Slovenské Spevy Online: Project Ľudo Slovenský and the Crowdsourced Digitization of a Folk Song Collection

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Abstract

The vast amount of folk songs that were gradually amassed in published song collections through intensive collecting and editing activities throughout the 19th and 20th centuries represents a rich and precious material that is useful in present-day artistic and educational contexts. Yet for various reasons, it is often inaccessible to those who work with folk song for hobbyist-artistic purposes, in the folklore movement, or in education. In the last two decades, websites have been created in Slovakia that present folk songs in various ways: either in the form of a database of song lyrics, or complete text-melodic transcriptions supplemented by sound samples. In 2016, a project called *Eudo Slovenský* – *Eudové piesne* [Ľudo Slovenský – Folk Songs] was initiated, which approached the digitization and public dissemination of folk songs in an unusual and interesting way.

This paper presents the genesis of the project and the context in which it was created, the theoretical and methodological aspects of the process of digitizing songs and publishing them on the Internet. Its main purpose is to digitize and interactively mediate the content of one of the most important and extensive song collections in Slovakia – *Slovenské spevy* [Slovak songs].

Keywords

Digitization, folk songs, applied ethnomusicology, Ľudo Slovenský, Slovenské spevy.

Introduction

At the end of 2016, the well-known Slovak aphorist and journalist Tomáš Ulej turned to the Department of Ethnology and Folklore Studies at the Faculty of Arts of the University of Constantine the Philosopher in Nitra. He was preparing the concept for a digitization project focused on existing published folk song collections and looking for a professional consultant for the project. He described his intentions in a very engaging way, and his previous digitization activities based on voluntary contributions by the public and individuals were equally impressive. In just a few days we met and started to think about the conceptual framework and implementation details of the *Ludo Slovenský – Slovak Songs* [Ludo Slovenský – Ludové piesne] digitization project. The interim result of the project is one part of a more comprehensive web

portal – www.ludoslovensky.sk.¹ Although the project is not finished, the following paper aims to present the context in which it was implemented, the basic methodological procedures of digitization, the specific roles played by public volunteers in its creation, and other key aspects that contributed to its overall realization.

The digitization of song collections in Slovakia and their online public access

An important motive for the project was the fact that especially during the 20th century, and to a greater extent in its second half, many musical folklorists and ethnomusicologists played essential roles – whether as collectors or editors – in the creation of valuable song collections amounting to hundreds of folk song notations.² However, today the editorially excellent ones remain "hidden" in libraries, and only some can be found at antiquarian bookshops. At the same time, due to intensive activities in the field of amateur folklore ensembles, folklore choirs, or in primary schools within the specific subject "Regional Education and Folk Culture", which was introduced into the State Education System in 2008 by the Ministry of Education, there is a great demand for local and regional song material which, for various reasons, cannot be satisfied by commercially published music albums and YouTube videos presenting traditional music.

On the other hand, the emergence of digital technologies and the Internet represents a key moment for research institutions and professional ethnomusicologists not only in terms of processing existing archival materials, creating information databases and registers, and participating in national and international digitization projects, but most importantly the methodology used for the documentation and analysis of musical, verbal, and dance expressions.³ Of course, the choice of which processes should be digitized and to what extent also depends on the conditions in which an institution operates.⁴ In relation to applied ethnomusicology, digital technologies and the possibilities of the Internet currently represent a broad platform for the effective popularization of research results, educational activities, and relationship-building with the public, in which ethnomusicologists in Slovakia, for example, are largely replaced by a broad community of sincerely passionate, but often professionally

¹ Web (1): https://www.ludoslovensky.sk/

² E.g. KOVAČIČOVÁ, J.: *Piesne z Brezovej*. Martin: Osveta, 1958. / HUDEC, K. – POLOCZEK, F. (eds.): *Slovenské ľudové piesne I.–IV*. Bratislava: Vydavateľstvo slovenskej akadémie vied, 1951–1964. BURLASOVÁ, S.: *Ej, prišli sme, prišli sme na pole družstevné*. Bratislava: Príroda, 1980. / DEMO, O. (ed.): *Z klenotnice slovenských ľudových piesní*. Bratislava: Opus, 1981. / JÁREK, M.: *Vyletela húska: Ľudové piesne zo Skýcova, Slažian a Hosťoviec*. Nitra: Dom Matice slovenskej, 1997. / BARTÓK, B.: *Slovenské ľudové piesne – Volume 1–3*. Bratislava: Hudobné centrum, 2020 and many others.

³ Compare e.g. ELSCHEK, O.: Elektroakustika a etnomuzikológia. In: *Slovenský národopis*, 1961, 9, Nr. 2, 295-309. / GRICH, S.: *Muzikológia a digitálna technika z pohľadu súčasnosti*. [online]. Brno: Masarykova Univerzita, 2013. Available on:

https://is.muni.cz/th/365334/ff_d/Muzikologia_a_digitalna_technika_GRICH.pdf [visited 2020-01-25]. / AMBRÓZOVÁ, J.: Aplikácia digitálnych technológií vo výskume tradičnej inštrumentálnej hudby na Slovensku. In: *Slovenský národopis*, 2018, 66, Nr. 1, 29-55, doi: 10.26363/SN.2018.1.02.

