of activities that have resulted in the appearance in the media and in the increased visibility of project results in the virtual world. In the first place, all project information are placed on the University Library website, which has an annual visit of over 100,000 users. According to the annual media report of Europeana Newspaper Project (2012, p. 8), our library publishes relevant project information on Facebook (7.000 followers) and Twitter (over 150 followers), Newsletter (General Public) - about 2.000 subscribers, Newsletter (Serbian Academic Library Association) - about 400 subscribers, Newsletter (Serbian Library Association) - about 500 subscribers, Press List - about 160 contacts.

Also, according to the same source, during the workshop in Belgrade, information about the event was published in all major Serbian newspapers (print and online editions) and online news portals. Moreover, the workshop was the subject of several radio broadcasts on the national radio station.

The effect of increased marketing activity can also be seen in the larger interest of our users, especially young researchers and PhD students, in digitized contents of Serbian newspapers. This interest resulted in the opening of a new digital reading room where a subject-librarian presents to users the contents of the collection of Serbian historical newspapers which are part of a larger digital collection of WWI.

## **4.3 Participation in Conferences**

Dissemination of the results of the Project has been successfully implemented through numerous appearances on local, regional and international conferences where the Project and its results were illuminated from different perspectives. Librarians from the University Library involved in Europeana Newspapers Project were extremely active in presenting and writing papers, as well as in a presenting the poster of the project.

The important national conferences are The National Conference on Digitization of Cultural Heritage held at the Faculty of Mathematics in Belgrade (2012) and The Conference of The Parent Library Community of Serbia - Biblionet (2014). Regional scientific conferences where the project was promoted are SEEDI (South-East European Digitization Initiative) held in Ljubljana (2012), Zagreb (2013) and Belgrade (2014) and ICSL (International Conference of Slavic Librarians) held in Sarajevo (2013). We should point out international conferences such as International Scientific Conference at the Faculty of Philology, University of Belgrade (2012, 2013), Conference of Library Association of Serbia (2012) and INFORUM (Annual Conference on Professional Information Resources) in Prague (2012, 2013, 2014). All conference presentations were published in the form of papers in conference proceedings and poster presentations in the form of short papers.

After the paper presentations and completion of mentioned conferences, we received many questions from the participants around the world who were interested in the possibility of using the digitized materials. Most of them were fellow librarians who wanted to promote new services and considerable full text search to their users. These contacts are extremely important particularly when it comes to the colleagues in the region. Due to the common Yugoslav past, Serbian language and Cyrillic are not an

obstacle, and the digitized collection of Serbian historical newspapers is highly important for researchers from all over ex-Yugoslavia.

#### **4.4 Production of Promotional Materials**

The project team launched another marketing campaign in order to encourage our fellow librarians and users to start to use digital newspaper collections more actively. Bags, cups, mugs, notebooks and folders featuring the Serbian historical newspapers, either in terms of titles with beautiful old fonts or various lavish illustrations have been designed and manufactured.

The first part of the promotional materials was distributed to the workshop participants in Belgrade, and the other part is being distributed to the participants of various events at our institution. We are very pleased when we see someone wearing a bag featuring our old newspapers. We believe that this method of dissemination of the project is very appealing and with rather moderate investment of resources significant feed-back is received.

#### **5. Future Activities - Instead of Conclusion**

In its long history of existence and the relatively short history of digitizing, the University Library "Svetozar Marković" has faced a number of challenges. One of them is certainly working with the largest digital corpus of texts in Serbian written in Cyrillic. Having successfully conducted delivery of metadata about a collection of approximately 400,000 pages, having done OCR for some page numbers and having created a browser information retrieval and its testing, the important remaining tasks refer to the promotion of the content, determination of target user groups and organization of trainings to use this valuable content.

In the third and final year of the project, our goal is to bring as closely as possible the project and digital content to the researchers in Serbia and to do it simultaneously with the activities we mentioned earlier.

Research that could be carried out on such a large corpus are various: the Serbian language, letters and literature, general and cultural history, ethnology, ethnography, politics, economy and finance (exchange list), history of marketing (ads and commercials), meteorology and climatology (weather forecast), development of science (publication of scientific advances and patents). University Library staff will present the advantages of this corpus by organizing lectures, workshops and presentations for the members of the scientific community of Serbia, but also for the librarians of academic libraries.

