NATIONAL PARKS' WEB-BASED COMMUNICATION WITH VISITORS. EVIDENCE FROM PIATRA CRAIULUI NATIONAL PARK IN ROMANIA AND PAKLENICA NATIONAL PARK IN CROATIA

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Abstract: *Due to the advance of modern information and communication technologies (ICT), communication processes are strongly linked to the use of Web 2.0 tools. This offers unique and innovative opportunities for information and communication work for protected areas. Considering this trend, the aim of the present article is to analyze and compare the web-based communication of two national parks: Piatra Craiului National Park (PCNP) in Romania and Paklenica National Park (PNP) in Croatia. Based on previous studies, 36 variables were used for the evaluation of the two national parks' websites, grouped in five categories: 1) Tourism details and travel aids; 2) Visual, textual information and presentation style; 3) Navigation and interactivity; 4) Advertising; 5) Social media. Findings can be helpful for the managers of the two national parks in order to optimize their websites and improve their effectiveness.*

Key words: national parks, information and communication technologies, webpage.

1. Introduction

In the Protected Area Management Categories adopted by the World Conservation Union, a national park (category II) is defined as a "protected area managed mainly for ecosystem protection and recreation" [6]. Since the first national parks were designated, they have been given a double role both as the destinations of nature conservation and recreation and tourism [26], [2], [32], [34]. A key issue in the sustainable management of tourist activities in national parks is the efficient communication with visitors. They need to be well informed about the national parks they are visiting, from management policies to the recreation experience. As a result, visitors may be more likely to support protected area policy [10].

The possibilities offered by modern ICT are very interesting for national parks. This is particularly true for the manifold information and communication activities playing a key

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role in large protected area management objectives in terms of recreational use and tourism, environmental education, visitor information, and public relations [17]. The relevance of modern ICT used for protected areas is underlined by research revealing the steady increase of Internet usage and growing demand for digital information directed towards their web sites on behalf of their visitors [11], [16].

The Internet has been confirmed as a major travel planning and marketing tool but it is currently under-utilised for profiling natural and cultural heritage places for travellers [37].

Among wealthier societies at any rate, many people are now getting access to a huge volume of information on protected areas and travel options through the Internet and other communication technologies [10]. The Internet leads to increased demand for trips to a wider variety of locations, and enables park agencies to provide current, sophisticated information directly to visitors, at very low cost. Since images on the Internet can create expectations about a particular protected area, protected area managers and tourism operators need to be aware of what is being communicated, and to be ready to meet the expectations that have been raised [10].

2. Literature review

Due to the advance of modern information and communication technologies (ICT), the way people communicate, exchange and share information, changed remarkably in recent years. Currently, communication processes are strongly linked to the use of Web 2.0 tools and this offers unique and innovative opportunities for information and communication work for protected areas.

Whether the rationale for a national park's designation was principally for aesthetic purposes, conservation, recreation or tourism [13], they have become popular tourist attractions. Thus, national parks' managers need to consider the fact that the Internet has radically transformed the tourism and travel industry. Even since almost ten years ago, among Internet users, 95% have searched the World Wide Web (WWW) to gather travel-related information and 93% have visited a destination website; of the latter group, roughly half have used e- mail to gather information about a destination [22]. The increasing popularity of online commercial transactions has spurred destination marketing organizations (DMOs) to adopt the www as their primary marketing channel [21]. The increase in website visitation most likely did lead to an increase in destination visitation [7].

Certain researchers [17] consider that protected areas are still not tapping the full potential of modern ICT use. In order to increasingly benefit from it, a lot of intense work is still necessary. This refers to the design of modern ICT applications being more user and task-oriented as well as improving the outlook and interaction capabilities of web sites, i.e. applications' usability and accessibility. Furthermore, to effectively and efficiently use and integrate modern ICT for protected area work, specific (didactical) concepts should be considered. Approaches can be adapted from different fields such as e-learning and learning with geo-information [17].

