DESTINATION MANAGEMENT SYSTEMS IN BULGARIA: CURRENT SITUATION AND CHALLENGES

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The article aims to present the process of transformation of destination management systems (DMSs) influenced by the development of information and communication technologies and their application in tourism. The evolution of functions of DMSs and stakeholders' involvement are chronologically discussed. The current situation and the developments in Bulgaria following the legislative changes in terms of destination management, as well as good examples of contemporary technological solutions, are presented. Challenges to the future development of DMSs in Bulgaria are outlined.

Key words: tourist destination, destination management, destination management system.

INTRODUCTION

The development of information and communication technologies (ICT) has a tremendous impact on the tourism market. The digitization of all the processes and value chains in the tourism, travel, hospitality and catering industries, known as e-tourism, enables tourism organizations to maximize their efficiency and effectiveness (Buhalis, 2003) through the establishment of strategic relationships of tourism organizations with all their stakeholders. As

pointed out by Buhalis (2003), tourism organizations may "take advantage of intranets for re-organising internal processes, extranets for developing transactions with trusted partners and the internet for the interacting with all its stakeholders". That specially refers to the destination management organisations (DMOs) and their current functions, widely topical not only for researchers but also for practitioners. In tourist destinations, destination management systems (DMSs) have emerged in order to make use of the potential of e-tourism businesses, re-engineering the processes of the tourism industry, and acquiring a competitive advantage (Abdal-Fadeel, 2011). ICT lead to the transformation of marketing and business communication models of their operation, shifting from the traditional one-to-many model to a new one in computer-mediated environment (Benckendorff et al., 2014), and evolving from a simple website into a DMS. Nowadays, DMSs should not only be capable of handling both pre-trip and post arrival information requests, but they should also integrate an availability and booking service, too (Collins and Buhalis, 2003), thus enhancing both the demand and the supply side, and resulting in new interface functionalities and content development. Back in 2008, the European Commission underlines that only destinations that can take full advantage of the opportunities of DMSs will be able to capitalize on their benefits in the future (Panorama on Tourism, 2008).

The situation of DMSs development and implementation in Bulgaria is far from the recommended one. The coordinating role of DMOs is predominantly undertaken by local and national administrations, performing the main functions as defined by UNWTO (A guide..., 2007), namely destination marketing, product development and ground delivery, and creating a suitable environment for sustainable tourism development. In general, the potential of DMSs is still underutilized at all territorial levels. Furthermore, there are only a few academic studies, related to Bulgarian DMSs, aiming to outline and assess the current situation, identify the existing problems and suggesting adequate actions for improvement. Indirectly related to the discussed issue are the research papers of Anastassova (2008), Marinov et al. (2013) and Vladimirov and Mileva (2018), providing fragmented analysis of the role of DMOs' websites and/or DMSs, respectively their functionalities and content. The lack of research interest in the topic is in contrast to the huge number of international publications in that field, but corresponds to the low level of practical development and utilization of DMSs in the country.

For the public authorities the investment (including financial) in DMSs' development is a significant, yet sensitive issue. Recently the European Commission published the report on Management and Content Provision for ICT and Tourism Business Support Portal (2017), based on the feedback received from public and private stakeholders in tourism from all across the European Union, summarizing both, business and political barriers to be tackled in the future. In Bulgaria, in 2018 the "Digital Bulgaria" national vision for digitalization in tourism till 2030 was finalized. Some legislative amendments also precondition the future development of DMSs, respectively the anticipated establishment of DMOs at regional level, the establishment of the unified tourism information system and the unified tourist information centers' (TICs) network (Tourism Act, 2018). For that reason, the research of the current situation of DMSs in Bulgaria would support identifying the main problems to be addressed and avoiding ineffective and inefficient action of DMOs at national, regional and local level.

