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THE ROLE OF SMART PHONES AND QR CODES IN THE TOURISM IN SÁRVÁR



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1. Introduction

As 10-grade students of Tinódi Sebestyén secondary grammar school and technical school of tourism and catering in Sárvár specialized in travelling and tourism subject – we decided to follow the tradition of our school and enter the GTTP Research Award where the topic given was *Technology and sustainable development*. Five of us took part in making our project and preparing for the competition.

Our project is entitled *The role of smart phones and QR codes in the tourism in Sárvár*. The aim of our paper is to get an answer to the question of how much the touristic services in our hometown, in Sárvár, use QR codes and modern technology in their marketing activities. Our hypothesis is that in the tourism of our town this kind of information technology is still quite underutilized.

At first we will define the basic terminology in our analysis, then we will briefly describe the effects of today's technical development in tourism, as well as how it is connected to sustainability. In our paper the theoretical part of the presentation is followed by our practical work, where at one hand we completed a questionnaire survey about the use of QR codes and Smart phones and on the other hand we made interviews on the subject with the representatives of Sárvár Tourist & TDM Nonprofit Kft (Ltd.). As part of the practical work we have generated QR codes for the most important sights of Sárvár.

2. Choice of topic, basic terminology

The base of choosing our topic was an article we read in the journal named *Földgömb (The Globe)*. In this article the author gained all the interesting touristic information in a Polish town only with the help of his Smart phone and QR codes that he found on boards of the walls of the sights of the city. His story made us realize that such boards could also be helpful in the tourism of Sárvár. Sustainability - as a factor in the competition- appears in our paper in a way that the use of QR codes and the Smart phones can significantly



reduce the paper-based touristic mass products (flyers, brochures), which most of the time land in the trash during a trip.

Since not everyone is aware of the concept of the **QR code**, we would like to introduce it briefly. The QR code is actually a mobile code, which was developed in Japan in the industry, logistics and production. It is getting more and more widespread because of its easy use. It is used as a potential data medium in advertising or in commercials. Most phones have their own QR code scanning software.¹

The **smart phones** are phones that have touch screens and their own operation system (Android, iOS, Windows Phone 7, BlackBerry OS, Samsung Bada, etc.) Basic functions include a GPS, Wi-Fi connection, large memory, a 3-5 Megapixel camera, a music player. Moreover, a motion sensor, an accelerometer, a light sensor can also be found in some types.²



Samsung Galaxy S5

The **sustainable tourism** is the result of the process of the development of tourism, which manages the resources in a way to meet the economic demands while the cultural values, the biological diversity and the maintenance of systems of life on earth are not affected. The first (I.)World Conference on Sustainable Tourism was held on the island of Lanzarote with representation from 40 countries in 1995.³



The island of Lanzarote

¹<http://hu.wikipedia.org>

²<http://www.globalplaza.hu>

³<http://www.lelegzet.hu>

3. About the QR code in details

The QR code helps Smart phone users find Web contents quickly. This application immediately takes you to the given page without browsing. As described earlier, the QR code is a two-dimensional barcode (which is basically a point code), which was developed by Denso Wave company in Japan in 1994. The name comes from the abbreviation of an English term: Quick Response (rapid answer) referring to the fast reverse speed and quick reaction required by the user. An advantage of the QR code is that it can be scanned from any directions, the correct positioning of the code is not important. Another positive feature of the code is its scalability (number of versions: 40). The different versions have different storage and fault tolerance features. In 2008 the most popular was the "Level L" (L level), as it had the ability to store a lot of information on a much smaller place than a one dimensional code.⁴

The biggest "disease" of codes, as well as the QR codes is that they can be broken. In several countries e-tickets and identity cards are QR code based. The above mentioned problem has been solved by a Hungarian company, by Cellum that developed a method, which was a great success at the Money2020 Conference in Las Vegas. The new generation of mobile QR code ("Motion" QR code ") is a technology that can merge a variety of different data, into a graphic sign system that is changing every tenths of a second. This technology is capable of storing all the data of a complete ID card or passport with a photo, or data of any biometric identification system in the code that appears on the phone. The scanned image cannot be copied, saved or forwarded so it can only be used by its rightful owner. An image sequence can be forwarded of course but it is not worth it because the Cellum code identifies the user. It is possible to assign the photo of the buyer to concert tickets or bus tickets purchased on the Internet or via Smart phones so the multiple use of the ticket or forgery can be avoided. International Financial Services and IT Giants are seriously interested in this new solution by Cellum. The commercial application is expected to appear on the market in 2014.⁵



