

Modern Technologies and Their Meaning for the Development of Non-traditional Forms of Tourism (an Example from the Broumov Region)

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Abstract

The paper focuses on the description of the current state of tourism in the Broumov Region and the evaluation of the currently used modern technologies such as geocaching, QR codes etc. in the region. Using questionnaire surveys it investigated the possible application of new technologies and the development of new forms of tourism products and their importance for the development of the region. The paper shows the newly prepared geocaching trail via the Broumov Region focusing on a set of baroque churches.

Key words: Tourism, geocaching, QR code, modern technologies, Broumovsko.

JEL Classification: O310

1 Introduction

Tourism has recently become an inherent part of the lifestyle and subsequently a more and more significant part of the economy, particularly due to the considerable added value it brings to society. Modern technologies are in the process of constant development and as time goes by they become a part of our everyday life. This applies similarly to the integration of modern technologies in the tourism sector. At first technologies change the method and conditions of the implementation of tourist services, and lately various trends focusing on experience and travel methods have emerged.

Modern technologies influence both the scientific and development activities in the tourism sector as well as awareness and experience gained by visitors thanks to their participation in travelling. The main technologies significant for scientific activities include a still camera or a camera system, while on the other hand experience and awareness are influenced particularly by internet, mobile data technologies and mobile devices, which are currently most used and have a vast impact on choosing the type of tourist services. **The article aims at the exploration of the possible application of new technologies in the development of new tourism forms and products and their targeted employment as well as the potential importance for development of the tourism sector in the Broumov Region.**

The cardinal means for this paper preparation was communication with various organisations and their cooperation in providing data. This concerned predominantly entities involved in the process of modern technology integration in tourist activities, both official public institutions as well as private organizations. Methods used in this work include particularly: analogy, analysis, deduction, description, questioning, comparison, literary search and synthesis.

2 Modern Technology Utilisation

Modern technologies, particularly internet and various types of mobile devices influence tourism via a wide array of applications and games based on a combination of the social network and outdoor activity principles. Some of the possible utilisation is described further on.

2.1 Foursquare

Foursquare or the geo-location service enables sharing one's location by means of the so-called check-ins at specific venues. Use of the foursquare is absolutely free of charge, but internet access is necessary, so it can be used only in places with available wifi or if you have internet in your mobile. If a place does not have a venue yet, it can be easily created, thus increasing awareness about the point of interest. Businesses may use foursquare for various discount or other offers for check-ins in their establishments (this utilisation is not very common in the CR at present, it is possible to use it mainly abroad, in this country the foursquare functions more on the basis of the social network and in the form of a game). For each check-in a user will receive various types and quantities of points depending on several evaluation aspects. A user has a chance to become a "mayor" in the given place (for obtaining the highest number of check-ins in the last 60 days). Apart from points users may gain badges for various achievements, which represents another challenge for some of the users.

Foursquare enables the sharing of one's location and knowledge of the venue, taking a look where their friends are, finding out information about the place, but also competing in the form of collecting various badges and points as well as the possibility of obtaining interesting discounts. This combination of a geo-location and social game with possible rewards for log-ins has attracted 47,867 users in the CR and their number is increasing and therefore in the future it may have a great influence on various fields of tourism. [1]

2.2 Geocaching

The geocaching game, in Czech also called a treasure hunt, has recently become a very popular way of how to spend one's free time. It is an official game with a number of written and unwritten rules, but it needs to be pointed out that it is a non-commercial game, which should not be conceived for the purpose of gains. And yet it is possible to use the game as one of the methods of promoting the locality or a means of passing on information about interesting places in the region. To be able to participate in the game, the best option is to acquire a GPS device, nonetheless one can also look for treasures on the basis of satellite pictures or other methods, which most of the "cachers" (official name for geocaching participants in the CR, *meaning drakes, chosen for similar sound properties*) started on. The game is based on acquiring GPS coordinates, which will determine the location of the box (treasure – cache) you wish to find.

However, a large group of people took a fancy not only to the search for caches as such but also to collecting various articles relating to geocaching.