METHODOLOGY

The study object is the Internet performance of Bulgarian tourism destinations at different levels, while the study subject are the destination management systems. The main aim of the research is to reveal the existence and current state of DMSs' development in Bulgaria at national and local level. The specific tasks to be completed include:
• outlining the concept of DMSs, their evolution and functionalities;
• revealing the regulatory and strategic framework for DMSs development in Bulgaria;
• analysis of the DMSs development in the country.
The research methodology combines the use of secondary and primary information, while the applied methods include:
• Literature review aiming to explore the link between DMOs and DMSs, to define the concept of DMSs and their evolution, as well as their current functionalities.
• Review of existing legislation, regulations and strategies in order to outline the framework of DMSs development in Bulgaria, potential constraints and future developments.
• Survey of the internet performance of Bulgarian DMOs – the Ministry of Tourism and all 265 municipalities – the survey is carried out, based on pre-determined criteria regarding the functionalities of existing websites and platforms, on one hand, and the information content – on the other, as presented in Table 1. The criteria were specified on the basis of the literature review (see below), as well as of preliminary review of Bulgarian and foreign destination sites. Analyzed sites were identified through Google search, using several key words: "tourism", "tourist information", "tourist information center" (in Bulgarian), "visit", "go to" + the name of the municipality. The results obtained were reviewed up to the third page. The availability and features of destination sites were analyzed vis-a-vis several indicators representing factors that are perceived as important for the need and outcome of presentation of local tourism via Internet and potentially – for the development of DMSs:
✓ population size of municipality that may be interpreted as a proxy for its administrative, financial and expert capacity (National Statistical Institute data for 2017);
✓ accommodation bed capacity as representative for the size of the local tourism business (National Statistical Institute data for 2016);

Table 1

Survey indicators about the internet performance of local DMOs

Municipality	Population	Accommodation capacity	Attractions	Distinct DMO	Specialized tourism portal/site	Language versions	Functionalities					Type of information (content)						
							Information dissemination	Reservations	Interactive communication	Interactive mapping	Customization	Transport to and within	Accommodation	Eat and drink	Events, MICE, wedding	Attractions	Entertainment	Activities
	№	№	№	Y/N	Y/N	№	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N

✓ number of attractions declared in the Register of tourist attractions maintained by the Ministry of Tourism – as an indication for the tourism attractiveness and development potential, as perceived by local authorities; while the relevance of the number of declared attractions may be disputable as there are no specific criteria or verification process for inclusion in the register, it reflects the local authorities perceptions and the respective need to utilize and promote the existing potential;

✓ the legal form of the local DMO – in this case a simple distinction is made between DMOs functions integrated within the local administration and the availability of a distinct organization that performs these functions (municipal enterprise or limited liability company owned by the local authorities).

• Questionnaire survey among 14 selected local DMOs that include most of the leading local tourism destinations in Bulgaria with different types of tourism development. The survey is based on self-assessment of their sites or portals but the results are verified by ICT and tourism experts. The questionnaire comprises 3 groups of closed questions, related to the internet accessibility of the destination, quality of information system and performance of the destination in web 2.0 applications.

• Case study of best DMS practice – based on the recently introduced platform of Moby 2.

• In-depth interview with a DMS developer – the executive director of Moby 2 company Nick Nickoloff, held on May 16th 2018 – focused on specific technological innovation and constraints.

RESULTS AND DISCUSSION

LITERATURE REVIEW

CONCEPT DEFINITIONS

There is no common understanding of the nature of DMS. The undeniable core characteristic of DMSs is that they are usually managed by DMOs, "which may be private or public organizations, or a combination of both" (Buhalis and Spada, 2000) and can be implemented at national, regional or local level (Collins and Buhalis, 2003). DMS is a logical extension of the destination management (Aurélien and Herinandrianina, 2014) and is the central tool for the implementation of DMO's management strategy.

Based on a thorough literature review, Bedard et al. (2008) conclude that there are several conceptualizations of management systems used by destinations, reflecting a different view of the system and its functions, namely:

(1) DMS as an information system. Buhalis and Spada (2000) define the DMS as a collection of computerized information about a destination, which is interactively accessible. DMS is the ICT infrastructure of the DMO, used for the collection, the storage, the handling and the distribution of tourist information (Aurélien and Herinandrianina, 2014).

(2) DMS as a distributional channel. DMSs may be also considered as online distribution systems that are developed to manage and market the destination as a holistic entity. Their role is to connect tourists online with the local tourism businesses in a destination (Abdal-Fadeel, 2011), and that is particularly important for the small and medium tourist enterprises

in the destination. Frew and Horan (2007) also advocate that to be successful, the DMS, like any other electronic distribution channel, needs to operate as a commercial enterprise with quantifiable performance measures set in place to ensure the efficient use of the right combination of applications of web technology, and effective marketing and promotion strategies for the website.