⁴ I am referring here to the extent of human and time capacities, the quality of technological equipment, the financial evaluation of personnel, the current priorities within scientific activity and the priorities and ideological settings of the ministries that politically shape the conditions for the functioning of scientific institutions.

insufficiently educated amateur enthusiasts, who are the creators of extensive Internet content focused on traditional music and dance or intangible cultural heritage.

In terms of the public availability of archives with recordings of traditional music, folk songs (in notated or sound form), recordings of dance performances, or publications held at the Institute of Musicology of the Slovak Academy of Sciences in Bratislava, the possibilities are limited. More precisely, there is no public access to the materials through an online database or any portal with digital objects, although the digitization of the collection is being carried out slowly and with limited resources. The Institute of Ethnology and Social Anthropology of the Slovak Academy of Sciences has created and made publicly available a database of digital archives of image documents under the *Etnofolk* project, which provides online access to more than 118,000 digitized records of Central European and Slovak cultural heritage. Song recordings that are part of the institute's collection are being digitized, but are not included in the current public database. The Archive of Radio and Television of Slovakia has research recordings of traditional music from the second half of the 20th century, but mediates them only as part of radio and television programs, documentaries and specific programs dedicated to folklore (these are located in the institution's online archive).

In direct connection with UNESCO's Convention for the Safeguarding of the Intangible Cultural Heritage ratified in 2003, in 2008 the management of the Ministry of Culture of the Slovak Republic approved the *Program of care for traditional folk culture*. In accordance with its fulfillment, the Coordination Center for Traditional Folk Culture (currently the Center for Traditional Folk Culture) was established within the National Center of Culture and Education [Národné osvetové centrum]. Since its inception, it has been working on several important

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⁵ However, it should be emphasized that in the last two decades, scientific activity has paid great attention to the processing of the song collection through a genre perspective, as well as to historical sources of folk songs, resulting in a series of monographs and critical new editions of historical song collections supplemented with analytical commentary (see e.g. URBANCOVÁ, H.: *Trávnice – lúčne piesne na Slovensku: Ku genéze, štruktúre a premenám piesňového žánru*. Bratislava: AEPress, 2005. / URBANCOVÁ, H.: *Mariánske legendy v ľudovom speve: Príspevok k typológii variačného procesu*. Bratislava: AEPress, 2007. / URBANCOVÁ, H.: *Jánske piesne na Slovensku: Štruktúra, funkcia, kontext*. Bratislava: AEPress, 2010. / URBANCOVÁ, H. (ed.): *Andrej Kmeť: Prostonárodné vianočné piesne* [I.]. Edícia Monumenta Musicae Slovacae. Bratislava: Hudobné centrum, 2007. / URBANCOVÁ, H. (ed.): *Andrej Kmeť: Nápevy vianočných piesní* [II.]. Edícia Monumenta Musicae Slovacae. Bratislava: Hudobné centrum, 2015). All of these have been published exclusively in paper form, some are supplemented by a CD with musical examples.

⁶ The database is available on the Internet: Web (2): http://uetetnofolk.eu/index.php/main/records. The project was funded by the European Regional Development Fund (ERDF) and co-financed by participating institutions from the Czech Republic, Slovakia, Hungary and Slovenia.

⁷ Since 2010, the Center has been operating as a specialized professional workplace (in addition to being a contributing organization) at the Slovak Folk Art Collective (known as SĽUK, professional artistic body). The basis of the Care Program for Traditional Folk Culture (further on as TFC) are stated as being "long-term, purposeful and comprehensive direction to the development of cultural, historical and national consciousness of the population, to restore and maintain the historical structures and diversity of regional and local cultural expressions" (KYSEĽ, V. (ed.): *Program starostlivosti o tradičnú ľudovú kultúru*. [online]. Bratislava: Centrum pre tradičnú ľudovú kultúru: Zdroje informácií, 2008, p. 1. Available on: https://www.ludovakultura.sk/wp-content/uploads/2017/09/2-1-5-Program-starostlivosti-o-TK.pdf [visited 2021-04-15]). The program's stated forms of implementation are: "the creation of a central fund

projects related to the enhancement of cultural heritage. In the context of the topic of this paper, the "*Traditional Folk Culture Collection*" [Fond tradičnej l'udovej kultúry] is important. It is a website amassing (to date) 7,384 digital objects related to traditional folk culture (photographs, film recordings, sound recordings, documents and other digitized 3D objects) from the collections of private and legal persons acquired through the organization's own research from 2008–2017. The growing database contains nearly 2,500 sound recordings of folk songs, but there are no music transcriptions in the materials published so far.

The second possible source of digitized song materials is the *Slovakiana*⁸ national database, which is the result of a nationwide project to register, process, and copyright cultural and digital objects carried out by 16 research, educational, and memory institutions (libraries, selected museums, galleries, including the National Center of Culture and Education in Bratislava). Since the launch of the portal in 2015, digitized collections of objects in high resolution (including selected objects in the archives of the Music Museum – Slovak National Museum) have been made available to the public. Again, musical notations of folk songs are not found among the published objects, but the database does contain 650 sound recordings.