Particularly recently, geocaching has become more of a social community, which gathers also around types of caches other than the actual boxes hidden at the given certain coordinates. Various other types of caches are employed here, such as the Event Cache, where geocachers get together for a certain purpose, whether it is on the occasion of a celebration, a special trip or just an ordinary gathering and meeting in a restaurant. A similar cache type is the CITO (Cache In Trash Out Event), a specific event focusing on cleaning and protecting nature, when a community meets up and collects litter, plants trees or builds paths. [4]

In March 2014 the number of active caches in the CR amounted to 35,838 of almost all types and sizes. At the same time the number of geocaching participants in the CR reached 121,601 registered users according to the gcstat server. Table 1 shows the development of the activities of geocaching users in the CR from 2000 to 2013, which demonstrates a significant increase in the number of members who more and more influence the tourism trends in the CR. It represents an average monthly value in the given year. [8]

Tab. 1 Average Number of Geocaching Users in the CR per Month in 2000 – 2013

Year	2000	2001	2002	2003	2004	2005	2006
Users	0.4	0.7	5	14	57	252	1188
Year	2007	2008	2009	2010	2011	2012	2013
Users	2899	7049	11808	14839	20316	22814	24019

Source: Internal sources of the project-gc.com website

One must always factor in the activity of geocaching users in the course of the year, which is important for planning municipal and regional projects connected to activities relating to or similar to geocaching, because in the winter months the activity is down to approx. 50% of the maximum value. Therefore, it is necessary to preferentially aim projects of this type at summer months.

2.3 QR Codes

QR code technology is used in many ways. One of them is the Munzee outdoor game, based on QR code scanning and collecting points. It can be compared with the above mentioned geocaching, but is not about looking for a physical box, but merely a sticker. Munzee is a new trend, which was established in California in 2011, and therefore one cannot exactly deduce what influence it will continue to have on the tourism sector but it can be presumed that hand in hand with more people owning modern telephones and having internet in their mobiles the interest in this form of tourism will experience growth. [10]

A specific project attempting to take the use of the QR codes outdoors to supplement or possibly gradually replace information boards is Doháje.cz, which provides information about nature trails and details relating to interesting places directly onto the display of a mobile telephone. The principle lies in marking individual stops on nature trails with information signs - the so-called tag-lists with 2D codes, which can be scanned with an ordinary mobile telephone equipped with a camera, internet access and one of the freely available applications for QR or BeeTagg code

reading. The information content does not contain only a text, but also pictures, comics, sounds and video or current information. [9]

A practical example of QR code use from abroad can be seen in a town in Great Britain with a chequered history, which decided to get the younger generation interested in it. The town of Monmouth or the “first wikipedia town” and the Wikipedia UK organization jointly prepared a unique project of documenting the entire town on Wikipedia. In each street and probably on each corner in the town one can find various plates with the QR codes, which provide relevant information on the Wikipedia page. The town has installed up to 1,000 codes and the information is available in several languages. Together with the code preparation the installation of a freely available internet connection throughout the whole of the town was commenced allowing the local residents as well as tourists to download the information free of charge. So far the project has meant for the town 550 new articles in 29 languages and approx. 400,000 pages displayed in a year. [13]

3 Broumov Region and Modern Technologies in Tourism

The Broumov Microregion is located in the territory of the Hradec Králové Region bordering in the north with the Javoří Mountains, which at the same time demarcate the Czech Republic border, in the south there are the Broumov Rocks and in the west the Adršpašsko-teplické Rocks. In view of the development phase in which it currently finds itself, it is a locality suitable for the further advancement of modern technologies in the tourism sector, but also a place where a number of projects are already functioning, contributing to the overall development in the area. All the above mentioned possibilities of the utilisation of modern technologies have been put into practice in the region, but at different degrees and not always suitably applied.

The current expansion of the foursquare application is concentrated particularly in towns, where check-ins relating to interesting places, as well as restaurant and accommodation facilities along with some shops have been set up. As far as the expansion of the application in villages and interesting sites (mainly churches) located in them are concerned, one may say that so far foursquare check-ins do not have much of an impact on tourism as such, nonetheless they at least partially influence spending by tourists at the points of tourist interest. Therefore they can contribute to making local establishments more popular, predominantly due to the zero costs of the creation of the check-in point and building a specific free of charge positive promotion, which is available to anyone anywhere.

