Revival and Multiplatform Presentation of Forgotten Religious Heritage Sites in the Project Named "Sacred Past"

Gizella Börcsök[1], Róbert Z. Nagy[1], Krisztián Vollmuth[1],
Zsolt L. Márkus[2][0000-0001-9483-4564], András J. Molnár[2][0000-0002-2194-0320],
György Szántó[2][0000-0001-6216-7488], Tibor Szkaliczki[2][0000-0002-7699-8132], Miklós Veres[2],
Zsolt Weisz[2]

[1] Symmetry Foundation, 7. 2/3, Vármegye Str., H-1052, Budapest, Hungary
[2] Institute for Computer Science and Control (SZTAKI),
13-17, Kende Str., H-1111, Budapest, Hungary
`symmetry-foundation@symmetry-hu.com,`
`markus.zsolt@sztaki.hu, modras@sztaki.hu,`
`szanto.gyorgy@sztaki.hu, szkaliczki.tibor@sztaki.hu,`
`veres.miklos@sztaki.hu, weisz.zsolt@sztaki.hu`

Abstract. The objective of the paper is to shed light on the importance of the digital presentation of religious heritage and present the multimedia documentation of a chapel developed within the "Oltári Múlt" ("Sacred Past", in Hungarian) project. It aims to preserve the values of medieval churches through video documentation. Walls and stones come alive for contemporary visitors, connecting the present with the past. The paper showcases an example of a chapel and how video documentation, virtual tours, and other ICT tools are applied in the project to create a digital narrative with a creative vision and mastermind approach.

Keywords: Religious Heritage, Pilgrimage, Multimedia, Digital Narrative, Virtual Walk.

1   Introduction

The Symmetry Foundation and the Institute for Computer Science and Control (SZTAKI) conduct joint research and development work for the digital presentation of Hungarian religious heritage.

The Symmetry Foundation within its "Oltári Múlt" ("Sacred Past", in Hungarian) project aims at preserving the values of Hungarian medieval churches with video documentation (with a creative vision, creative, mastermind approach) editing its innovative publication for the churches (AR augmented reality). Hierophany, a sticking point in the profane space is every sacred, accented building. To achieve our goal, we create a GPS-based strategy game and interactive (virtual) tours (digital narrative – ICT – Information and Communication Technologies) to help visitors get to know religious

heritage. The developer of the GPS-based game is our partner SZTAKI. Our strategic partner in the creation of the cultural route is MATE (the Hungarian University of Agriculture and Life Sciences).

Our goal is to create a tourist itinerary connected to history (in the Carpathian Basin), with innovative technical solutions, following the principle of learning by playing. By applying new technologies based on digital content, significant value-added services can be created in the field of cultural tourism. We intend to bring interactive solutions into churches, respecting the ethical and moral approach of the given place. We strive to preserve the local tradition and culture, keep the local communities alive, and boost tourism. The architecture as a whole and within it, especially the unique values of the built heritage contribute significantly to the strengthening of our national identity. It enhances the experience of embracing culture together with works of art of applied and fine arts.

The remainder of this paper is organized as follows. Section 2 provides an overview of the Sacred Past project. Section 3 introduces the rediscovery of the past from the aspect of a pilgrim. In Section 4, the Chapel of Assumption of Mary in Gercse is introduced. Section 5 introduces the multimedia components (video, virtual walk, photo gallery, audio records, and interactive leaflet) applied to present the church. Section 6 concludes the paper and presents some ideas for future work.

2 The Sacred Past Project

"At the broadest level, the natural and cultural heritage belongs to all people. We each have a right and responsibility to understand, appreciate and conserve its universal values." – declares the ICOMOS International Cultural Tourism Charter (ICOMOS, 1999).

The overall goal of our Sacred Past project is to make the abandoned, neglected, unsustainable (by the church and the believers) medieval churches more attractive by creating cross-border innovative attractions that enable the innovative utilization of cultural and religious heritage sites (heritage management). The strategic goal of the project is to involve residents and tourists (regardless of their age) in using the existing cultural heritage in a new way, not only by visiting our precious religious heritage and observing it passively but by getting involved actively and making use of the current church and its surroundings.