(3) DMS as a strategic management system. Buhalis et al. (2011) specifically underline that DMSs facilitate the functions of the DMOs not only to provide information and accept reservations for local enterprises and coordinate their facilities, but also to utilize ICTs to promote their tourism policy, coordinate their operational functions, increase the expenditure of tourists and boost the multiplier effects in the local economy. Sigala (2011) highlights that DMS should serve a much wider role that first aims to support a sustainable (socio-economic and environmental) destination management and then to electronically enhance the marketing of this tourism product. The management role of DMS "should not be overlooked", as any DMO should first develop its product and then aim to market it.

(4) DMS as an inter-organizational information system (IOIS). Accepting the understanding of Chen and Sheldon (1997) of DMS as IOIS, Bedard et al. (2008) consider that it "groups tourist product and service suppliers and, on the one hand, offers consumers and intermediaries easy access to complete information (maintained, up-to-date, and relevant to the tourist destination's facilities), and, on the other hand, the ability to make a reservation". In other words, DMS can be described as the IT infrastructure of the DMO (Collins and Buhalis, 2003) and as an enabling mechanism to support a working relation between DMOs and networks of tourist information centres (TICs) (Bedard et al., 2008). Sigala (2011) also supports the idea that DMSs could be regarded as inter-organisational ICT aiming to link the geographically separated tourism supply and tourism demand.

The most widely accepted explanatory definition of DMSs is that of Frew and Horan (2007) defining DMSs as the systems that:

"Consolidate and distribute a comprehensive range of tourism products through a variety of channels and platforms, generally catering for a specific region, and supporting the activities of a destination management organization (DMO) within that region. DMSs attempt to utilize a customer centric approach in order to manage and market the destination as a holistic entity, typically providing strong destination related information, real-time reservations, and destination management tools and paying particular attention to supporting small and independent tourism suppliers" (p. 63).

Similarly Sigala (2011) concludes that DMS represent a technology platform (a mixture of software and hardware) that comprises three basic elements that are dynamically and closely interrelated and interdependent – content, processes and community. The same author outlines the main contemporary roles of DMS in the context of sustainable development approach, respectively defined in 3 main dimensions, namely:

- ✓ support and foster the economic development of the destination;
- ✓ promote the socio-cultural development of the destination;
- ✓ support the environmental destination development.

The aims of a DMS, as identified by Frew and Horan (2007), are as follows:

- • to effectively co-ordinate the marketing activities and branding of a specific destination and the comprehensive range of products it has to offer;

- to provide timely, accurate, unbiased, quality assured destination and product based information (both accommodation and non-accommodation);
- to facilitate the effective distribution and sale of a comprehensive range of tourism products from a destination;
- to present the destination as a holistic entity displaying a destination orientation rather than product orientation;
- to provide an appropriate and sustainable relationship building mechanisms with customers through effective, meaningful and continuous communication;
- to increase the satisfaction level of its suppliers, the local community and all its stakeholders through building and maintaining meaningful relationships;
- to facilitate the management of a destination by supporting DMO activities and through the provision of tools, support and training for its stakeholders.

Summarizing the existing views of experts, Collins and Buhalis (2003) identify the following benefits of a DMS' development:
- Increase of visitor traffic;
- Attracting the right market segments with the provision of an accurate and up to date comprehensive electronic database;
- Creating more efficient internal and external networks, which can have long-term positive effects on the local economy in achieving competitive advantage;
- Financial viability and profitability, which is becoming more of an important issue for DMOs as they often determine their success.

The factors, which influence the success of the DMS include funding and finance, industry links, technology expertise and availability of technology (Collins and Buhalis, 2003).

EVOLUTION

In order to fulfil their leadership role in promoting the development of tourism activities, providing some facilities and services to visitors (TICs and signage) to increase tourists' satisfaction, on one hand, and taking advantage of ICT – on the other, many DMOs started developing destination websites. According to the World Tourism Organization (2004) traditional DMO websites are often limited to the task of promoting destinations as a whole, without actively empowering a closer and more personalised relationship with potential visitors – they are limited just to the informational dimension. In the recent years some destinations began developing advanced and more dynamic destination web platforms, linking the DMO in a network with various destination suppliers and, at the same time, actively engaging with the potential tourist demand (Estêvão et al., 2014), furthermore – in managing and coordinating the tourism development process in itself. It resulted in expanding the functionalities of the platforms by such that enable the purchase of goods and services through the website. Estêvão et al. (2014) clearly determine the demarcation of websites/web-applications and DMSs – the difference is that the former ones have only a user interface for prospective tourists and do not convey user's profiles for DMOs staff or for destination-based actors.