Certain insights on the potential use and sourcing of information prior to visitation at a national park or protected area [38] highlight some interesting points of note for national park and protected area managers. The authors found that 22.5% of people they interviewed did not obtain information prior to their visit. 24.2% used word-of-mouth sources to make destination choices, whilst 22.5% use tourist visitor hubs as their source of information. The reported use of parks internet sites was somewhat lower than might be expected at 12.1%. The result for use of internet as an information source has

implications for national park and protected area managers who have highlighted it as their most effective visitor communication tool. The results suggest that an opportunity exists to raise the awareness of national park and protected area websites as a central source of information and ensure that visitors who might otherwise 'just turn up', have access [33].

The importance of the website as the hub of an organisation's marketing and communication cannot be overstated. More than simply a static content provision tool, the website now plays a significant role in building and enhancing visitor relationships with the organisation [33]. The websites are the main interface between a destination and potential tourists, WWW users believe such websites represent destinations, and it allow visitors to evaluate the products, services, and experiences offered by a destination [19]. The website can determine potential consumers to access the information it is providing and finally lead to a purchasing behaviour [27].

National park managers need to adhere to a few simple rules to ensure their website works well for them and their potential visitors. Importantly, making sure that the site is easy to navigate by conducting trials with visitors to assess navigability; balancing text and images to ensure that the site loads quickly and is not slow to function. Again, trial on a range of computers with limited graphics capability is useful and not to over-using 'plug-ins' such as movie players and Flash graphics. Finally, making sure that content is refreshed regularly and that new park experiences are also highlighted, as consumers often 'window shop' and are attracted to new content. Email and other direct mail approaches to communication are also powerful for targeting visitors and potential visitors [33].

Segmentation has been acknowledged as an important topic in website development and website design [29]. It is crucial, first in marketing the website to the right people in the right channels and second in designing and developing the website to serve the users as efficiently as possible, creating ways for marketers to customize their offerings [15].

There are several factors for the evaluation of a website's effectiveness, such as the quantity of information provided, the design, the structure and the possibility for interaction with the customer. Websites can be evaluated in terms of some key factors such as the quantity and quality of information, the ability of the web page for being inspirational and reciprocal as well as the correspondence between what clients want and what these websites offer in their homepages [3]. Visitors who believe a website is of high quality and usability 'will more likely have high trusting beliefs about the vendor's competence, integrity and benevolence, and will develop a willingness to depend on the vendor [25]. Certain researchers [18] consider different hypothesis when measuring the effectiveness of a destination Web site, for example, in terms of the quantity of information, usability, credibility, inspiration, and reciprocity with consumers. Another aspect that should be considered is the information architecture, the way information is organized, structured and labelled in order to facilitate its retrieving [36].

Auditing the Maine, Massachusetts and New York's websites, certain researchers [8] listed six drivers that produce High User Satisfaction: tourist details, appearance and usability, deals and promotions, segment marketing, foreign focus and social media [8].

Ease of use for the destination websites is one of the most important feature as Park and Gretzel [8] established that 60% of papers studied referring to destination website effectiveness dealt with this attribute. According to these authors, other success factors needed for assessing destinations are the followings: information

quality, response capacity, security, visual appearance, trust, interactivity, customization and satisfaction.

In their analysis of official Chinese destination websites, Li and Wang [23] focus on five areas: information, communication, transaction, relationship and technical quality based on forty-eight sub-features defined by using a five-point Likert scale. Luna-Nevarez and Hyman [24] used twenty-six variables grouped into six categories: primary focus, visual and presentational style, navigation and interactivity, textual information, advertising and social means/assistance for travel.

Fernández-Cavia *et al.* [12] used twelve parameters with many indicators for each of them: home page (13 indicators), content amount and quality (15), information architecture (10), usability and accesibility (17), web positioning (8), marketing (7), languages (6), branding (12), discourse analysis (8), interactivity (9), social web (13), mobile communication (5).

3. Piatra Craiului National Park

Piatra Craiului National Park (PCNP) was established in 1990 in Piatra Craiului massif, which is one of the most well-known and appreciated mountains in Romania, as well as the longest and highest limestone ridge in Romania (over 20 km long and 2538 meters high). The massif is covered, from the bottom towards the ridge, by hay fields, forests, bare rocks and alpine meadows and it holds a significant population of large carnivores. Its management objectives are ranging from biodiversity conservation to tourism development and conservation of local tradition [31]. The area is considered as having a very high but untapped touristic potential [30].