QR codes can already be commonly found in the region. There are two trails built by the Taggmanager s. r. o. company. During the fieldwork examination of one of the two trails (Broumov Group of Churches), several drawbacks concerning the QR code application were discovered. More than a half of the stops encountered a certain type of problem, whether it was the code location or its total absence. Despite all of these drawbacks, the trails recorded a high quantity of code downloading, particularly in the summer months. In this area an increased interest may be expected and therefore it is essential to solve all the drawbacks in the applications and support the further use of the technology.

In addition, the geocaching influence in the region was evaluated. While QR codes were downloaded 372 times in the summer months of 2013, geocaching stops reached the number of 571, which represents a significant difference and indicates the interest shown in the individual use of modern technologies.

In conclusion on the use of technologies in the Broumov Region one may say that the only use which can be appraised as an attraction, because in itself it will bring more tourists to the region, is geocaching, which is substantiated also by the higher numbers of people visiting caches than those downloading the QR codes. In view of the geographic positioning foursquare is very scarce in Broumovský Výběžek (*Broumov Spur*), because so far it is operated in the CR mainly in towns, which can be detected also in this locality when the town of Broumov itself has already recorded the setting up of some check-in points, while in surrounding villages they either do not exist at all or in most cases there is only one. For the time being the use of modern technologies may be summed up as a supplement to the existing services of the region and a certain form of promotion of specific sites.

4 Results of Questionnaire Surveys

The reason for choosing the questionnaire survey was mainly to determine the interest in and knowledge about individual technologies and preferences of various users. With this in mind two questionnaires were prepared, with one concentrating on the geocaching community, and the other on the general public, aiming at the younger generation.

The survey among the selected population group has shown that the knowledge of QR codes and geocaching is at a very high level, particularly in the category of under 25 year olds, and these must be counted on also in the future, and not only in the lowest age categories because in time modern technologies will also spread among higher age categories of the population. The survey has also exposed several problems, such as the necessity of being connected to the internet and possessing devices suitable for downloading the QR codes, which can be partially dealt with by reading the code off-line and subsequently downloading the information after returning home, however then the significance of the QR codes as the current on-site information is lost. On the other hand for geocaching it is possible to use more types of devices and it is not necessary to have internet access, which so far represents an advantage of this form of entertainment.

The survey among participants has manifested that a mere placement of several, particularly traditional caches, constitutes a reason for visiting the locality, which brings a great potential for using geocaching, as a certain type of attraction in the region, or mainly as a supplement to the existing points of interest and their popularisation. In view of the fact that 56% of the respondents use accommodation and dining facilities, geocachers are not merely transit tourists, but they have an influence on the development of the region also from the point of economic benefits. Even with the average visitor figures based on visits to individual villages and towns for geocaching reasons, which stand at 53%, it is apparent that as far as geocachers are concerned, a place is often visited only for the reason of a cache hunt, which represents a great attraction for this type of traveller. [5,6,7]

5 New Attraction in the Area and its Impact on the Region

Proceeding from the questionnaire results, the region is advised to concentrate on a new attraction, utilising geocaching as one of the most popular forms of modern technology use. Any economic calculations and the determination of the impacts of internal tourism on the region are extremely complicated. Specific figures relating to tourism can be obtained particularly from the tourist trade satellite account, nonetheless with respect to regional statistics, this account divides the data only in some cases and no lower than the level of administrative regions in the CR. A significant component for the calculation of the influence of any forms of tourism is the average value of one tourist, i.e. what he will spend in the region. Certain estimated values are displayed in Table 2, partially acquired from the Czechtourism monitoring, which regularly holds questionnaire surveys directly in the region in search of answers to various types of questions. In order to ascertain the average expenditure of a tourist per day, it was proceeded from answers of respondents within the period of 2010–2013 and the frequency of their answers in certain price categories. A total of 1904 persons were approached and they chose one of the 5 possible price intervals. Based on the intervals, the mean interval value was determined and subsequently used for the calculation of the expenditure of an exact number of persons, which amounted to the total of CZK 1,180,385.00 [6]

Tab. 2 Czechtourism Monitoring – Average Expenditure per Person per Day in the Region