The so-called smart-QR code also belongs to the QR code innovation that makes it possible to change the Internet content behind the code. This innovation also can be linked

⁴<http://hu.wikipedia.org>

⁵<http://hirek.prim.hu>

to sustainability, since by changing the content behind the code it is not needed to throw away the already printed materials containing the code (e.g., brochures, flyers, billboards, etc.) and thus the marketing activities of a company may become more cost effective.

A software that can be purchased to a code makes it possible to create statistics of its use. The program will show the code scanning activity, which enables companies to respond to consumer behaviour and modify their campaign by developing the application of the code.⁶

4. The role of the QR code in the tourism of Sárvár

While preparing this project we tried to get information and gain experience about how much the QR code is known and used in Sárvár.

The first part of our practical work was a questionnaire survey, which focused on our age group testing them in connection with the QR code. The next step of our research was a visit to the local tourist information office called Tourinform, and to the spa to make interviews about whether the QR code have appeared in the town's tourism or not. In the third stage we prepared a "QR code tour", which we presented to the local TDM experts.

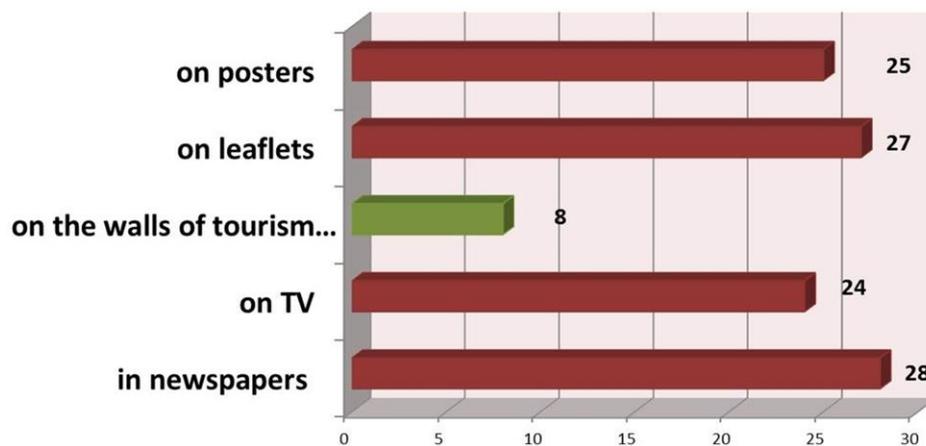
4.1. Questionnaire survey

One of the keystones of our practical work was an online questionnaire about the QR code that was shared among our friends. Our questionnaire (Annex no1) included ten simple questions that were easy-to-understand. We defined the task short and clean and we drew attention to the fact that filling in the questionnaire is voluntary and anonym. The answers were suitable for statistical processing so based on the results we created charts and graphs.

⁶<http://sqrqcode.hu/site/page?view=smartqrqcode>

44% of the people who filled in the questionnaire answered with a NO to the question: „Do you know what the QR code is?” After this we presented a picture of a QR code online that was recognized by everybody without any exceptions. It seems that the picture of the QR code is better known than the name itself. In terms of our survey - the most important information we got was from the answers of the second question. We found out that very

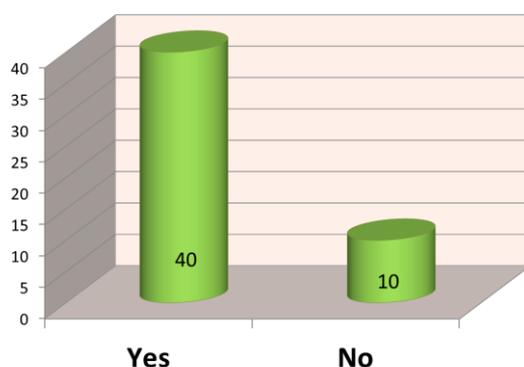
Where have you seen QR codes?