Situated at only 30 km from the main city of the County - Braşov, it benefits from the proximity to this well-known tourism destination. Day trips or longer journeys are available from Braşov for tourists interested in climbing, wildlife watching or just a breath of fresh air in the idyllic villages included in the park [5].

The traditional villages of Magura, Pestera, Ciocanu, Sirnea, make for interesting starting points for the routes on the eastern slope and for getting in touch with the traditional Romanian way of life. The traditional activities have been practiced for centuries and are still vivid in most parts of PCNP, such as: livestock breeding, sheep products processing, wood harvesting and, more recently, tourism. PCNP is home to significant populations of bears, wolves and lynxes.

The main tourist attractions in PCNP are:

•   the outstanding rich flora, including the specie Dianthus callizonus – an endemic flower,

•   the wild fauna including the chamois and the large carnivores - the symbol of unaltered nature - which have disappeared from most of European countries,

•   the traditional lifestyle in the areas neighbouring the massif, especially in the villages included in the perimeter of the park - Magura and Pestera.

Tourists can choose among the 31 hiking trails of medium and high level of difficulty. Climbing, mountain biking, visiting caves, nature observation, skiing and research are other recreation opportunities [9]. Tourists can find information at the visitor centre from Zarnesti, where the park administration office is located, and on the information boards placed at the entrances of the parks and on the hiking trails. Tourists can access the park with no fee, except for camping and guided tours.

There are diverse accommodation opportunities in the villages included in the park (Pestera and Magura), in the villages neighboring the park (Bran, Moeciu, Sirnea, Zarnesti, Ciocanu, Podul Dambovitei, Dambovicioara and Satic). Inside the park

limits, tourists are allowed to camp in designated areas and they can also get accommodated in chalets (e.g. Curmatura, Plaiu Foii) or in high altitude mountain refuges (e.g. Ascutit, Grind) .

There is no recent statistical data on the tourist arrivals or expenditure in PCNP as the local authorities believe this is not their responsibility, but that of Brasov County Statistics Institute and local tourism stakeholders either do not have these statistics or do not wish to make it public. However, the administration of PCNP has done a survey in 2003 during the summer season. With the help of volunteers, who administrated a questionnaire to visitors entering the National Park, this survey outlined 90.000 tourist arrivals in 2003 summer season. Since 2003, no other statistics referring to the number of visitors registered in PCNP have been recorded.

Althouth it benefits from a variety of natural ressources and a good location, PCNP is yet struggling to attain a sustainable development, in order to be positioned as an eco-destination. A qualitative research conducted in 2008 [4] revealed the following unsustainable practices in Piatra Craiului National Park:

- the problem of unappropriate waste disposal in the communities included in the national park;
- negative tourist behavior;
- the lack of tourism statistics;
- little support for the local communities from the local authorities;
- the presence of buildings that do not respect the local architecture;
- little understanding of the sustainable tourism concept by the local community members;
- infrastructure problems;
- little tourism signs and tourist information;
- excessive land parcelling;
- hunting and logging;
- little funding for conservation purposes.

Piatra Craiului National Park has a great tourism potential, but, if tourism development in the park is done in a chaotic and uncontrolled manner, without taking into account the existent values, there is danger that these values will be permanently altered [5].

Candrea and Bouriaud [4] suggested that the best way to encourage sustainable tourism development in Piatra Craiului National Park is to promote the effective partnership between local authorities, the park's administration, tour operators, guides, guesthouse owners and local communities. This partnership could be initiated by a local NGO which could have the ability to proceed to fund-rising. Such a partnership would assure an identity and a better organization of this tourism destination and could lobby both at regional and national level in the interest of nature conservation and tourism development in the area.