The Sacred Past project has been designed by taking into consideration of the Hungarian and international regulations, recommendations, principles, ICOMOS and UNESCO Charters, and national and European Union strategies in the field of cultural heritage and digitalization, e.g. The ICOMOS Charter for the Interpretation and presentation of Cultural Heritage Sites (ICOMOS, 2008a), The ICOMOS Charter on Cultural Routes (ICOMOS, 2008b); the Commission Recommendation on the digitalization and online accessibility of cultural material and digital preservation (European Commission, 2011), A Digital Agenda for Europe (European Commission, 2010), Multilingual Inventory of Cultural Heritage in Europe (Multilingual Inventory, 2023), Lund Principles (The Lund Principles: Conclusions of Experts Meeting, 2001), National

Info-communication Strategy (Nemzeti Infokommunikációs Stratégia (2014-2020), 2014), National Education Strategy (Magyarország Digitális Oktatási Stratégiája, 2016), etc.

The concept of cultural routes was introduced by the Council of Europe in 1987, which was created to implement the cultural principles of the Council of Europe, such as human rights, cultural democracy, cultural diversity and identity, and dialogue across borders (Cultural Routes of the Council of Europe programme, 2023). The basic goal of the route is to draw attention to the importance of the common tradition, resulting from the cultural heritage of the individual member countries. The objective of the program is, on the one hand, cross-cultural dialogue and the strengthening of the European cultural identity, and on the other hand, the preservation of natural and cultural heritage and its sustainable presentation. In October 1987, the declaration of Santiago de Compostela designated the Saint James Pilgrimage Route as the first cultural route of the Council of Europe. In this declaration, the basic and still valid qualification framework was defined. According to the definition of the new declaration, the Cultural Route is a cultural, educational heritage, and touristic cooperation project, the purpose of which is a route based on a historical route, cultural concept, person, or phenomenon, with transnational importance and significance for the understanding and respect of common European values or developing and supporting a series of routes.

Under the name and organization of "Oltári Múlt", to raise awareness of the valuable religious heritage sites joint study tours have been organized to Hungarian medieval churches every month with the cooperation of MÉSZ (Association of Hungarian Architects) and the Heritage Management Department of MUT (Hungarian Society for Urban Planning). We plan to develop heritage education programs for adults, young professionals, and the youth as well, using digital presentation techniques and tools.

Among our experts are Mária Prokopp, professor emeritus, Hungarian Heritage Award winner art historian, and Zoltán Magyar, writer, folklorist, and ethnographic researcher. Since 1997 he is a senior scientific associate at the Institute of Ethnography of the Humanities Research Center of the Hungarian Academy of Sciences.

3 Rediscovery of the Past as a Pilgrim

Pilgrimage has become a popular activity in recent times. Through various forms of pilgrimage, people get on their way. Confessional religion has been observed as declining in our Western societies while different forms of spiritual activities have come alive and popular, up to the point where it has become an identity-forming phenomenon (Iliev, 2020). Pilgrimage is in some sense, and for some people has become the only way of explicitly connecting to religion, sacred spaces, or tradition, and so, properly presenting sacred sites and buildings becomes more important than ever for transmitting religious values and heritage.

Since pilgrimage has become a recreational activity as well as a substitute for confessional religious activities to some extent, many visitors have no reference context for interpreting sacral spaces. Moreover, connection to community, traditions, and liturgical activities, which are characteristic of religion in general and used to be the

primary use of such sacral spaces, became 'foreign' to those visitors. It is a challenge to present the culture associated with the site(s) so that visitors can experience it in customized and freely 'consumable' ways. Creative ways of presentation with a possible invitation to immerse into, understand, and personally reflect on the provided religious cultural aspects are highly important, especially at churches and other sacred sites which are not constantly populated and not even kept open and accessible from inside. Such presentation methods not only need to take into account the different knowledge and experience levels of visitors related to these contents and spiritual-religious culture but also the types of visitors and their attitudes towards the visit. The general types can be described using the *experience quadrant* (Pine & Gilmore, 2013), where the dimensions of passive-active participation and absorption-immersion form the four types of visitor behaviour as being either Entertainment, Education, Aesthetic, or Escapist. The Sacred Past project tries to invite pilgrims visiting sacred spaces to rediscover the past and present in all these different ways.