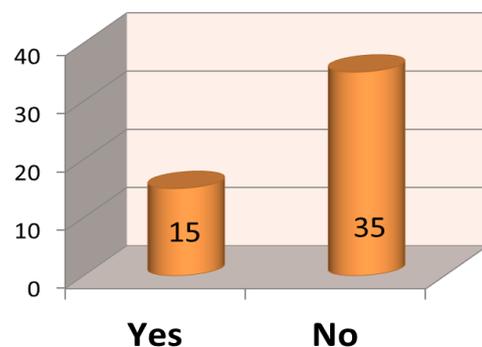
few people who filled in our questionnaire saw QR codes on the walls of touristic buildings, therefore our idea of the QR code tour may bring a novelty to the tourism of our hometown.

According to the answers to the third and fourth questions most people do have smart phones but they do not really use them for reading QR codes.

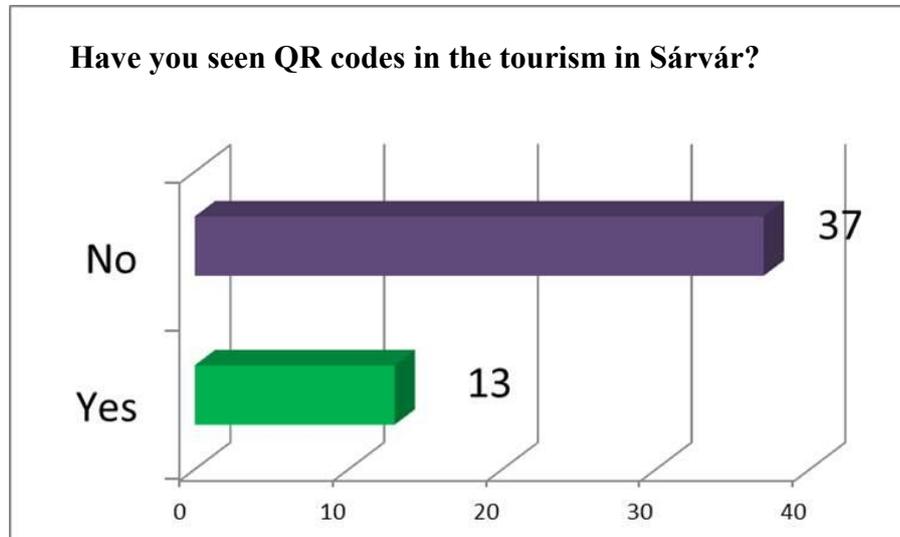
Have you got a smart phone?



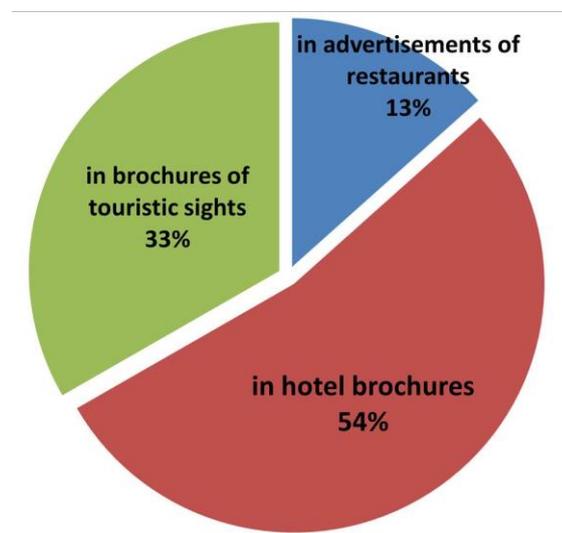
If yes, have you used it for reading QR codes?



This result shows that this form of gathering information is not yet widespread among our age group. The next questions referred more directly to the connection between the tourism in Sárvár and the QR codes. We can learn from the answers that the use of QR code is in its infancy in Sárvár.



If yes, where?



80% of the people asked gave the answer yes to the question: *'Do you think that having a QR code on the walls of the main tourist sights in Sárvár is a good idea (Castle, Arboretum, Churches, famous buildings)?'*

Summing up the results we came to the conclusion that people of our age - as a possible marketing target - know about QR codes but very few use them. We also found out that QR codes are present in the tourism in Sárvár but services need to make quite a lot of improvement in this field.