Various civic initiatives or passionate individuals represent an interesting complement or counterbalance to the state-led digitization projects mentioned above. The new online portal currently in development by the NGO Folklore Lovers' Club [Klub milovníkov folklóru]⁹ will likely play a key role in the field of education and popularization of traditional music and dance in Slovakia in the foreseeable future. The members of the association managed to collect an impressive number of tape and film field recordings from the private collections of dance choreographers, ethnographers, and the older generation of important actors in the folklore movement, who made recordings in rural areas in the second half of the 20th century. All the materials from various locations in Slovakia (especially from the eastern part of the country) have been digitized and are being catalogued, and a selection of them will be made available to the public through the interactive and educational parts of the website. The digital archive includes only a fraction of songs collected by the amateur ethnographer Ján Lazorík, the dominant part consisting of audio and audiovisual recordings.

The closest to the project that is the subject of this article are websites focused on the online collection and presentation of song lyrics or complete musical transcriptions of folk songs. Among these is the largest such portal in Slovakia, Songs for All – Lyrics and Sheet Music of Folk Songs [Pesničky pre všetkých – Texty a noty ľudových piesní], 11 containing several thousand

institution for the field of TFC and within it a central database of data on TFC; creating communication paths for users; creating reasonably attractive forms of TFC presentation; organizational, popularization, financial and other support mechanisms for the realization of the main goals" (KYSEĽ, V. (ed.): *Program starostlivosti o tradičnú ľudovú kultúru*, 2008, p. 1).

⁸ The online database is available on the website: Web (3): https://www.slovakiana.sk/ [visited 2021-04-09].

⁹ The online archive will be available on the website: Web (4): https://www.milovnici.sk/ [visited 2021-04-09].

¹⁰ These will be sound recordings of singing and of instrumental music, as well as film recordings. Employees of the Department of Ethnology and Folklore of the Faculty of Arts, Charles University in Nitra are working on the classification and cataloguing of records.

¹¹ The online database is available on the website: Web (5): https://pesnicky.orava.sk/. The site contains Slovak and Czech, Moravian, Polish, and Ukrainian songs, as well as folklorized tunes and the newer composed song repertoire. On the site, it is possible to easily search for song lyrics through sophisticated

transcribed song texts. The method of presenting folk song lyrics, the method of classifying and sorting songs (only part of which are complemented with an audio or video recording, or more commonly a musical score), point to the great effort of the authors to include as many lyrics as possible, yet without more serious professional ambitions. However, the whole project is still a respectable private initiative, financially supported solely through voluntary monetary donations from its supporters.

Tomáš Ulej and his digitization projects

Tomáš Ulej is a well-known Slovak journalist and a talented aphorist. In the context of the digitization and popularization of cultural heritage, he became publicly visible as the author of an extensive online database of works of Slovak literature – The Golden Collection of the SME daily [*Zlatý fond denníka SME 2.0*], ¹² thanks to which all the most important Slovak literary works are freely available on the Internet in full-text electronic versions. The extensive internet database of Slovak historical and classical literature includes 2,181 literary texts, starting with literary works from the 8th century and continuing from the 16th century to the 20th century.

The *Ľudo Slovenský* project is not, as mentioned, Ulej's first project. Likewise, it is not just about digitizing folk songs. It consists of several subprojects that are located on a separate, visually distinct Internet subpages of the project website. The first part of his activities under the *Ľudo Slovenský* brand was to make digitized proverbs and sayings from the collection of Slovak pedagogue, publicist, linguist and collector of folklore Adolf Peter Záturecký (1837–1904) totaling 12,000 items available to public visitors in a humorous, creative and visually appealing way. The phase focusing on the digitization of folk songs is therefore "only" the next in line.

In principle, the *Eudo Slovenský* project does not have a clear limit in terms of the amount of song materials that can be published on the Internet. In its initial phase, Tomáš Ulej chose an existing large corpus of folk songs as a starting point: the second supplemented and revised edition of *Slovenské spevy* [Slovak Songs] in 7 Volumes.¹³

Slovak songs – Slovenské spevy

Slovenské spevy represents the largest published collection of folk songs in Slovakia. Although it was no easy task and the finalization of the first 3-volume edition took almost 50 years, it can also be perceived as a unique material representation of the national emancipation processes of the 19th century in Slovakia (then part of the Austro-Hungarian Monarchy). The era of its birth was characterized not only by the gradual development of the national political movement and engaged cultural life, association activities in cities, or networking of representatives of conscious Slovak intelligentsia, but also a growing discussion about the need for systematic collection and publishing of folk songs and poetry, which would serve as an

105

filtering, some of them are supplemented by a hypertext link to the score for the accordion or other instruments).

¹² The resulting website (https://zlatyfond.sme.sk/) is, in addition to housing complete online texts of literary works, equipped with precise passportization, clear search and a number of funny and thoughtful technical aids that facilitate working with texts and make it more attractive to the user.