Newspapers represent a valuable and an indispensable source for scientific research because the prominent poets and scholars primarily published their literary, artistic and scientific works in newspapers. This content will be available completely free of any legal restrictions at the Europeana portal. On the examples of articles about Nikola Tesla the possibilities of free search and use of articles via Europeana portal were described in a paper. In We can conclude that "the users will have the chance to find contemporary newspaper information on Tesla that paint a different and perhaps a more

objective picture than later publications on this great inventor and scientist” (Filipi-Matutinović and Andonovski, 2013).

By pointing to these and similar examples and by refinement of a browser for searching the articles and information in the Serbian digitized historical newspapers, we hope that researchers and academic librarians in Serbia will recognize the importance of this project and Europeana portal will become a starting point in their research work.

## References

CHENEY, D. (2011) *Watch-Read-Research the News: Marketing and Promoting News Library Services*. IFLA International Newspapers Conference, 25-27 April 2011, Kuala Lumpur, Malaysia, pp. 90-98. [Online] Available from: <http://www.ifla.org/files/assets/newspapers/documents/IFLA%20International%20Newspaper%20Conference%202011-%20Papers.pdf> [Accessed: 25<sup>th</sup> May 2014]

EUROPEANA NEWSPAPERS PROJECT. (2012) *Media Report for Year 1*. [Online] Available from: [http://www.europeana-newspapers.eu/wp-content/uploads/2012/04/MS6.1.3\\_ENP\\_Media\\_Report\\_year\\_1.pdf](http://www.europeana-newspapers.eu/wp-content/uploads/2012/04/MS6.1.3_ENP_Media_Report_year_1.pdf) [Accessed: 25<sup>th</sup> May 2014]

EUROPEANA NEWSPAPERS PROJECT. (2013) *Workshop in Belgrade* [Online] Available from: <http://www.europeana-newspapers.eu/focus-on-newspaper-refinement-quality-assessment-in-belgrade/> [Accessed: 25<sup>th</sup> May 2014]

FILIPIMATUTINOVIĆ, S. (2012) *From the first brick to a digital repository*. In *Digitalisation on Cultural and Scientific Heritage, University Repositories and Distance Learning*, International Scientific Conference, University of Belgrade, Faculty of Philology, September 30<sup>th</sup> – October 2<sup>nd</sup>, 2011. Belgrade: Faculty of Philology. Book 2, pp. 159-173

FILIPIMATUTINOVIĆ, S. and ANDONOVSKI, J. (2012) *Europeana Newspapers Project contribution to the freedom of information: finding out about Nikola Tesla from historical newspapers* [Online] In *INFORUM 2013: 19th Annual Conference on Professional Information Resources*, Prague, May 21-22, 2013. Available from <http://www.europeana-newspapers.eu/wp-content/uploads/2012/05/filipi-matutinovic-stela-Tesla.pdf> [Accessed: 30<sup>th</sup> May 2014]

HOLEY, R. (2009) *National Library of Australia - Many Hands Make Light Work: Public Collaborative OCR Text Correction in Australian Historic Newspapers* [Online] Available from: [http://www.nla.gov.au/ndp/project\\_details/documents/ANDP\\_ManyHands.pdf](http://www.nla.gov.au/ndp/project_details/documents/ANDP_ManyHands.pdf) [Accessed: 20<sup>th</sup> May 2014]

IKONOMOV, N. and DOBREVA, M. (2008) *The making of... digital book*. [Online] NCD Review, 13, pp. 1-8. Available from: <http://elib.mi.sanu.ac.rs/files/journals/ncd/13/ncd13001.pdf> [Accessed: 20<sup>th</sup> May 2014]

MATICA SRPSKA LIBRARY. (2014) *Digital Matica Srpska Library*, [Online] Available from: <http://digital.bms.rs/ebiblioteka/publications/index/collection:10> [Accessed: 12<sup>th</sup> May 2014]

MILNOVIĆ, V., TRTOVAC, A. and SOFRONIJEVIĆ, A. (2014) *The Importance of the Digitized Serbian Periodicals in the Context of "Europeana Newspapers Project"* [Online] *International Trends in Library and Information Technology (ITLIT)*, 1(1), pp. 2-10. Available from: <http://itlit.net/ra1.pdf> [Accessed: 20<sup>th</sup> May 2014]

NATIONAL LIBRARY OF SERBIA. (2014) *Digital National Library of Serbia* [Online] Available from: <http://serbia-forum.mi.sanu.ac.rs/Webbook.jsp?entry=855> [Accessed: 12<sup>th</sup> May 2014]