Category	Percentage of respondents	Mean value amount (in CZK)	Re-calculated number of persons	Estimated total expenditure
Up to CZK 200	5.8 %	100	110	11043
CZK 201 to 500	39.4 %	350	750	262562
CZK 501 to 1000	46.7 %	750	889	666876
CZK 1 to 2 thou.	7.4 %	1500	141	211344
More than CZK 2 thou.	0.6 %	2500	11	28560
Total	99.9 %	-	1902	1180385

Source: Adapted according to Ipsos - CzechTourism

From the data counted in Table 2, dividing the total expenditure in the region by the total number of visitors (respondents), it is possible to calculate the average expenditure of one visitor per day, which comes to CZK 621.

A proposal of new tourist attractions lies in the placement of a series of caches along the overall route length of 54 km, comprising mainly of traditional caches of a smaller size and special mystery caches as landmarks along the route. In view of the longer stretch of the series, at least a two-day stay in the region may be expected, resulting in the use of both the accommodation and dining facilities. The questionnaire has shown an increased interest in a locality in the case of the placement of at least 10 caches without an affect on the FP points. Thanks to the higher impact of the series, it is possible to set up a series of caches along the whole Broumovský Výběžek, with the following circuits and parameters as demonstrated in Table 3. The terrain is assessed on a scale from 1 to 5, where 5 indicates the most demanding terrain, which cannot be negotiated without technical equipment. [6]

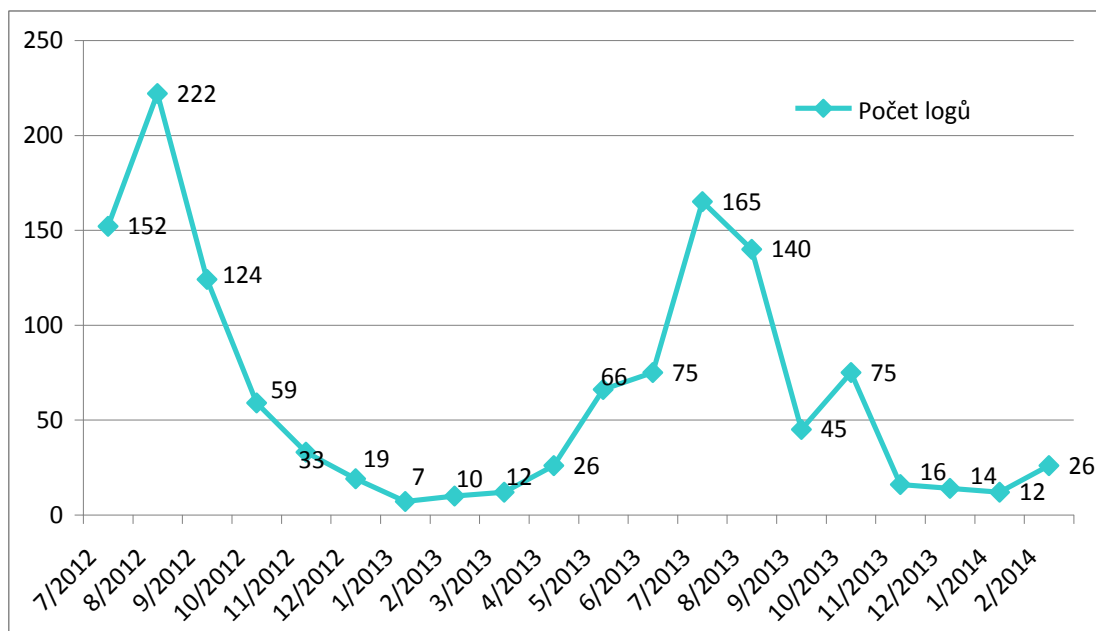
Tab. 3 Geocaching Series Circuits

Circuits	Length	Terrain	Number of caches
1	26 km	3	19
2	19 km	2	12
3	26 km	3	18

Source: Own processing

Each of the circuits starts and finishes in Broumov. Each circuit would have its own specifics, as far as the suitability for children, cyclists and other categories are concerned. In view of there being three circuits, a connecting link also would be set up, making use of special boxes containing indications for the last “bonus cache”, which would be of the largest size and positioned at an interesting place in Broumov. Here I would recommend for example free admission (based on the acquired code) to one of the sites, where a logbook also could be placed on a special spot. In total the series would contain 50 caches particularly of a traditional type, but also mystery caches and one bonus mystery cache. The simplest hiding places for the boxes could be located in trees, on signs or in the wood inside tree stumps.