¹³ GALKO, L. (Ed.): Slovenské spevy I–VII. Bratislava: Opus, 1972–1989.

important artistic basis for the development of national music. This discussion is evidenced by several essays and critical or political agitation texts published in periodicals of the era. ¹⁴

Initially within the research agenda of the so-called Matica slovenská¹⁵ and later, after its temporary dissolution, as the main goal of an association based in Martin called the Commission for the Collection and Publishing of Slovak Songs [Povereníctvo pre zbieranie a vydávanie Slovenských spevov], a nationwide collecting event was initiated with the participation of 63 volunteer collectors (teachers, priests, and musicians) from various cities and villages in Slovakia. The project was financially supported by monetary donations and subscriptions from 239 donors. It was an extensive and unprecedented collecting event, initiated and methodically coordinated through a precisely prepared call and manual – The application and invitation in service of "Slovak Songs" from 1879. During the years 1880–1882 (part I, 6 books, ed. J. Kadavý), 1889–1897 (part II, 7 issues, ed. J. Kadavý, K. Ruppeldt) and finally 1889–1926 (part III, 5 issues, ed. K. Ruppeldt and J. Meličko; M. Ruppeldt) a total of 1,977 folk songs were published under the title Slovenské spevy.

Slovenské spevy aroused a great response not only among the Slovak intelligentsia. Several foreign collectors also expressed enthusiasm for the project. The collection became an inspiration for composers, as well as for the first theoretical treatises on the musical aspects of folk songs and their musical-structural development. Equally important were the critical reflections on the editorial processing of music manuscripts, which appeared in contemporary press during and after the project. They dealt, for example, with the issues of collecting methods, the correction of "incorrect intonation" of singers in music notation, the recording of melodies based on "Gregorian scales", and solutions for the transcription of rhythmic nuances, or melodic and textual variants. 18

In the context of the digitization project *Ľudo Slovenský*, the key edition of *Slovenské spevy* is the 2nd, revised edition of the collection prepared in the second half of the 20th century by

¹⁴ ELSCHEKOVÁ, A. – ELSCHEK, O.: Úvod do štúdia slovenskej ľudovej hudby. Bratislava: Hudobné centrum, 2005, p. 29.

¹⁵ Established in 1863 as a cultural and scientific institution with a national-emancipatory mission.

¹⁶ KRESÁNEK, J.: Slovenské spevy. In: *Encyklopédia ľudovej kultúry Slovenska 2*. Bratislava: Veda, 1995, p. 170. / GALKO, L.: Vznik Slovenských spevov. In: *Slovenské spevy I*. Bratislava: Opus, 1972, p. 19. It contained detailed instructions regarding the selection of repertoire, the selection of respondents, the method of recording the melody and multi-voice, the indication of the singer's name, location, song genre and the function of the song, etc.

¹⁷ The folk song collector, composer and folklorist Béla Bartók was also an admirer of the project. In one of his letters addressed to Matica slovenská, he stated: "[...] *Slovenské spevy* is an extraordinarily important collection, so later many foreign music scholars will undoubtedly deal with it... It is truly admirable that you have been able to publish such a beautiful collection on your own without any state support, only with the help of amateur collectors... " (quote published In: LENG, L. – MÓŽI, A.: *Náuka o slovenskom hudobnom folklóre*. Bratislava: Univerzita Komenského v Bratislave, 1973, p. 73.). For the 3rd and final issue of *Slovenské spevy*, he even offered to contribute his manuscript of Slovak folk songs, but the sociopolitical situation, especially the First World War, precluded its inclusion (GALKO, L.: Vydávanie a ohlas Slovenských spevov. In: *Slovenské spevy I*. Bratislava: Opus, 1972, p. 30.).

¹⁸ See GALKO, L.: Vydávanie a ohlas Slovenských spevov. In: *Slovenské spevy I*. Bratislava: Opus, 1972, p. 23-31.

ethnomusicologist, folk songwriter and composer Ladislav Galko (1916–1987). In 1954, he discovered and compiled the manuscript records of folk songs from *Slovenské spevy* in the Literary archive of Matica slovenská. Among them were also over 2,100 previously unpublished songs. Thus, during the editorial preparation of the 2nd edition of this collection, Galko had at his disposal not only its 1st published version, but also original notations, some even with written footnotes from their collectors. This allowed him to compare and analyze the material from various standpoints. As he presents in his extensive introduction to the 2nd edition, he also corrected and supplemented some musical notations to varying degrees, as they differed from their manuscripts. On the other hand, he addressed the complicated problem of the variability of texts and melodies, as well as the overall inconsistency of the editorial processing of the 1st published version of the collection. The result of his work is represented by 7 extensive volumes of more than 4,000 songs, published between 1972 and 1989 by the Slovak music publishing house Opus.²⁰

Ladislav Galko took into account all the above-mentioned problems in detail, which was also reflected in the graphic and content design of individual song notations. To distinguish the data from the manuscripts, the 1st edition and the information added by him, he used a system of different parentheses, specific characters, italics and a system of notes under the notation (**Figure 1**). It was this fact that posed a great challenge not only in terms of the digitization process,²¹ but especially in relation to the design of the website *Ľudo Slovenský*, its functionality and user-friendliness. The aim was to preserve all the information contained in the original sheet music when publishing the song on the Internet, but at the same time to construct the design of the website in such a way that it would be clear in content and easy to navigate for the average user or primary/secondary school music teacher.