Beyond the experience quadrant, pilgrimage has much more to offer. Traditionally, pilgrims departed to shrines, tombs, and other sacred locations for religious motivations. A true pilgrimage has a liminal dimension where the pilgrim is exposed to leaving one's everyday living context and accepting the unknown, thus becoming a wanderer where the previous life stage is over but the new stage and status is not yet a reality, or not even yet known (Turner & Turner, 1978). Although not every pilgrimage has to be a life-changing event, there is usually some transformative aspect or desire involved, and the visitor becomes not only a consumer but a *prosumer* and potentially a *transumer* (Dixit, 2017). A pilgrimage is also a place of Encounter–through the holy spaces and times, through the way taken–with the World on a more profound level, with oneself, and the Transcendent. These encounters can be facilitated by a proper presentation and the encounters may facilitate the transformative aspect of the pilgrimage if there is openness in the visitor.

Tourism has also been recognized on different levels of religious institutions as becoming a *transversal reality,* strongly influencing many aspects of contemporary life (see e.g. (Marchetto, 2007)). During the touristic activity, the visitor is usually in an open mental state, which may be exaggerated by the pilgrimage setting, seeking authenticity and tending to be attracted to mystic stories and phenomena. Although it is often expressed that the *'way is the goal'*, the way consists of places and moments, and a sacred site as a narrative space can provide important messages and 'feed' the pilgrim spiritually and mentally as well. Therefore, at a sacred site, not only a historical-artistic presentation and preservation of heritage is possible, but it also includes its sacral-spiritual dimension, which lies at the core of the place, and had originally given its *raison d'être*. Using multimedia methods opens up the possibilities of going beyond a mental-informational presentation towards a more artistic, and thus emotional, or even mystic dimension of the interpretation of the location and the space. When done well, it brings authenticity by recalling the activities used to take place at the site or actualizing those for the contemporary visitor. One of the keys to preserving the heritage and tradition is to *reconnect* to the original, alive community of the past, who created and used the space to the extent possible so that the visitor can connect not only to the 'bare stones' but also to the present or past community in spirit by 'bringing the stones alive' (Pietre

Vive / Living Stones, 2023) and so, may have a chance for a more authentic Encounter - with the place, with its message, with oneself and with the Transcendent.

4 Chapel of Assumption of Mary in Gercse

Gercse was once a village, which is now part of the 2nd district of Budapest, on the north-western border of the Hungarian capital. It was first mentioned in writing in 1212 (in a document called *Canonica Visitatio*). The settlement was inhabited until 1595 then the residents fled from the Turks. The village might have been destroyed after that completely. After the Turkish era, the settlement was never rebuilt, despite this, the Chapel of Gercse is one of the best-preserved churches of the medieval villages in Budapest. The Chapel was first renovated in 1956. The results of an archaeological excavation in 1958 suggest that this Chapel was once surrounded by a protective wall.

We can assume that in Roman times some buildings stood at the site of the Gercse Chapel. In 1956 at the time of Emese Nagy's archaeological excavations, several stones of Roman origins were found under the nave and there were some inbuilt into the protective wall. Originally the Chapel was built in the Romanesque, its walls are from the 12th century. A sanctuary built in the shape of a horseshoe is rare in Hungary. The destruction of the 12th-century Chapel may have been caused by fire and the fact that it was uninhabited from 1595 to 1728 may have contributed to its further destruction. The restoration was completed in 1732 in Baroque style: during the renovation the original entrance, which was on the south side, was walled up. A new one was opened on the west side and a sacristy and another room were built on both sides of the sanctuary, which made its original horseshoe shape into a square shape. Another renovation took place in 1774 when a gallery could be built in the Chapel and the round window above the western gate could also be created at that time. Around the Chapel, according to medieval customs, there was also a cemetery, which operated even in the 1700s, however, there is no sign of this on the surface today, and only archaeological excavations have confirmed its existence (Nagy E. , 1958).

The Chapel of Assumption of Mary in Gercse, which had been abandoned for a long time, was rebuilt in 1996. The surrounding communities first organized a pilgrimage to the reconstructed and revived Chapel on August 14, 1999, to make it a tradition.