In that context, a number of stages in that process of transformation are clearly distinguished and described by Petti and Solazzo (2007), Ndou and Petti (2007) and also discussed by Estêvão et al. (2014). The successive phases are related to DMS technological architec-

tures suitable to different stages of destination configuration and coordination, especially transactional capabilities. They could be summarized as follows:

- Autonomous – characterised by poor tourism planning, no decisional centres, fragmented supply and low levels of information systems (IS) use; DMSs are unlikely to emerge and DMO is the only possible actor managing the destination, informing suppliers by a fax or GSM message when tourists asks for a service.
- Cooperation – the supply is relatively structured, there is a limited number of *ad hoc* decisional centres and most suppliers have legacy ISs; DMO is still the only stakeholder managing the DMS and DMS is able to register service requests, availability and process transactions directly on the suppliers' IS.
- Leadership – the supply is structured, the DMO is the single decisional centre that coordinates the supply and DMSs play a major role in the coordination, promotion and distribution of the destination.
- Distributed leadership – characterised by a strong maturity of the tourism destination suppliers in terms of the accumulation of high managerial and technological capacity; suppliers have a reduced need for a DMO, tending to self-organising.

According to Sigala (2011) the current development and management of DMS requires an inter-organisational and multi-stakeholder approach, as well as socio-technical perspective. The factors from the dynamic environment of DMSs may affect any of their main components (e. g. new technologies, new collaborative processes and/or changes in destination stakeholders' profile and needs), respectively may cause tremendous implications on the challenges and future developments of DMS (Sigala, 2011).

It is very important to point out that there are two types of DMSs' business models, which are available to DMOs, namely non-revenue generating/information only or revenue generating/fully transactional DMS (Collins and Buhalis, 2003). In many destinations the applied business model depends on national regulations, which predetermine the evolution path of the transformation process and the consequent DMS's functionalities.

FUNCTIONALITIES

The functionalities outlined by different authors reflect the level of technology applied and DMS's evolution but also relate to the specific research objectives and the selected research methodology. A brief picture and correspondence of the current understanding of DMSs's interface functionalities is presented in Table 2.

In general, the current understanding is that the DMS is to act as an electronic intermediary, providing functionalities related to e-distribution, e-marketing and e-sales for the whole destination and its tourism suppliers (Sigala, 2011). The same author also advocates that DMOs can exploit the electronic platform of DMSs for empowering tourism stakeholders to actively participate in tourism development processes and for implementing e-democracy for collaborative destination management and policy making processes.

Thus, it could be generalized that the contemporary DMSs' functionalities largely correspond to the aims of DMSs as outlined by Frew and Horan (2007), and include:

- information dissemination;
- online reservation, customization and packaging;

Table 2

Functionalities of DMSs

Bedard et al. (2008)	Sigala (2011)	Benckendorff et al. (2014)	Estêvão et al. (2014)	Ciccale, M. 2013
Information functionalities: information search by text, category, region, etc.	Virtual information space	Global information dissemination	Information on attractions, information on accommodation, information on recreational activities, search functions, frequently asked questions.	Product management: information on all services and attractions Inquiry management: call centers, TICs
Reservations functionalities: allows to reserve in specific establishments	Virtual transaction space; Virtual distribution space	Mass customization and transactional support	Online reservations/ transactions – particularly reservations of accommodation and purchase of event and attraction tickets.	Availability management and online booking
Packages functionalities: package reservations, choice by region, types of packages (adventure ecotourism, casino, family, etc.), date, etc.	Virtual communication space	Integration		
Bargains functionalities: presentation and reservation possibility for monthly promotions (i.e., a discount of at least 20% on regular rates)				
Survey on tourism clientele: gathers information on the clientele (postal code, destination, etc.)			Communication/ Relationship	Visitor CRM/ Business CRM
Survey reports: allows to consult surveys				Reporting
Interactive mapping: allows to build itineraries for clients	Virtual relationship space	Interactive communication	Travel/trip planner	
		Disintermediation		

- transactional support;
- interactive communication, including interactive mapping;
- survey on tourism clientele.

- e-democracy functionality for information provision, capacity building, decision-making, implementation and monitoring.

The review of the regulatory framework includes the Tourism Act (amendments of 2015, 2016 and 2018), the TICs Ordinance (2016) and the UTIS Ordinance (2015).