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¹⁹ He worked as a specialist at the music and literary archives of Matica slovenská in Martin, and after 1961 at the Institute of Research on Art (now the Institute of Musicology, Slovak Academy of Sciences in Bratislava). His musical-folkloristic activity was significant with his concentrated interest in the editing of historical collections of folk songs of the 19th century. Many of them were valuable testimonies of the early stages of the concentrated collection of folk songs and folk poetry in our territory: GALKO, L. (ed.): *Eudové piesne z Liptova a Oravy: Podľa zbierky Jozefa Czupru z pol. 19. stor.* Martin: Osveta, 1958. / GALKO, L. (ed.): *Piesne svetské ľudu slovenského v Uhorsku*. Vol. I. and II. Bratislava: Tatran, 1988. See further: KREKOVIČOVÁ, E.: Galko, Ladislav. In: *Encyklopédia ľudovej kultúry Slovenska*. Bratislava: Veda, 1995, p. 147.

²⁰ The first 3 volumes (*Slovenské spevy I.–III.*) contain all songs from the 1st edition. The other 3 volumes are named *Appendices* [*Dodatky*] *D1–D3*. These contain unpublished songs and a selection of songs from the first 3 volumes which differ from their manuscript versions to a significant degree. The last volume is the so-called *Registers* (Reg.), in which Galko concentrated registers of songs, as well as comparisons with sources published before 1905 and other results of extensive comparative work Compare: GALKO, L. (Ed.): *Slovenské spevy I–VII*. Bratislava: Opus, 1972–1989.

 $^{^{21}}$ The digitization of the 2^{nd} edition was carried out with the kind consent of the heirs of Ladislav Galko and the Opus publishing house (at the time the project was launched, the publications of this important music publishing house were managed by the Forza agency, with whom negotiations took place).

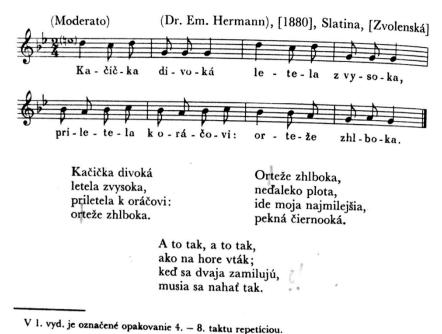


Figure 1 Notation example of the song Kačička divoká letela z vysoka [The Wild Duck Flew High Above], "Galko's" edition.

Source: GALKO, L. (ed.): Slovenské spevy I., p. 144

Different types of parentheses indicate whether the information comes from the manuscript, from the 1st or the 2nd edition. The editor's note points (in this particular example) to the difference between the presented song and its rendition in the 1st edition of *Slovak Songs*.

The digitizers' community and its internal hierarchy

The specificity of the presented digitization project is, first of all, that all of its activities are based on the principle of volunteering. Within a few days of the call published on December 2016,²² 117 volunteers had responded. To date, 150 people have worked on the project in their free time. There are no deadlines in the project. The time needed to process the material is determined by each volunteer. Some work on a daily basis (digitizing dozens of songs a week), while others participate only occasionally. The members of the community are complete laymen, fans of folklore, members of the folklore movement, or active musicians, and only a few have a formal education in ethnology or music. Although Tomáš Ulej guarantees the most active

²² The call was published in the Blog section of one of the largest dailies in Slovakia, Denník N. ULEJ, T.: Štartuje projekt digitalizácie kultúrneho dedičstva Slovenska, [online]. In: Denník N: Blog. 2016. Available on: https://dennikn.sk/blog/623499/startuje-projekt-digitalizacie-kulturneho-dedicstva-slovenska/ [visited 2021-04-10].

digitizers several types of benefits (e.g. a discount on the purchase of books in an online bookstore, newspaper subscriptions, etc.; the name of the digitizer is given for each song published on the Internet), this is a rather negligible aspect of building relationships between participants. The motivation and source of energy for all involved is exclusively a sincere interest in participating, motivated by various stimuli. Perhaps it is the need to contribute to the preservation and popularization of cultural heritage, or the valuable song repertoire that is difficult for ordinary people to find, or it may simply be curiosity strengthened by practical experience with folk music, or even professional motivations resulting from a musical or pedagogical focus.

All communication between digitizers and project coordinators and the distribution of song material takes place in electronic form. For this purpose, Tomáš Ulej created the online platform $\mathit{Ludo Slovensk\acute{y}}-\mathit{The Community}$ [L'udo Slovensk\acute{y}- Komunita], where each digitizer has a personal account. The platform enables the uploading and downloading of files, mutual communication between participants, and creation of online manuals. It is, in principle, a work environment through which digitizers communicate, solve problems related to partial digitization processes and obtain material for digitization.