4.2. Interviews

1. location: Tourinform, Sárvár

Interviewees: Krisztina Holpert, informant HND; Ferenc Haller TDM Manager

An important stage of the process of data collection was the local Tourinform. The office has been operated by the Tourist & TDM Nonprofit Kft. (Ltd.) since 2012, whose members are the Sárvár Self-government, the Hotel Danubius, the Hotel Park Inn and the Hotel Spirit; as well as the Sárvár Tourism Association. Ms Holpert Krisztina who works in the Tourinform office told us that from 2014 more and more brochures will contain QR codes. The most recent printed material is the contact cards of the TDM employees (Annex 2-3) which shows a QR code of the TDM website. Mr Ferenc Haller TDM manager said that there is going to be a QR code development in several spots in the town within the frame of a European Union tender that will include the new smart QR codes.

2. location: Sárvár Spa Ltd. marketing department

Interviewee: Eva Timar, marketing Assistant

During the interview we got to know that the QR code is free of charge for the services, so it means that it is not required to pay royalty fees when used with the aim of advertising. QR codes have been used in the spa for two years, they were implemented with the aim of technical development and they first appeared on the web page of the spa. Using the QR codes-as we have already described in the theoretical part - is very simple, with the help of a telephone application you can scan the QR code, which in this case takes the reader to the website of the Sárvár Spa or the Adventure Park. Currently, the code can be found in the Austrian, German, Czech and English



brochure of the Adventure Park. The spa addresses the younger age groups with the QR codes however there is no record kept of the number of users. (annex 4).

4.3. QR code tour

Our team had a great idea, an idea that has not been seen in our town. The name is the Sárvár QR Code Tour. The idea on the one hand helps tourists navigate and obtain information, on the other hand it is extremely environmentally friendly, it does not need printed brochures or maps, all it requires is a smart phone.

The first step in the implementation of the idea was planning the tour along the main sights and then drawing it on a map. After this, we generated a QR code to the web pages of each sight and we put these codes to the walls of the sights. Generating a QR code is very easy, you can choose from many Web pages on the Internet. We generated the codes on <http://qr-kod.hu>. You have to enter the address of the website from which the software generates a picture of the QR code that can be downloaded (annex 6). We the QR codes on the walls or the boards of the sights and then we took a walk following the route.

The tour starts by visiting the Tourinform office where the tourists will find the first QR code. This code leads them to the map with the tour that we prepared. (Annex 4). Starting from the office the tour based on the map takes them to the main attractions. The first spot is the Arboretum, which is very attractive for the holiday makers.



You can get to the Nádasdy Castle through the park where the Nádasdy Ferenc Museum is worth seeing which has a rich collection of the history of Sárvár. The following destination is the main square where a happy fountain, the beautifully renovated Town

Hall, a World War I. monument and the impressive church of Saint László can be seen. The next sights of the QR code tour are less known. One is a former two-story kindergarten building in a small street behind the main square, where a famous Hungarian poet, Géza Gárdonyi worked as a teacher. The next sight is a unique blue building that used to be a nunnery, (earlier an archducal hunting residence) and it can be found in the main street, in Batthyány Street.



5. Summary

Today, the QR code is one of the most dynamically developing area of mobile communications. Nowadays, we can find the small, black and white (or colored) square on almost every surface of an advert. Therefore, it is not a coincidence that the marketing of tourism also uses the QR code more and more. It is possible to use it with a Smart phone that represents the peak of high-tech. Its advantage is that it makes it a great deal easier for tourists with a smart phone to navigate and to communicate and it reduces the use of paper. In addition to this it also contributes to sustainability by reducing paper use.

In the first part of our project we give some examples without being exhausting for the application of high technology appearing in tourism then we focus on QR code. During our research we tried to gain as much information as we could about the QR code, about how it was invented, about its everyday use and about the latest developments. In the preparation of our project were given help from experts of the local Tourinform and of the Sárvár Wellness Spa Ltd. we could get first-hand information on the role of the QR code in

the tourism in Sárvár. During our research we found out that the code has already been used for several years by different touristic services. Part of our project was a questionnaire survey among our acquaintances. Based on the survey we learned that young people are familiar with the QR codes, although they do not use them and there are still some shortcomings and areas to improve in the field of tourism. The last part of the project was an idea that already exists in other cities. The idea presents a QR code tour that we realized easily. We handed our project and our QR code tour to the experts of the TDM.