The Tourism Act regulates several areas that are closely related to the potential establishment of DMSs – the establishment of organizations for the management of the tourist regions, of the National Tourism Register and the National Tourism Internet Portal, and of the tourist information centers' network. The law also defines the functions of the state and local authorities, many of which refer to marketing activities and information provision to tourists.

The Tourism Act suffers from often amendments, which sometimes substantially change the legislative environment for the operation of tourism businesses and organizations, as well as the engagements of the state and municipal public bodies, related to destination management.

According to the current Tourism Act, last amended on 4 May 2018, the organizations for the management of tourist regions (OMTR) are voluntary organizations that carry out activities related to the development of regional tourist products and regional marketing and advertising within regions with predefined borders. From the specifically determined activities, those that may be directly linked to the respective DMS's establishment and operation are: (a) organizing and supporting the activity of tourist information centers in the region, and (b) creating and maintaining a tourism database for the region as part of the Unified Tourist Information System (UTIS). Only Art. 35, paragraph 6 of the Tourism Act refers to an OMTR's website, where the convening announcements for the General Assembly meetings to be published. Taking into account the good practices of destination management and the implementation of the OMTR's marketing activities, the creation of such a portal (DMS) is absolutely necessary, but no clear obligations and responsibilities are prescribed so far.

Till 2016 (Tourism Act, 2015) UTIS was envisaged to be developed and maintained as a broad unified system for tourist information, including the National Tourism Register and tourism statistics, provided by the National Statistical Institute and in accordance with the statistical requirements of EUROSTAT and the World Tourism Organization. The organization of UTIS was laid down in detail in a special Ordinance (Ordinance on the organization of UTIS, 2015).

The comprehension of UTIS and its scope and content have substantially changed with the amendments of the Tourism Act in 2016 (Tourism Act, 2016), which are also upheld in the law of 2018. Currently, the Minister for tourism has the responsibility to organize, maintain and support the following systems that are not clearly linked to each other:
- The National Tourism Internet Portal – oriented to customers.
- The Unified Tourist Information System (UTIS) – it is considered as part of the National tourism register and aggregates information from the accommodation registers of accommodation establishment.
- The National Tourism Register – contains information about all officially registered touroperators and travel agents, the organizations for the management of tourist re-

gions and tourist associations, the certified TICs, spa, medical spa and wellness centers, categorized accommodation and catering establishments, certified tour and mountain guides and ski instructors, as well as the incorporated data from UTIS.

- The National Network of TICs – TICs are connected to a national network operating on the basis of uniform standards.

The analyzed strategic documents include the National Strategy for Sustainable Tourism Development of the Republic of Bulgaria (2014–2030) and the Digital Bulgaria – National vision for digitalisation in tourism till 2030 (2018). The updated National Strategy for Sustainable Tourism Development (2014–2030) approved at the beginning of 2018 completely ignores the possibilities of making use of ICT implementation, including digitization and online promotion, as contemporary tools for destination marketing and management. Just statements are made that there is an urgent need for redesign and updating of the official tourist portal, which should be a major tool for promoting the country. The online presentation of the country is considered as highly underestimated – the tourist portal is outdated, there is no Facebook page of the destination (at present, such a role is fulfilled by MT's institutional website), no official profile is available also in Instagram (National Strategy…, 2018, p. 87).

The situational analysis of the "Digital Bulgaria" strategic document (2018) concludes that nowadays the Ministry of Tourism uses several digital platforms for different purposes, including:

- **iLoveBulgaria** – it contains information in 13 languages about tourist sites and services by regions and interests. Mobile application helps to locate objects and services in real time/location via GPS & QR scanner. It creates positive experiences through audio/video guide and game elements, and also enables geo-targeted advertising.
- **Bulgariatravel.org** – it is the official travel website and provides tourist information by types of tourist sites and services. New modules are planned such as Cultural Calendar, Event Calendar, Weather Forecast, and more. It allows creating an individual tourist profile for storing information and enables digital advertising.

Two more digital platforms are to be developed in the near future, namely:

- **UTIS** – aiming to integrate real time data from different public and private institutions into a unified system for analytical purposes but not for advertising or direct communication with tourists. It will be developed in the form of a website or a web-based platform.
- **New platform** – vaguely described as aiming to upgrade existing digital platforms through new functionalities to allow reservations, reviews and ratings, travel planning, and more.