Within the Sacred Past project, the Chapel of Assumption of Mary in Gercse has been chosen for digital presentation for several reasons. It is situated on the territory of Budapest, and close to a pilgrimage route, thus it is easy to access. It has been renovated recently, thus it is in very good condition inside and outside as well. It is used only for holy mass on Sunday, thus it is closed to the public on weekdays. All these make the Chapel an ideal place to carry out digital experiments in acoustics and photoshooting.

5 Multimedia Presentation of the Chapel

5.1 Videos

How would this film be different?

The fundamental difference between our film and the documentaries is that the hero of the film is the Chapel. We travel back in time to the past 800-1000 years and tell the story with the help of architectural elements that have survived in our time. We walk around every little detail and present it with devices and from angles that the ordinary visitor would not be able to see with their own eyes without today's technical and film devices. (Gercsei Nagyboldogasszony-Kápolna, 2023) (Fig. 1).

We aim to use special optics, lighting, and devices to evoke and present the special form and acoustic world of our medieval churches and provide our visitors with a spiritual experience. We would record certain churches on film and photos in every season. Filming in the four seasons enriches the scene, the directorial possibilities, and the effect and experience achieved by the films.

The church environment provides an opportunity to use still and moving images, mixed sound, and music elements so different contents and ideas could be presented with diverse media elements, and it can be available in several languages. By promoting cultural and pilgrimage tourism and providing a creative form of education the finished material can be used to give a new function to the forgotten and neglected churches. These technologies make our built heritage interesting and exciting for young people as well, allowing them to enter certain sacred spaces of history and learn about the top achievements of the architecture of a given era. Getting to know our sacred heritage helps our cultural and moral development.

It was a doctrine of churches that their space should have special acoustics. A long time ago there was no sound system, therefore the sermons spread acoustically. Singing and sacred music had a specific sound in the house of God, and because of that, these spaces are also suitable for concerts. With these aspects in mind, we intend to do experiments with music in churches.

Drone footages

The mass, shape, and layout of the church will be shown from a bird's eye view using drone footage. Where the space of the church allows, we use a drone to photograph the sometimes monumental spaces of the churches inside. All of these create a possibility to extend the film into virtual reality. We would be able to see angles that we could not see before without drones.

Wire Cam

Where the church space allows us we will use a wire cam. The essence of the wire cam is that we move a camera on a wire as a slider, and while moving on it we can show special movements inside the church.

Laowa 24 macro objective

With the help of a Laowa 24 macro objective, we can explore a very unique world. We will be able to get an insight into the wall paintings, paint on painted cassettes, and cracks. We can show stone carvings up close, in a way that the human eye cannot.

The use of Slider, Time lapse

Using a Slider and stop motion, we can create a very special atmosphere through the quick movement of clouds behind the still church.

Volumetric lighting – Smoke machine

Where the church administrator allows, we disperse smoke inside the church, and with artificial lighting, using volumetric lighting through the windows we can create an atmosphere of light inside the church.

Fig. 1. Screenshots from the video about the Chapel of Assumption of Mary in Gercse.

5.2 Virtual Walk

How can we show the beauty of a church? Do we talk about it and tell what it was like? Or rather, we show it, we walk around it, arousing interest, and desire in you that you would like to be there and visit these places, touch the stones, inhale the scent of flowers, and experience the atmosphere of a thousand-year-old place.

The best way to experience it is by a virtual walk. SZTAKI created several panorama pictures and virtual walks on sites with touristic, cultural, religious, and scientific relevance in Hungary and other countries (Márkus, et al., 2022) (Nagy, et al., 2016). In the current project, they prepared the virtual walk for the Chapel of Assumption of Mary in Gercse (Virtual Walk, 2023). The virtual walk consists of 360° spherical panorama pictures taken outside and inside the chapel. The virtual walk is presented on the Web with the help of a player developed by SZTAKI (Fig. 2).

The users can virtually look around the space in the photos taken by the camera which creates 360-degree spherical panorama images. They can move from one location inside or outside the church to another where the panorama pictures were taken. Details can be discovered by zooming in on any part of the virtual space. The users can feel during the virtual visit as if they would move in the space of the chapel. This special experience gives a taste of the mood and atmosphere of the sacred place, providing the

opportunity to the ones who cannot travel to these places, and arousing the interest of those who want to travel.