NEUDECKER, C. and WILMS, L. (2013) *Europeana Newspapers – a Gateway to Europeana Newspapers Online* [Online] In *IFLA Newspapers/GENLOC Pre-Conference Satellite Meeting Newspapers to the People*, Singapore, 14 – 15 August 2013. Available from: [http://www.ifla.org/files/assets/newspapers/Singapore\\_2013\\_papers/day\\_1\\_10\\_2013\\_ifla\\_satellite\\_neudecker\\_clemens\\_wilms\\_lotte\\_europeana\\_newspapers\\_-\\_a\\_gateway\\_to\\_european\\_newspapers\\_online.pdf](http://www.ifla.org/files/assets/newspapers/Singapore_2013_papers/day_1_10_2013_ifla_satellite_neudecker_clemens_wilms_lotte_europeana_newspapers_-_a_gateway_to_european_newspapers_online.pdf) [Accessed: 20<sup>th</sup> May 2014]

REILLY, S. (2012) *Building bridges: from Europeana Libraries to Europeana Newspapers* [Online] In *IFLA 2012, Helsinki, Session 119 –Users and portals: digital newspapers, usability, and genealogy— Newspapers Section with Genealogy and Local History Section*. Available from: <http://conference.ifla.org/past-wlic/2012/119-reilly-en.pdf> [Accessed: 10<sup>th</sup> May 2014]

REITZ, J. M. (2004-2014) *ODLIS – Online Dictionary for Library and Information Science* [Online] Available from: [http://www.abc-clio.com/ODLIS/odlis\\_A.aspx](http://www.abc-clio.com/ODLIS/odlis_A.aspx) [Accessed: 11<sup>th</sup> May 2014]

SOFRONIJEVIĆ, A. (2012) *Europeana Libraries – grounding basis for digitization projects in academic libraries in Serbia and region*. In *Digitalisation on Cultural and Scientific Heritage, University Repositories and Distance Learning*, International Scientific Conference, University of Belgrade, Faculty of Philology, September 30th – October 2nd, 2011. Belgrade: Faculty of Philology. Book 2, pp. 39-49.

STAMATOVIĆ, D. (1984) *Čitališta u Srbiji u 19. veku*. Beograd: Narodna biblioteka Srbije.

TRTOVAC, A. and DAKIĆ, N. (2014) *Bringing historical advertisements and commercials into research focus – „Europeana Newspapers“ Project* [Online] *NCD Review*, 25, pp. 2-10. Available from: <http://elib.mi.sanu.ac.rs/files/journals/ncd/25/ncd25002.pdf> [Accessed: 15<sup>th</sup> May 2014]

UNIVERSITY LIBRARY "SVETOZAR MARKOVIĆ". (2014) *Collection of Old and Rare Books* [Online] Available from: <http://ubsm.bg.ac.rs/engleski/zbirka/knjiga/zbirka-stare-i-retke-knjige> [Accessed: 10<sup>th</sup> May 2014]

UNIVERSITY LIBRARY "SVETOZAR MARKOVIĆ". (2014) *Collection of Books from Library Funds* [Online] Available from: <http://ubsm.bg.ac.rs/engleski/zbirka/knjiga/izbor-knjiga-iz-trezora-biblioteke> [Accessed: 10<sup>th</sup> May 2014]

UNIVERSITY LIBRARY "SVETOZAR MARKOVIĆ". (2014) *Digital collection of the newspapers* [Online] Available from: <http://ubsm.bg.ac.rs/cirilica/zbirka/novina/> [Accessed: 12<sup>th</sup> May 2014]

UNIVERSITY LIBRARY “SVETOZAR MARKOVIĆ”. (2014) *Manuscript Collection* [Online] Available from: <http://ubsm.bg.ac.rs/engleski/zbirka/rukopisa/zbirka-rukopisa> [Accessed: 10<sup>th</sup> May 2014]

UNIVERSITY LIBRARY “SVETOZAR MARKOVIĆ”. (2014) *Searchable Digitized Historical Newspapers* [Online] Available from: <http://www.unilib.bg.ac.rs/istorijskenovine/index.php?lang=en> [Accessed: 22<sup>th</sup> May 2014]

UNIVERSITY LIBRARY “SVETOZAR MARKOVIĆ”. (2014) *Timeline* [Online] Available from: <http://ubsm.bg.ac.rs/engleski/strana/64/vremeplov> [Accessed: 10<sup>th</sup> May 2014]