4. Paklenica National Park in Croatia

Paklenica National Park (PNP) was founded in 1949 and, along with the National Park of Plitvice, it is the oldest park in Croatia. It is located in the southern part of the largest Croatian mountain of Dinaric system, Velebit, which is 145 km long, and which was entirely proclaimed a natural park. PNP has the surface of 95 km² and is located at an altitude between 30 to 1757 m (Vaganskivrh). The geomorphologic uniqueness of the park is mainly given by the canyons of Velika and Mala Paklenica. The canyon of VelikaPaklenica is 14 km long, and in some parts the rocks reach a height of 700 m. Mala Paklenica canyon is slightly shorter (12 km), less accessible and therefore records a smaller number of visitors.

Beech and black pine forests are the most prevalent within the park. The name of Paklenica comes from the word paklina, and stands for the black pine resin, which was

used for the coating of ships and for illuminating. The curiosity of the park is 67 endemic plant species, which makes a huge percentage of 6.7% of the total flora. Among the representatives of fauna, butterflies are especially important: Southern Festoon (Zerynthiapolyxena) and Mountain Apollo (Parnassiusapollo). The park is also inhabited by 225 species of birds, of which the most interesting are golden eagle (Aquila chrysaetos), peregrine falcon (Falco peregrinus) and short-toed snake eagle (Circaetusgallicus). The representatives of mammalsare the most interesting to visitors: brown bear (Ursusarctos), Eurasian lynx (Lynx lynx) and chamois (Rupicaprarupicapra).

From the point of view of cultural heritage in the park, we need to mention the watermills in VelikaPaklenica, mirila, dry stone walls and ruins of the old lodges. Nowadays, the Park is no populated and there are only two permanent residents in the village of Ramići. Traditional activities of the inhabitants of the park were forestry, cattle breeding and agriculture, but with the development of tourism on the coast, the population leaves the villages in the Park and moves to the coast abandoning the traditional activities. Many of today's residents of Starigrad and Seline are landowners of the estates in Park. In VelikaPaklenica canyon, along the creek, seven watermills were built in the 19th century and they were in function until the 1960s. The creek was also used to transport the trees after lumbering. The particularity of this region in home construction during 20th century was concrete barrel-like roofs, or so called „krovovinakubu". Another particularity of the Velebit region is „mirila", built until 1960s. Mirila are the stone monuments to the departed who had to be carried to the village cemetery, and who were laid on the ground halfway so people believed that their soul remains there.

The main tourist attractions of the PNP are: the canyons, terrain suitable for hiking and rocks for climbing, rich natural and cultural heritage and its proximity to the sea. There are 150 km of hiking trails in the Park and Paklenicais the most important Croatian climbing centre with over 300 climbing routes, and one of the best known European climbing rock, 400 m high Anićakuk. Thanks to the hikers and climbers, the tourist season in the neighbouring villages Starigrad-Paklenica and Seline is extended and it lasts from March to October. In addition to several mountain huts in the Park and to the campsite which is owned by the Park, visitors can choose among several accommodation options: private rooms, apartments, campsites and hotels in Seline and Starigrad. The infrastructure within the park also includes: the forestry house, the administrative building, a campsite in Starigrad, a souvenir shop, a mountain lodge, a reception at the entrance of Velika Paklenica, bunkers and ethno-house Marasovići (traditional house with the tavern). The Public Institution of PNP has 30 employees of the planned 72, which is a relatively low number in comparison to other parks in the Republic of Croatia.

There are two entrances in the PNP. The main is located at the entrance to the Velika Paklenica canyon and the other at the entrance to the Mala Paklenica canyon and it was opened in 2007.

According to the data that we have obtained from the PNP, from a total of 114.381 visitors who the Park in 2013, 12% were foreign and 88% were domestic travellers. Among the PNP's visitors, hikers and climbers are the most numerous groups and they mostly visit the Park individually (Šikić, 2007), while only 13% of visitors come in the organized groups. Visitors' activities within the Park include: hiking, free climbing, alpinism, visits and cycling, and additional opportunities for community participation.

The entrance to the PNP is charged. Seasonal daily ticket for individual visitors is 7€, three-day climbing license cost 13€, and thus the ticket price for the PNP is one of the cheapest in the Republic of Croatia. Visitors can use the services of professional guide, which is also charged, same as the lectures in the presentation centre, intended for educational and interpretive activities. The Park has a couple of educational trails with informative bilingual panels (Croatian-English), multi-lingual brochures that will inform them about the rules of conduct and with the natural and cultural heritage of the Park.