To summarize, based on the review of legislative and strategic documents, the following developments could be expected:

- Ongoing establishment of regional management organizations with DMO functions and respective operational tools, including DMSs development. So far, only two of the envisaged nine OMTR are established (for the regions of Varna Black Sea coast and the Rhodopes).
- Further development of the National Tourism Register and the Unified Tourist Information System (UTIS). The system would allow the collection and integration of tourism related data from different public and private institutions for analytical and evalu-

ation purposes to track the dynamics of tourism development in real time. UTIS is not established yet and the National Tourism Register is publicly available in Bulgarian on the institutional website of the Ministry of Tourism – www.tourism.government.bg.

- Development of the national TICs' network, including only certified TICs, but no clear idea of the technological operational system is in place. So far, no single TIC is certified.
- Upgrading the official tourist website www.bulgariatravel.org to provide accurate, up-to-date and detailed tourist information, improved functionalities and new modules demanded by tourists for events, weather, etc.
- Expansion of iLoveBulgaria platform by increasing the members and enriching it with new interactive content.
- Creating a new platform to unify the information from previous applications, upgrade them with new functionalities to allow for online reservations, reviews and assessments, etc. and using different channels depending on types of users.

SURVEY OF DMOS' UTILIZATION
OF INTERNET

At *national* level, the Ministry of Tourism has two websites that serve the needs of national tourism policy and marketing:

(1) An institutional (corporate) website (www.tourism.government.bg), which presents in Bulgarian and English information on the activities of the ministry, the tourism policy and marketing – regulatory documents, programs and projects in the field of tourism, strategies and plans, the National Tourism Register and other registers, basic statistics on tourism, information for tourism exhibitions and fairs, public procurement, administrative services performed by the ministry etc. Oriented to intermediaries and customers are the developed cultural and historical destinations (an interactive map of tourist routes). An interactive map of investment projects in tourism is also presented. There are no available data on the number of visits of the website, but 60% of the traffic comes through search and 31% by direct access. Only about 5% of the traffic is generated by social media (97% by Facebook and 3% by YouTube). There are no ads and mobile apps on the website (Free report on www.tourism.government.bg, April 2018).

(2) A tourist website (www.bulgariatravel.org), which is targeted at potential users of tourist services and contains information in 9 languages. The site includes general information about Bulgaria, information on tourist resources and service facilities, tourist destinations (tourist centers, resorts) etc. In the period November 2017 – April 2018 the site reported 140 000 visits. The highest is the number of visits from Bulgaria (53%), followed by France and Germany with 4% each, Israel and Spain with 3% each etc. About 84% of the traffic is through search and only 1.5% is generated by social media (Facebook – 94% and YouTube – 6%). There are no ads and mobile apps on the website (Free report on www.bulgariatravel.org, April 2018).

For the development of the tourism information system several EU funded projects have been implemented. In the period 2004–2006, under the EU PHARE financed project "Technical Assistance to the Bulgarian State Tourism Agency" (BG2003/004-937.02.02), component 3 covered the development of the national tourism information system for cat-

egorization and classification, as well as of an IT platform for tourism services database. As a result, the elements of the tourism information system, related to the National Tourism Register, have been developed. A follow-up project – "Multimedia Catalog of Tourist Sites and Electronic Marketing of Destination Bulgaria" (Regional Development Operational Programme, BG161PO001/3.3-01/2008), upgraded the websites with new functionalities and resulted also in the development of a web-based electronic catalog of tourist sites/attractions and routes, accompanied by internet advertising campaign on international websites. In addition to the multimedia catalog, Facebook, Twitter, MySpace, Svejo, and YouTube social network profiles have been created for the travel site www.bulgariatravel.org. After the end of the project, the site is maintained technically, with periodic and partial updating of information as well. Social networks are not updated regularly, with partial update of Facebook and YouTube pages.

The official travel and tourism website provides very detailed tourist and geographic information, as well as a clear categorization of the types of tourist sites and services. It allows creating of individual tourist profiles for storing information, as well as the opportunity for digital advertising.

In view of the rapid development of digital technologies, it is necessary to update completely the tourist website in structural and functional aspects, as well as to dramatically improve the activities in the social networks Facebook, Instagram and YouTube to meet users' needs and comply with the trends in the field of digital technologies. The intended new modules, such as cultural and event calendars, weather forecast etc., may be developed through the planned public procurement project "Complete renovation and maintenance of the national tourist portal, based on the Information Oriented Architecture (IOA) software model and using Information as a Service cloud-based technology".