The estimated average number of arrivals for the series can be deduced from a similar series titled PJH (Pod Jestřebími Horami – Under Jestřebí Mountains), which was published on July 14, 2012 and by April 19, 2014 it was visited on average by 1348 persons. Graph 1 below shows the number of persons by month in individual years.

**Graph 1 Development of Log-in Quantity for the PJH Series from the Publication until February 2014**

Source: Prepared on the basis of geocaching.com

In the first 12 months the series was visited by 818 nicknames. To simplify matters, let us consider 1 nickname as one person, but frequently one nickname represents a couple or even a whole family. It can be expected that the creation of the series in Broumovský Výběžek will bring a similar number of people into the locality. Average expenditure subject of one tourist in the area comes to CZK 621 per day. The series has been conceived in a way to inspire tourists to

stay overnight or soon return to the locality. That means we can count on approximately 2 days stay per each person. Upon the multiplication the total sum amounts to CZK 1,015,956.00 per year of the series life. One needs to point out that the calculations are purely theoretical and also that the whole sum does not stay in the region, because a part of the income of accommodation, dining and other facilities is paid in taxes and fees and is included in the state budget.

Proceeding from the questionnaire survey one may further calculate possible expenditure in a situation, where it concerns only one-day visitors. Here the value of 57% of respondents, who make use of dining and accommodation facilities in the area, will be applied, arriving at the figure of 466 persons, bringing the expenditure to the total of CZK 289,347.00. The influence of one-day tourists on the region is also apparent here.

For a more accurate calculation of the impact of tourists on the regional development it is possible to proceed from the current study of the advisory company – KPMG Česká republika “Benefits of Tourism”, which on the basis of various sources proposed a multiplication model for the tourist sector, and arrived at the finding that from each CZK 100 spent the sum of CZK 41 will go to the state budget, meaning that the remaining balance of CZK 59 will stay in the regions and localities. Based on this sum, it is possible to calculate a more accurate amount, which flows into the region. In the instance of the above specified total expenditure of tourists amounting to CZK 1,015,956.00, the regional budget would receive CZK 599,414.00. [5,6,7]

6 Conclusion

General characteristics show that integration of modern technologies in the tourist trade is not a mere possibility, but at present more of an obligation and necessity of all the regions, travel agencies, organisations and other entities. This is mainly due to the ever increasing demands of tourists on the provided services and the better awareness of each individual. An important aspect is also viewing modern technologies not only from the point of view of the faster arrangement of services, reservations – etc., but also as the opportunity to make tourism more interesting from the point of view of the experience of a user, who wishes to belong to a certain community. Subsequently, regions dependant on finances coming from tourism cannot do without following current trends in the travel industry. Nonetheless there are frequent occurrences of useless or ineffective investment of finances in the modern technologies, since the given technologies are sometimes applied incorrectly.

The Broumov Region has put into practice several methods of modern technology utilisation, one such being the QR code technology. Two trails were built on the principles of this technology in 2013. With the Broumov Group of Churches (one of the trails), which is located predominantly in the actual Broumovský Výběžek, a problem with QR code use has been recorded. There were faults in the actual location of the codes or their absence in the given places. The whole trail possesses a large potential for increasing the interest in this technology, whether from the point of view of learning information in a way which is attractive to the younger generation or a smaller intervention in the environment thanks to the QR code plates. Nevertheless, the growth in interest can be envisaged only provided that the drawbacks that occur on this trail are corrected.

Apart from the QR codes, it is also possible to find the foursquare application in the region, which though for the time being is a mere supplementary service in the tourist sector. Following the questionnaire results, the principal area in the region should be the development of geocaching, which generates the greatest degree of awareness and has its own technologies at its disposal.

In conclusion, it is necessary to state that for the time being it is vital to perceive the modern forms of tourism such as geocaching, QR trails and the foursquare only as a suitable supplement of awareness about the tourist location and as a certain method of positive and low-cost promotion of the region.

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