Fig. 2. Virtual walk.

5.3   Photo Gallery

The photo gallery is composed of high-quality pictures of the chapel and its surroundings. We took photos both at the interior and outside of the building covering full location of the chapel. Some photos were extracted from the most spectacular shots of the video and some of the outside photos were taken using drone. The gallery allows presentation of additional photos covering historical evolution of the location.

Preparation of the photos followed uniform requirements referring both to their artistic concept and technical / shooting details. The gallery highly contributes to the increased customer experience when using it on a website (Galéria, 2023) (Fig. 3). The Photo Gallery can also host further sacred locations, buildings, memorial places.

Fig. 3. Photo gallery on the website of the "Sacred Past" project.

5.4 Audio

Every church has its acoustic world. As background music for our short films of the churches, we would like to play period instrumental and sacred vocal music that had been recorded at each church's location.

We would like to provide the richest experience not only for the eyes but also for the ears. We aim to show the churches in their most simple forms; in Gercse in the Chapel of Assumption of the Virgin Mary, we had the opportunity to empty the church completely and take out the pews and all the objects that were collected in the church space over the years. We want to create a direct connection with the space created by the church and the people, in which the sounds resonating in the church space, the speech and music created by sounds, play an important part. We give voice to prayers and instrumental sounds without an amplifier just using the space of the church as it was designed at the time without the help of electronic devices. The *tárogató* is a Hungaricum, a Hungarian instrument that we used the clear sound of to present the acoustics of the Chapel of Assumption of the Virgin Mary in Gercse (Tárogató a gercsei Nagyboldogasszony-Kápolnában, 2023).

5.5 Leaflet

For the exhibition, an innovative and interactive leaflet can also be made. The two-page publications would be full of innovative solutions; the ones that are inherent in today's

modern phone applications, photography techniques, and computer programming. Augmented Reality (virtual illustration with 3D modelling) will gain a place in public education in the near future. We create a 3-dimensional effect from a 2-dimensional space or object using photography techniques and AR, thus the publication will come to life allowing looking around in external and internal space and watching a short video in connection with the exhibition. We could see certain objects come to life in 3 dimensions, with the help of a QR code we can take the reader to a site that would provide them with more information and descriptions of what they see. Photographing the exhibition spaces with a camera that creates a 360-degree image enables a virtual tour of the exhibition both inside and outside, visitors can even follow where they are in the floor plan in the upper right corner.

6   Conclusions

As a result of the joint research and development work of the Symmetry Foundation and the SZTAKI, within the Sacred Past project, a set of multimedia components has been developed to preserve the values of medieval churches and as a first stage of establishing a cultural route. Through this creative digital narrative, virtual visitors may have the impression they would look around at the real place of the sights. The ICT components applied in the project open new channels to attract visitors to religious destinations.

We have several plans for the future:
- 3D scanning of churches.
- Assigning hotspots to specific parts of the chapel in the virtual walk where users can get additional information. By clicking on a hotspot, a description pane will open with either general information on the chapel or details on the selected area.
- Creating digital narratives of other medieval churches in the Carpathian Basin.

References

Cultural Routes of the Council of Europe programme. (2023). Retrieved April 12, 2023, from Council of Europe: https://www.coe.int/en/web/cultural-routes

Dixit, S. K. (2017). *The Routledge Handbook of Consumer Behaviour in Hospitality and Tourism* (1st ed.). Taylor and Francis.

European Commission. (2010). *A Digital Agenda for Europe.* Retrieved April 12, 2023, from EU Law - EUR-Lex: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF

European Commission. (2011, October 10). Commission Recommendation of 27 October 2011 on the digitisation and online accessibility of cultural material and digital preservation. In *Official journal of the European Union*, *OJ L 283, 29.10.2011 (*pp. 39-45). Retrieved April 12, 2023, from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32011H0711&from=EN

Galéria. (2023). (K. Vollmuth, Producer) Retrieved May 10, 2023, from "Oltári múlt": https://oltarimult.hu/?page_id=602

