

“LUCIAN BLAGA” UNIVERSITY OF SIBIU  
FACULTY OF HISTORY AND PATRIMONY  
INSTITUTE FOR THE STUDY AND VALORIFICATION  
OF THE TRANSYLVANIAN PATRIMONY IN EUROPEAN CONTEXT

# ACTA TERRAE SEPTEMCASTRENSIS

IX



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**ACTA TERRAE SEPTEMCASTRENSIS**

**IX, 2010**

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SEPTEMCASTRENSIS**

**IX**

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**Sibiu, 2010**

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**DIGIBRUK  
DIGITIZATION PROJECT OF THE BRUKENTHAL NATIONAL  
MUSEUM JOURNALS**

**Adrian LUCA**

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**Keywords:** digitization, journal, database, Brukenthal National Museum Sibiu, history, archaeology, arts, natural science, ethnography.

**Abstract:** This article was made in order to present the digitization project that takes place at the Brukenthal National Museum in Sibiu. The work involves scanning the journals, and then the images are processed and afterwards exported into a single PDF document. The scanning procedure is completed when all the scanned articles are added in a database. The work was done following the F-M.U.S.E.U.M. project rules.

The European Commission Community presented in 2005 the *i2010: digital libraries* (COM 2005 465 final, 30.09.2005) initiative, which seeks to optimize the benefits of the new information technologies for economic growth, job creation and the quality of life of European citizens. This communication sets the digitization strategies, online accessibility and digital preservation of the Europe's collective memory. This collective memory includes print (books, journals, newspapers), photographs, museum objects, archival documents, audiovisual material (hereinafter 'cultural material') (OJ L 236, 31.08.2006, 28). In this way the *DigiBruk* project was born, from the wish to expose to the public, through the internet, the journals that appeared in time in the Brukenthal National Museum from Sibiu. In the same time, the digitization of these journals is important to the Museum because it means: stocktaking, documentation, research, conservation, exploitation and dissemination of knowledge (Oberländer 2006, 48). This project implies the collaboration between the *Lucian Blaga University Sibiu* (Professor Luca Sabin Adrian Ph.D., Reader Cosmin Ioan Suciu Ph.D. and Luca Adrian), IPCTE<sup>1</sup> and the Brukenthal National Museum from Sibiu.

In the last few years IPCTE was constantly involved in digital projects (Luca and Suciu 2007, 13-39) and the importance of their activity was recognized by the scientific forums even though the people which access the internet on daily bases is very low in Romania comparing to the Western European countries (IFAP 2009, 52). Even with this inconvenience a digital product can be promoted easier being accessible in any corner of the world, at any given time, at a very good quality. The investment needed for a project as the one we are presenting is not very high. For this project we used two image scanners (HP A4 and Mustek A3) and three

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<sup>1</sup> *Institute for the Study and Valorification of the Transylvanian Patrimony in European context.*

software programs (Corel Photo-Paint X3, version 13, 2005, Adobe Acrobat and Microsoft Office 2007).

### Objectives

When the project started, in late 2009, we settled a series of main objectives:

1. To transpose the written cultural patrimony into a digital format → promotion at European level;
2. The protection of the national cultural patrimony found in the Museums library → promoting the collections;
3. Improvement of the access to the documents → rising the number of users and their category;
4. To create a database which will contain the authors name, the articles name, the volume and the series, up to five keywords, the pages where it can be found in the journal, the abbreviation used and a link to the respective article;
5. Online publication of the material on the Museums web site ([www.brukenthalmuseum.ro](http://www.brukenthalmuseum.ro)).

**The scanning procedure** can begin only when we are sure that nobody else started the same project earlier (OJ L 236, 31.08.2006, 29) and not before we establish all the details regarding to the best management of the project. Detail such as: selection of the documents/collections that will be digitized, the work methodology, the digitize solution we use and the identification of equipment and software that we intend to use (BNR 2009, 3).

For the scanning procedure we used the two image scanners and Corel Photo-Paint X3 software. In order to obtain an image we need to use the *acquire image* option from *file* from the Corel program. In order to obtain a better quality of the image we scanned the documents in the *grayscale*<sup>2</sup> mode at a 300 DPI<sup>3</sup> resolution, in this way we were able to scan approximately 100 pages per hour.

**The image processing procedure.** The image obtained after the scanning is not a high quality one, the most frequent problems is determined by the angle you can open the book while scanning. As a result shades appear and in most cases the image is deformed. These problems can be resolved with the Corel Photo-Paint software. In order to obtain a quality image we first need to rotate the image as much as needed, we can do this with the option “*Rotate custom*” found in *File* → *Rotate*. The next step will be to eliminate all the shades; we can do this with the *rubber gum* which can be activated by pressing the X key from the keyboard. After this we can advance to the next step which is to adjust the brightness, contrast and intensity of the image; which can be done by selecting the *Adjust* button from the toolbar and selecting the option *Brightness/Contrast/Intensity*. Then we have to

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<sup>2</sup> Scanning in gray = more bits per pixel to represent many shades of gray, the preferred level of gray scale is 8 bits per pixel, and at this level the image displayed may select from 256 different levels of gray.