Several largely advertised events take place in Paklenica, which also contribute to the promotion of the Park. These are: climbing competition Big Wall Speed Climbing, exhibitions like the one with the theme of mirila, Starigrad-Paklenica Film Festival, marathons, etc.

5. Methodology

Aiming to analyze the web-based communication strategies pursued by the two studied national parks, we took into consideration the models for analysis proposed by Koulioska and Andreopoulou [20], Andreopoulou *et al.* [1], Luna-Nevarez and Hyman [24], Duggan and Lang [8] and Fernandez-Cavia *et al.* [12]. We proposed a 36-variables model for the evaluation of national parks'websites, using 25 variables from the models of Koulioska and Andreopoulou [20] and Andreopoulou *et al.* [1] and 5 variables from Luna-Nevarez and Hyman's [24] model. At least 10 variables are common in the above mentioned models, even if they are not named identically. We have included other 6 variables in our model from the work of Duggan and Lang [8] and Fernandez-Cavia *et al.* [12]. Based on the categories proposed by Luna-Nevarez and Hyman [24], Duggan and Lang [8], the 36 variables included in our model were grouped in five categories: 1) Tourism details and travel aids; 2) Visual, textual information and presentation style; 3) Navigation and interactivity; 4) Advertising; 5) Social media. Because we have only analyzed two national parks' websites, the category description of the variables was used for a qualitative description of the variable and we did not attribute values to the variables as in models for quantitative analysis which analyzed numerous websites. Most of the websites' analysis was related to their homepages as these are important for them to users' attention, attitudes, and intentions. Certain researchers suggest that designing a home page around numerous working links may guide navigation, but avoids overwhelming the homepage with links or graphics that will cause the page to increase in length [14].

As only one of the national parks analysed in this paper is active on social media, we have not performed a deep analysis on this subject. However, the social media is a part of any comprehensive tourism marketing strategy [39].

6. Data analysis

Based on the different models proposed by the afore mentioned researchers, we have proposed a model for the evaluation of national parks' websites, including the following 36 variables grouped in five categories:

(1) *Tourism details and travel aids*, which includes the following variables: information about the products, the services, the activities, contact information, local information, digital map, live web camera, weather forecast, additional topics with information on different categories, calendar applications, newsletter, Rss;

(2) *Visual, textual information and presentation style*, including the following variables: audio-visual material, downloadable files, homepage size, page layout, number of images, animated images, page intro;

(3) *Navigation and interactivity*, which includes the following variables: more than one language, search engine, updated organization information, online survey, online communication form, website visitor tracker, frequently asked questions (faq), links to others organizations, code access;

(4) *Advertising*, which includes the following variables: third person advertisment, segment marketing, information & accomodation booking systems, tickets purchasing, other near the site attractions;

(5) *Social media* including the following variables: social media sharing, social media profile and forum.

Table 1 (see Annex) summarizes the analysis of these 36 characteristics in the case of PCNP and PNP's websites.

Regarding the information about products, services and different activities, both websites offer a lot of information, however PNP's website is more focused on tourists. Contact information section is present in both sites and somewhat it is hard to find it in the first stage of the navigation. Digital maps and local information are provided by both analyzed websites. There is no „live camera" option for tourists who want a direct access to location in the trip planning phase than using only „weather forecast" section (present only on PNP's website). None of the two websites have „calendar application", „newsletter" or „RSS", characteristics of the websites that could offer more details for tourists interested in extra-information.

The seven variables that we used for comparing visual, textual information and presentation style for www.pcrai.ro and www.paklenica.hr conducted us to the conclusion that PNP's website performes better at this category.

Navigation and interactivity are defined in our model by the 10 variables that are all also part of the analysis model proposed by Koulioska and Andreopoulou [20], Andreopoulou *et al.* [1]. The sitemap of

PCNP is helpful for a better navigation, but the return to homepage is very difficult. The links are more helpful and organized for PNP's website, but PCNP's website offers more useful links for accomodation.