In the second phase of the project, Ulej selected a small group of the most active and consistent participants, which is in charge of checking the already digitized song transcriptions and uploading them to the website. For this purpose, he created a special online form in which the individual data for each song unit is filled in (**Figure 2**). It is in this step that, by distinguishing the individual columns, the data is entered, which is valid either for individual printed editions of *Slovenské spevy*, or for manuscript materials. The form also contains a tool for uploading the digital (scanned) copy of the page from *Slovenské spevy* with the given song (PDF format), digital MuseScore notation of the song (MSCZ format) and MIDI audio track of the music version of the recording (MP3 format). Once the form is submitted, the song uploads itself to the website and can be immediately searched and used. Any music teacher or regular user who searches for a given song on the site can not only play it directly from the page, but also download it in the above-mentioned formats.



Figure 2 An online form through which finalized digital material is uploaded to a website.

Source: www.ludoslovensky.sk

Methods of digitizing and publishing sheet music on the Internet

Scanned copies of the publication are uploaded to the "community" page gradually, always 100 songs at a time, divided into 20 compressed ZIP folders (**Figure 3**). Each volunteer downloads a folder that contains two files:

- A copy of five consecutive pages (5 songs) of the Slovenské spevy collection (PDF format) and
- 2. a digital music score file containing these 5 songs, which was created by an automated software "reading" of the given PDF-document (XML format).²³

Each digitizer must open the XML file in the MuseScore computer program and, according to the scanned records of folk songs, divide it into 5 separate music units – exactly according to the PDF template. At the same time, they must also check or correct any errors in the electronic music transcription. Therefore, the participants do not have to manually rewrite all the songs, they only "correct" the errors that arose during the conversion of the data from the PDF (scanned)

110

²³ Computer programs were used for this purpose: NotateMe (https://www.neuratron.com/notateme.html) and SmartScore 64 (https://www.musitek.com).

version of the notation into its new digital form. Specific additional characters and accompanying editorial notes, which are usually present in each notation of a song in *Slovenské spevy*, are not processed in this phase of digitization, but are added to the page by Tomáš Ulej himself.

The second important step is to transcribe the lyrics of the song from the PDF original into a TXT file. The finalized material in the form of five electronic music notation files and five text files with song lyrics are then sent to the project administrator. Since the launch of the project, approximately 3,000 songs from the collection have been digitized this way. 320 are located on the website.

Por. č. piesni	Stav (Voľná/Obsadená)	Podklady (nastiahnutie)	
1001,-1005.	Digitalizuje sa (lubica.janigova)	Pre stiahnutie kliknite sem	•
10061010.	Digitalizuje sa (lubica.janigova)	Pre stiahnutie kliknite sem	
10111015.	Digitalizuje sa (lubica.janigova)	Pre stiahnutie kliknite sem	
10161020.	Digitalizuje sa (bozena.olejnikova)	Pre stiahnutie kliknite sem	
10211025.	Digitalizuje sa (bozena.olejnikova)	Pre stiahnutie kliknite sem	
10261030. 10311035.	Digitalizuje sa (Ivana.cernecka) Digitalizuje sa (Ivana.cernecka)	Pre stiahnutie kliknite sem Pre stiahnutie kliknite sem	
10411045.	Digitalizuje sa (jozef.marko)	Pre stiahnutie kliknite sem	
10461050.	Digitalizuje sa (jozef.marko)	Pre stiahnutie kliknite sem	
10511055.	Digitalizuje sa (ivana.cernecka)	Pre stiahnutie kliknite sem	
10561060.	Digitalizuje sa (ivana.cernecka)	Pre stiahnutie kliknite sem	
10611065.	Digitalizuje sa (jozef.marko)	Pre stiahnutie kliknite sem	
10661070.	Digitalizuje sa (bozena.olejnikova) Digitalizuje sa (jozef.marko) Voľné Digitalizuje sa (ivana.cernecka)	Pre stiahnutle kliknite sem Pre stiahnutle kliknite sem Pre stiahnutle kliknite sem Pre stiahnutle kliknite sem	
10711075.			
10761080.			
10811085.			
10861090.	Digitalizuje sa (ivana.cernecka)	Pre stiahnutie kliknite sem	
10961100.	Digitalizuje sa (ivana.cernecka)	Pre stlahnutie kliknite sem	
ubica.janigova Ľubica J			feb '18
Beriem: 10011005.			
10061010.			
10111015.			
oozena.olejnikov	va .		feb '18
Bozena Olejniko	va		

Figure 3 A list of folders with material for further processing that volunteers share/divide among themselves through chat communication (see the bottom of the picture) and download to their computers for further processing.