<sup>3</sup> Acronym from **Dots Per Inch**; it determines the resolution of the document when it is printed, the higher the DPI the better quality of the image, but also considerably higher document size.

adjust the tone balance from *Tone Curve...* from the same *Adjust* field. In order for the image processing procedure to be complete we need to set the same values of width and height for each page, with the *Maintain aspect ratio* unselected, in order for the images from the PDF to be the same size. This process can be done by selecting *Image* and then clicking *Resample*. After all of these modifications have been done, the resulted image must be saved as a *.jpeg*<sup>4</sup>.

In order to publish the materials on-line we chose the *.pdf*<sup>5</sup> *format*. In order to make such a file we need to have the Adobe Acrobat software installed on the computer. There are many reasons for which we chose this file format, first of all because we can combine a series of *.jpeg* images into a single PDF document by selecting, from the toolbar, *Combine* → *Merge files into a single pdf* → *Add files*, at this point we have to select the images that we want to add to the respective document and we choose the *Combine files* command, at this point we need to save our work. Another special characteristic of the PDF document is the *OCR*<sup>6</sup> *Text Recognition* (Document → *OCR Text Recognition* → *Recognize text using OCR* → we have to select the primary language of the text), which reduces the file size and allows the text to be reformatted, searched, or processed by other applications. We can also add some properties to the document, from *File* → *Properties...* → *Description/Security*, such as: title, author, subject, keywords and we can also add some restriction for: printing, changing the document, document assembly, content copying, content copying for accessibility, page extraction, commenting, filling of form fields, signing and creating of template pages.

The digitization process is completed when all the documents that we scanned are organized in a **database** or a **system** (BNR 2007, 5). In order to create our database we used the *Access 2007* software from the *Microsoft Office 2007* package. The database contains many fields among which: author's first and last name, journal, series, abbreviation, 5 keywords, the pages where the article can be found in the written version, year and a link that makes reference to documents in digital format. Up to this point we added 107 articles to our database.

**List of publications targeted for digitization** is as follows: *History, archeology: Studies and Communications, Brukenthal Museum, Sibiu*: 1956, nr. 1; 1965, nr. 12; 1967, nr. 13 *reverential volume, Brukenthal Museums Yearbook*, 1817 – 1967; 1969, nr. 14; 1973, nr. 18; 1975, nr. 19; 1977, nr. 20; 1981, nr. 21.

**Plastic art: Studies and Communications, Brukenthal Museum, Sibiu**: 1956, nr. 4, 5; 1956, nr. 7, *History Culture*; 1978, nr. 1; 1979, nr. 2.

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<sup>4</sup> Acronym from **Joint Photographic Experts Group** = an image with a compressed resolution, 8-24 bit. This varies depending of quality and the size of the file/document.

<sup>5</sup> Acronym from **Portable Document Format** = a file format which allows us to maintain the same font format, the format of the page, the colors and the graphic elements.

<sup>6</sup> Acronym from **Optical Character Recognition** = is the mechanical or electronic translation of images of handwritten, typewritten or printed text (usually captured by a scanner) into machine-editable text.

**Natural Sciences:** *Studies and Communications, Brukenthal Museum, Sibiu:* 1958, nr. 10, 11; 1970, nr. 15, 1971, nr. 16; 1972, nr. 17; 1973, nr. 18; 1975, nr. 19; 1976, nr. 20; 1977, nr. 21; 1978, nr. 22; 1979, nr. 23; 1980, nr. 24 + Supplement; 1983, nr. 25 + Supplement; 1984, nr. 26; 1998, nr. 27.

**Ethnography:** *Studies and Communications, Brukenthal Museum, Sibiu:* 1956, nr. 2, 3, 6; 1958, nr. 8, 9;

**Cibinium:** *Study materials for ASTRA National Museum Complex in Dumbrava Sibiu:* 1966, vol. I; 1967/1968; vol. II; 1969/1973, vol. III; 1974/1978, vol. IV; 1979/1983, vol. V.

From this list only the journals regarding to history are ready to be published online and hopefully by the end of year 2010 all the journals will be uploaded on Brukenthal National Museums website.

#### **Future projects**

The project presented here is only a pilot one. We wanted to see if the work needed in order to implement a project of this magnitude is worth on the long run. Our next objective is to implement a digitization project to the older series of journals which appeared in the Brukenthal National Museum (in the field of **plastic arts:** *Mitteilungen aus dem Baron von Brukenthalischen Museum* 1931-1937; *Neue Folge I-VII* 1941, *Neue Folge VIII* 1944, *Neue Folge IX-X* 1946-1947, *Neue Folge XI-XII*; **Natural Science:** *Verhandlungen und Mitteilungen der Siebenbürgischen Vereins für Naturwissenschaften zu Hermannstadt* 1849-1945, 95 volumes), but in order to do this new modern equipment is necessary because the digitization process is a destructive one in its nature, especially when we are dealing with older books that are more fragile. One solution for this problem is to acquire an automatic scanning system, which can employ vacuum and air and static charges to turn pages while imaging is performed automatically, usually from a high resolution camera located over an adjustable v-shaped cradle, but the costs for such an investment are very high.

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