Regarding the five variables that defined the „advertising" content of the analyzed websites, none of them offer information about tourist attractions that are not included in their perimeter, but could support the decision to select one of these national parks as destinations included into a more complete tour. Regarding the „segment marketing" variable, defined by Duggan and Lang [8] as the driver that „ targets many common and unique segments of the population with messaging, imagery, and content that speaks to their individual needs from a tourist site", PNP website has two distinct sections which provide information for visitors interested in mountaneering and climbing. Only PNP has taken into consideration the opportunities offered by the new context of the Social Media, and even if the website was not actualized in the last 45 days, the Croat National Park is very active on Facebook and Youtube. Although there are many Facebook pages related to Piatra Craiului mountains, it seems that none of them are related to the national park.

7. Conclusions

The likely importance of national parks' websites as hubs of the organisations' marketing and communication cannot be overstated. The website should play a significant role in building and enhancing visitor relationships with national parks [33].

The results of our analysis could be usefull for the improvement of web-based communication for both Piatra Craiului National Park and Paklenica National Park.

Findings can be helpful for their managers while planning activities and implementing innovative technological changes, such as the functional and effective websites, but

also for their web designers aiming to optimize the websites that promote these two protected areas and to generally improve their effectiveness.

PCNP and PNP's managers need to determine how well their websites work, making sure that the site is easy to navigate, essential experiential information is easy to find and interpret or employed in decision-making, and ensuring that text and images load quickly. They also need to ensure that the website does not provide conflicting messages of conservation versus park usage. Key goals and outcomes need to be identified for both marketing and the use of the website to promote the visitation experience [33].

The content analysis of the two websites of the one National Park from each of the Romania and Croatia was based on the similarities between those parks, but for a deep analysis of the web-based communication in both countries a quantitative analysis of all national parks in both countries may to be considered

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Annex

A comparative analysis of PCNP and PNP's websites　　　Table 1

Variable	Piatra Craiului National Park (PCNP)	Paklenica National Park (PNP)
1. Tourism details and travel aids		
Information about the products, the services, the activities	Yes	Yes. Very detailed
Contact information	Yes; hidden in the bottom of the page	Yes; hidden in the 3rd subpage of INFO page
Local information	Yes	Yes
Digital map	Yes; in Google Map format	Detailed map in two formats
Live web camera	No	No

Weather forecast	No	Yes
Additional topics with information on different categories	No	No
Calendar applications	No	No
Newsletter	No	No
RSS	No	No
2. Visual, textual information and presentation style		
Audiovisual material	In GALLERY page	One video in home page and five videos in MULTIMEDIA section
Downloadable files	Yes: only photos and videos	Yes: map, posters, brochures
Homepage size	small	large
Page layout	unbalanced	Balanced
Number of images	many	Many
Animated images	No image slide show	Image slide show
Page intro	Yes	No
3. Navigation and interactivity		
More than one language	2 languages (Romanian, English)	3 languages (Croatian, English, German)
Search engine	Yes, but not functional	No
Sitemap	Yes	No
Updated organization information	No; the latest post in NEWS page made in 2011	Last updated 45 days ago
Online survey	No	Yes
Online communication form	In the CONTACT FORM	In the CONTACT subpage
Website visitor tracker	Only in FORUM for counting posts and views of this section	Only in (for) CONTACT page
Frequently Asked Questions (FAQ)	No	No
Links to others organizations	There are no links from the LINKS page; from the SPONSORS page there are links to these organisations (not very relevant for visitors)	Links to 15 governamental and non-governmental organizations
Code access	No	No
4. Advertising		
Third person advertisment	No	No
Segment marketing	No	Yes. There are separate sections for mountaneering and for climbing.
Information & accomodation booking systems	Yes	Yes
Tickets purchasing	Yes	Yes
Other near the site attractions	No	No
5. Social media		
Social media sharing	No	Twitter (from Contact page), Facebook and Youtube (from HomePage)
Social media profile	No	Facebook (updated almost daily); Youtube (6 videos uploaded 2 months ago and one video one year ago)
Forum	Yes	No