Gercsei Nagyboldogasszony-Kápolna. (2023). Retrieved April 12, 2024, from https://www.youtube.com/watch?v=dwFGcFMx0Uw

Hegyközi, I. (Ed.). (2005). *Digitalizálási stratégiák - Szakirodalmi szemle.* Budapest: Könyvtári Intézet. Retrieved April 12, 2023, from https://mek.oszk.hu/10500/10595/10595.pdf

ICOMOS. (1999). *International Cultural Tourism Charter - Managing Tourism at Places of Heritage Significance.* Retrieved April 12, 2023, from International Council on Monuments and Sites: https://www.icomos.org/images/DOCUMENTS/Charters/INTERNATIONAL_C ULTURAL_TOURISM_CHARTER.pdf

ICOMOS. (2008a). *The ICOMOS Charter for the Interpretation and Presentation of Cultural Heritage Sites.* Retrieved April 12, 2023, from International Council on Monuments and Sites: https://www.icomos.org/images/DOCUMENTS/Charters/interpretation_e.pdf

ICOMOS. (2008b). *The ICOMOS Charter On Cultural Routes.* Retrieved April 12, 2023, from International Council on Monuments and Sites: https://www.icomos.org/images/DOCUMENTS/Charters/culturalroutes_f.pdf

Iliev, D. (2020). The evolution of religious tourism: Concept, segmentation and development of new identities. *Journal of Hospitality and Tourism Management, 45*, 131-140.

Magyarország Digitális Oktatási Stratégiája. (2016). Retrieved April 12, 2023, from Digitális Jólét Program: https://digitalisjoletprogram.hu/files/55/8c/558c2bb47626ccb966050debb69f600e. pdf

Marchetto, A. (2007). Tourism, a Transversal Reality: Pastoral Aspects. *People on the Move, N. 105*.

László Márkus, Z., Szkaliczki, T., Szántó, G., Veres, M., Weisz, Z., Luchev, D., Paneva-Marinova, D., Goynov, M., Pavlov, R., & Pavlova, L. (2022). Virtual Walk in the Church of Nativity in Arbanasi. *Digital Presentation and Preservation of Cultural and Scientific Heritage, 12,* 63–74. https://doi.org/10.55630/dipp.2022.12.4

Multilingual Inventory of Cultural Heritage in Europe. (2023). Retrieved April 12, 2023, from http://www.michael-culture.org/about.html

Nagy, E. (1958). A középkori Gercse temploma. In *Budapest régiségei. Budapesti Történeti Múzeum évkönyve, 18* (pp. 543-564). Budapest: Akadémia Kiadó.

Nagy, J., László Márkus, Z., Kaposi, G., Szántó, G., Szkaliczki, T., & Vass, N. (2016). New Tourist Service Based on Virtual Reality Glasses in the Town of Miskolc, Hungary. *Digital Presentation and Preservation of Cultural and Scientific Heritage, 6*, 81–92. https://doi.org/10.55630/dipp.2016.6.8

Nemzeti Infokommunikációs Stratégia (2014-2020). (2014). Retrieved April 12, 2023, from Website of the Hungarian Government: https://2010-2014.kormany.hu/download/b/fd/21000/Nemzeti%20Infokommunikációs%20Stra tégia%202014-2020.pdf

Pietre Vive / Living Stones. (2023). Retrieved April 12, 2023, from http://www.pietre-vive.org

Pine, B. J., & Gilmore, J. H. (2013). The experience economy: past, present and future. In *Handbook on the Experience Economy* (pp. 21-44). Edward Elgar Publishing.

Tárogató a gercsei Nagyboldogasszony-Kápolnában. (2023, May 5). Retrieved May 9, 2023, from https://www.youtube.com/watch?v=rlsrs7IP3jg

The Lund Principles: Conclusions of Experts Meeting. (2001, April 4). Lund, Sweden. Retrieved April 20, 2023, from https://www.iccu.sbn.it/export/sites/iccu/documenti/lund_principles-en.pdf

Turner, V., & Turner, E. (1978). *Image and Pilgrimage in Christian Culture.* Columbia University Press.

Virtual Walk of the Chapel of Assumption of Mary in Gercse. (2023). Retrieved May 2, 2023, from http://files.elearning.sztaki.hu/Escape3D/gercse/