Last but not least, we can say that during working on our project we learnt a lot and we gained many useful experiences while having lots of fun. We hope that our micro research contributes to the development of tourism in our hometown, in Sárvár.

Acknowledgements

We would like to express our very great appreciation to Viktor Víg a biology and geography major teacher who also teaches us the specialty subject travelling and tourism for his assistance of preparing our project. We would also like to thank to Krisztina Holpert, an employee of the local TDM and to Éva Timár, the marketing assistant of the Wellness Spa Ltd. for their professional help and for providing us marketing materials. In addition, we would like to thank for the assistance and support of the global partners.

6. Annexes

1. Annex: Questionnaire

Dear Friends,

We are preparing for a competition at Travel and tourism specialty subject where the topic is the effect of technological development on tourism. We would like you to help us by filling in a short questionnaire. Filling in the questionnaire is anonymous and voluntary. Thank you for your help in advance: the GTTP team.

1. Do you know what the QR code is?

Yes No

2. If yes, where have you seen it? (You can select more than one answer)

in newspapers
on TV
on the walls of tourist facilities
on leaflets
on posters

3. Have you got a Smart phone?

Yes No

4. If yes, have you used it for reading QR codes?

Yes No

5. If yes, what kind of information did you get with the QR code?

Catering
Accommodation
Entertainment (movies, theater, music, pub, etc.)
information about products
fine arts (architecture, poetry, etc.)
other:.....

6. have you seen the QR code in the tourism of Sárvár?

Yes No

7. If yes, where?

in restaurant brochures
in hotel brochures
in leaflets of tourist attractions
in other advertising material

8. What do you think of using the QR code? Is it easy or difficult?

It is very easy
It is easy
It is difficult
It is very difficult

9. Do you think that having a QR code on the walls of the main tourist sights in Sárvár is a good idea (Castle, Arboretum, Churches, famous buildings)?

Yes No

10. Have you or your friend generated a QR code yet?

Yes No

2. Annex: the two sides of the business card of Tourinform



3. We visited the Tourinform



4. Annex: QR code adverts of the Spa

Elkészült a Fűrdő okostelefon alkalmazása!