Source: www.komunita.ludoslovensky.sk

The primary goal of this type of project is to provide analog materials (in this case a printed song collection) online in their entirety and in full digitized form. In our case, therefore, it is not merely a matter of publishing a scanned photocopy of the printed collection of *Slovenské spevy*, but the processing of all types of information about individual songs and their publication on the website in full electronic form. This means that the internet version of a folk song entry contains all the elements of its print version. In order to maintain user clarity, aesthetic appeal and ease

of use on the site, we were forced to rearrange this information in various ways using pop-up windows and hypertext. This phase of the project was the biggest challenge for us. The way these elements are arranged is naturally related to the technological possibilities and limitations of the website in general and has an impact on the subjective experience of the site. We took as a must that the original data could not be lost, altered, or mixed up when individual song units are published.

The various technical and methodological complications and issues have made and still occasionally make the project a particularly instructive, yet challenging affair. Some problems arose directly from the nature of the digitized source. The reason was simple: with *Slovenské spevy* we are not dealing with an "ordinary" song collection, but a richly indexed and cross-referenced source of Slovak folk music.

Website structure and interface design for each song unit

Each printed musical-textual record of a folk song in *Slovenské spevy* consists of several parts: serial number of the song, melodic record with the text of the first stanza of the song, transcription of all lyrics, tempo, collector's name, geographical determination of the song's origin (name of the municipality or village), and the year the song was recorded. Some of the musical transcriptions contain a note in parentheses, placed immediately after the metric marking, which indicates the original position of the vocal interpretation of the song by the respondent. In addition to these relatively common graphic elements, there are sometimes also dynamic marks or footnotes indicating melodic or textual variants of the song in question.

We managed to orient the specific visual elements in the online version of the song so that the page remains clear, playable and complete for the user while preserving all the data present in the original. The Internet version of each song unit consists of the following elements (**Figure 4**):

- song incipit (title),
- data on the collector, digitizer and geographical origin of the song,
- melodic notation of the song with the lyrics of the first stanza, which can be played online directly from the page,²⁴
- the text of the song, including the first stanza,
- a survey question, whether the visitor of the site is familiar with the given song,
- editorial notes by Ladislav Galko,
- graphic links to other song variants on the website, according to instructions indicated by Ladislav Galko,
- a section with the basic information about the song,
- the *All information*-button, through which a pop-up window with accompanying data of the original song will be displayed, as well as information on whether the data comes from the manuscript, 1st or 2nd edition of *Slovenské spevy* (**Figure 5**),
- an interactive map indicating the place / region of origin of the song as indicated by Ladislav Galko (**Figure 6**),

²⁴ The site works with xmlplay software, a javascript program that renders a score file /MusicXML or ABC/ and plays the music using real time synthesis in the browser.

- hypertext lines, through which it is possible to download PDF (digital photocopy of a song recording from Slovak songs), recording in MP3 format (audio MIDI version of the song) and XML version of the song (digitized sheet music with text, intended for printing or musical interpretation),
- hashtags to facilitate searching and cross-referencing,
- slideshow with other folk songs in the database.

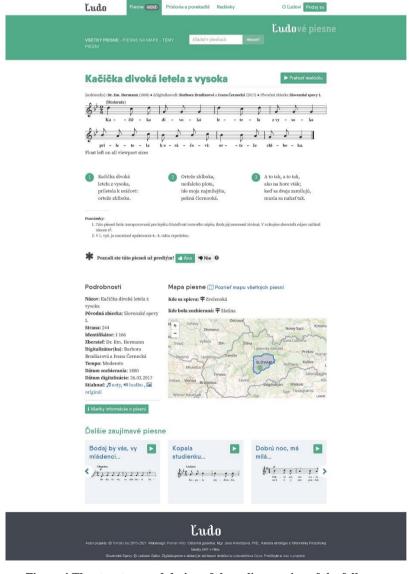


Figure 4 The structure and design of the online version of the folk song on the ludoslovensky.sk website

V

Kačička divoká letela z vysoka (všetky informácie o piesni)

Zdroje informácii o tejto piesni

Noty, texty, poznámky a ďalšie informácie o piesni, ktoré uvádzame na týchto webových stránkach, vychádzajú z viacerých zdrojov - 1. z rukopisných informácií zberateľov a prispievateľov zbierky Slovenské spevy; 2. z pera redakcie prvého knižného vydania Slovenských spevov; 3. od zostavovateľa druhého vydania Spevov Ladislava Galka (doplneného a kritického), alebo 4. tak, že ich na tento web z iných zdrojov pridali spolupracovníci webu Ľudo Slovenský. Aby sme záujemcom uľahčili orientáciu, uvádzame na tomto mieste pôvod informácií týkajúcich sa tejto piesne:

Údaj	Hodnota	Ako bol získaný	
Názov	Kačička divoká letela z vysoka	Prvé ani druhé vydanie neobsahuje názvy (incipity) piesní. Dopĺňame vychádzajúc z prvého verša piesne.	
Pôvodná zbierka	Slovenské spevy I.	Údaj preberáme z druhého vydania	
Strana	244	Údaj preberáme z druhého vydania.	
Identifikátor	I 166	Údaj preberáme z druhého vydania.	
Zberateľ	Dr. Em. Hermann	Údaj nemá podklad v rukopisoch zberateľa, no bol uvedený v prvom vydaní	
Digitalizátor(ka)	Barbora Brndiarová	Údaj pridávame pre potreby tohto vydania.	
Digitalizátor(ka)	Ivana Černecká	Údaj pridávame pre potreby tohto vydania.	
Tempo:	Moderato	Údaj pochádza z prvého vydania a má podklad v rukopisoch zberateľa	
Dátum zozbierania	1880	Údaj bol doplnený do druhého vydania na základe druhotných dokumentov	
Dátum digitalizácie	2017-02-26	Údaj pridávame pre potreby tohto vydania.	
Poznámka č. 1 Táto pieseň bola trans čitateľnosť	ponovaná pre lepšiu	Poznámka bola pridaná digitalizátormi Ľuda Slovenského	
Poznámka č. 2		Ide o poznámku spracovávateľa druhého vydania.	

Figure 5 Additional information in a separate pop-up window with more detailed information.

Source: www.komunita.ludoslovensky.sk

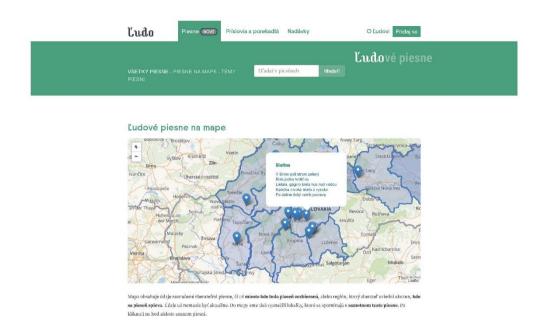


Figure 6 Songs can also be searched via an interactive map on a separate subpage.

Source: www.komunita.ludoslovensky.sk

Conclusion

The *Ľudo Slovenský* folk song digitization project by Tomáš Ulej is exceptional within the Slovak context. The so-called crowdsourcing principle, i.e. the principle of voluntary participation, makes it even more unusual and interesting. By its very nature, the project highlights one important fact: the implementation of this type of digitization project does not require a large financial investment. A segment of the public is so culturally aware and interested in cultural heritage that they are willing to devote their precious free time to (professionally coordinated) digitization work. Many folklore fans have contributed their free time – from minutes to hours – so that everyone with an Internet connection can have free and user-friendly access to song repertoire from the turn of the 20th century.

It is interesting to note that *Slovenské spevy* was created in exactly the same way – thanks to financial contributions and the volunteer work of teachers, priests and nationally conscious collectors who submitted thousands of their own folk songs from various parts of present-day Slovakia to be compiled and published. With a certain degree of exaggeration, we could talk about *Slovenské spevy* as a nationwide volunteer crowdsourcing event of the 19th century, and *Ľudo Slovenský* as its symbolic, postmodern echo.

Experience with a project of this nature also points to its fragility. Its full functioning depends exclusively on human resources. The pandemic and family commitments have slowed Ulej's

involvement in the last year and a half, but with all the prerequisites in place, the digitization of this unique collection will undoubtedly be completed as life returns to normalcy.

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Slovenské spevy on-line: Projekt Ľudo Slovenský a digitalizácia zbierky ľudových piesní s dobrovoľníckou pomocou verejnosti

Veľké množstvo ľudových piesní, ktoré sa postupne v 19., najmä však 20. storočí zhromaždilo v publikovaných piesňových zbierkach vďaka intenzívnej zberateľskej a edičnej činnosti, predstavuje bohatý a vzácny materiál, využiteľný v súčasnosti v kontexte rôznych umeleckých a vzdelávacích aktivít. Tento materiál však z rôznych dôvodov často nie je dostupný záujemcom, ktorí s ľudovou piesňou pracujú v rámci záujmovo-umeleckých aktivít, vo folklórnom hnutí, alebo v školstve. V posledných dvoch desaťročiach na Slovensku vznikli internetové stránky, ktoré ľudové piesne sprostredkúvajú rôznymi spôsobmi: buď v podobe databázy piesňových textov, v menšej miere úplných textovo-melodických zápisov doplnených zvukovými ukážkami. V roku 2016 bol iniciovaný projekt s názvom *Ľudo Slovenský – Ľudové* piesne, ktorý k problematike digitalizácie ľudových piesní a ich sprostredkovaniu širokej verejnosti pristúpil nevšedným, súčasne zaujímavým spôsobom: s využitím princípu dobrovoľníctva. S minimálnymi finančnými prostriedkami, v spolupráci so 150-timi dobrovoľníkmi sa v priebehu relatívne krátkeho času podarilo zdigitalizovať približne 3000 piesňových zápisov a 320 umiestniť na interaktívnej internetovej stránke projektu. Príspevok predstavuje genézu projektu a kontext, v ktorom vznikal, teoreticko-metodologické aspekty procesu digitalizácie piesní a ich uverejňovania na internete. Hlavným zámerom prvej fázy projektu bola digitalizácia piesňových zápisov, v druhej interaktívne sprostredkovanie obsahu jednej z najvýznamnejších a najrozsiahlejších piesňových zbierok na Slovensku - Slovenské spevy.

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