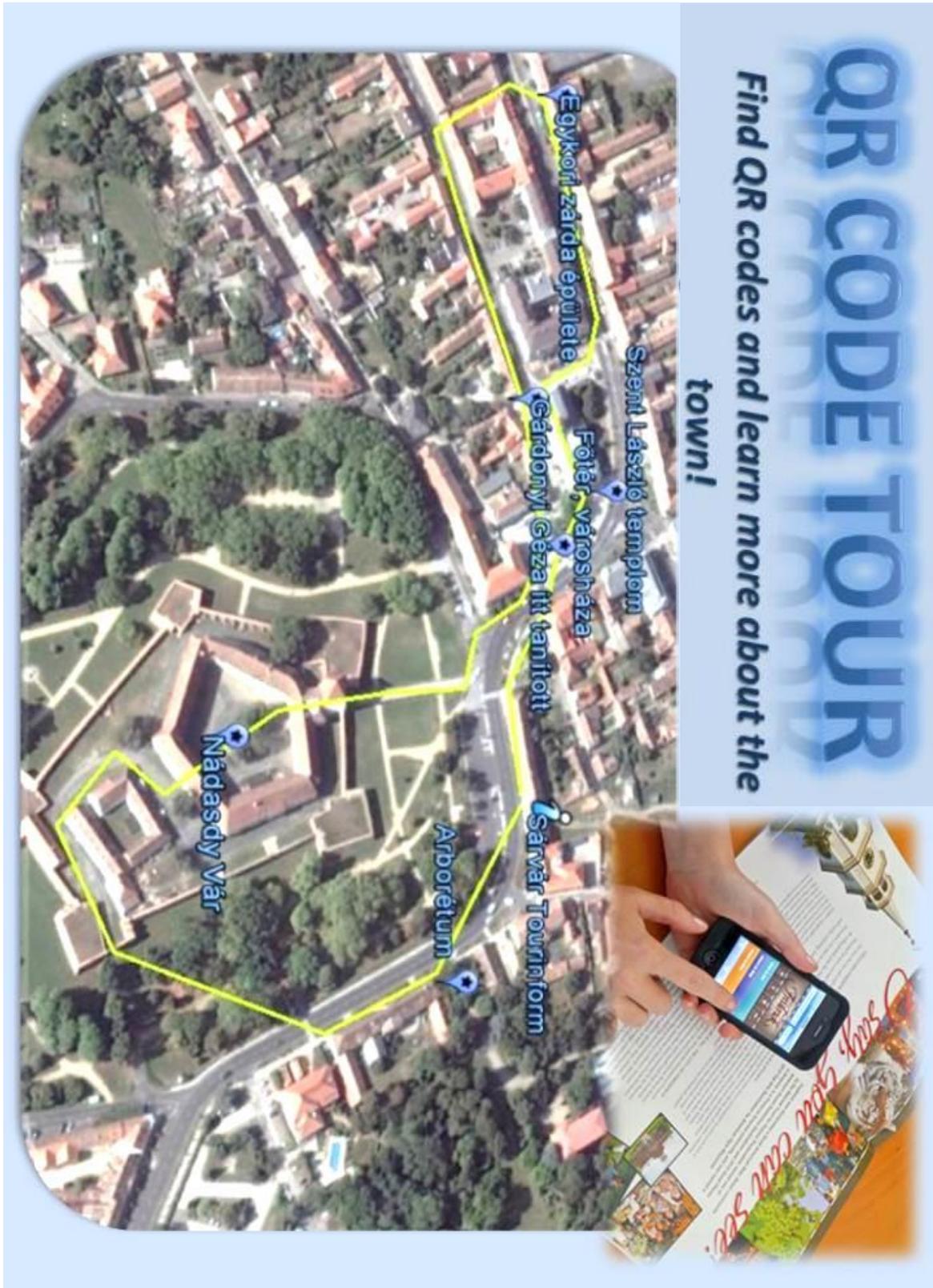
Ha elsők között szeretnél értesülni a Fűrdő programjairól, híreiről, legfrissebb kedvezményes ajánlatairól, akkor töltsd le alkalmazásunkat!

Android iPhone Windows 8

NEBEN DER THERME

SÁRVÁRER Élebnisparc
WWW.SÁRVÁRERLEBENISPARC.HU
WWW.SÁRVÁRFÜRDŐ.HU

5. Annex: The map of our QR code tour



6. Annex: our generated codes: Sárvár Arboretum, Nádasdy Castle and the Church of Szent László (top line images); sticking and testing of the QR code in front of the Castle (bottom image)



7. Bibliography

- <http://www.globalplaza.hu/hir/mi-az-okostelefon-bemutato-arakkal>
- <http://hu.wikipedia.org/wiki/QR-k%C3%B3d>
- <http://www.lelegzet.hu/archivum/1997/06/0857.hpp.html>
- http://informatika.gtportal.eu/index.php?f0=alapfogalmak_25
- http://www.turizmusonline.hu/utazasirodak/cikk/turisztikai_szoftverek
- <http://www.hostware.hu/?q=piac>
- <http://www.anteus.hu/index.php>
- <http://hu.wikipedia.org/wiki/QR-k%C3%B3d>
- http://hirek.prim.hu/cikk/2013/10/08/qr_2_0_uj_generacios_qr_kod_torolheti_el_a_nyomtatott_igazolvanyokat_es_jegyeket
- <http://sqrqcode.hu/site/page?view=smartqrqcode>

Pictures from:

- <http://www.idea.org/blog/wp-content/uploads/2011/09/qr-code-01.jpg>
- http://www.mobilport.hu/data/cikk/40/45/28/cikk_404528/1.jpg
- <http://www.hermann-meier.de/wo-natur-kunst-ist.html>
- <http://www.hostware.hu/piac>
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- <http://veddamagyart.info/tudomany/6864-magyar-ceg-mutatta-be-az-uj-generacios-qr-kodot>

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