Far more modern is the presentation of the country through the tourist interactive guide – iLoveBulgaria. The application was launched in 2016 as a joint project between the Ministry of Tourism and the private sector (Horizon Software Solutions). It provides information about tourist sights and services in Bulgaria in 13 languages. The platform is constantly developing new and interactive content, namely (Digital Bulgaria, 2018):

- There are 250 national tourist sights, which are displayed on the interactive map of the mobile application and on the official website www.ilovebulgaria.eu.
- The mobile iLoveBulgaria application to the platform, for Android and iOS operating systems, has over 17 000 installations.
- Members of the iLoveBulgaria platform are over 500 organizations.
- Information for over 5000 sites is inserted on the iLoveBulgaria platform.
- The web page has over 10 000 web visitors.
- Facebook has over 40 000 followers, over 71 000 people talking about us, posts have reached over 2 million people in 3 months.
- Instagram has over 5700 followers.
- iLoveBulgaria – Viber chatbot is an innovation, launched on April 1st 2017, which provides robot information for the "100 national tourist sites", located near the user's location.

In addition, to providing information about tourist sites and services by areas and interests, the mobile app helps to locate objects and services in real time or on the spot via GPS

and QR scanner. The latter includes a link to an audio/video guide page, and game elements are also incorporated. Currently it enables geo-targeted advertising. The main drawbacks of the application are the lack of technological innovative value and the lack of integration into Google.

At *regional* level only two Organisations for management of tourism regions were established according to the Tourism Act provisions – for the Varna Black Sea Region (30.03.2018) and for the Rhodopes Region (05.06.2017) – that are still not present on the Internet. Several regional portals and sites are developed and maintained by regional tourism associations, however the latter are not treated by the Tourism Act as regional DMOs.

At *local* level the functions of DMOs are performed by local governments. In terms of quantity local tourist destinations (municipalities) are relatively well presented on the Internet by or on behalf of local authorities (DMOs) (Table 3). Sixty-three municipalities (24%) have a distinct tourism portal or site. They however account for around 80% of the tourism volume in Bulgaria (77% of accommodation capacity, 84% of overnight stays, 83% of arrivals at accommodation facilities and 87% of revenues from accommodation). Their structure is quite diverse in terms of population size, accommodation capacity and number

Table 3

Internet presence of local tourism destinations (municipalities)

	Munici-palities	Population	Accom-modation capacity (beds)	Declared attractions	Overnight stays	Arrivals at accom-modation	Revenue from accommoda-tion (BGN)
Total	*265*	*7 050 034*	*328 264*	*3 421*	*25 185 996*	*7 196 397*	*1 229 073 306*
With a distinct tourism site	63	4 105 297	251 267	1 286	21 150 097	5 990 536	1 073 230 942
Tourism information provided on the municipality site	97	1 711 749	34 397	1 416	1 815 147	761 712	64 632 555
No tourism information provided by local authorities	105	1 232 988	42 600	719	2 220 752	444 149	91 209 809
Share, %							
With a distinct tourism site	23,8%	58,2%	76,5%	37,6%	84,0%	83,2%	87,3%
Tourism information provided on the municipality site	36,6%	24,3%	10,5%	41,4%	7,2%	10,6%	5,3%
No tourism information provided by local authorities	39,6%	17,5%	13,0%	21,0%	8,8%	6,2%	7,4%

of declared attractions. 76% of them are medium-sized and small municipalities, although the large and very small municipalities are also well presented (11 and 13%, respectively). Similarly, 59% of municipalities with a distinct site have an accommodation capacity above 500 beds, however the share of the other groups is significant (201–500 – 16%, 101–200 – 8%, < 100 – 17%). 83% of the municipalities with distinct sites have more than 5 attractions, but again the share of less attractive ones is substantial – 17%. In addition 97 municipalities (37%) provide satisfactory information on their official municipal site. They account for about 10% of the tourism volume (10–11% of accommodation capacity and arrivals, 7% of overnight stays and 5% of revenues).

While the number of municipalities that are not on the Internet is significant, their contribution to tourism is limited – 13% of accommodation capacity, 9% of overnight stays, 6% of arrivals at accommodation and 7% of revenues. Nevertheless their profile may be of interest indicating some gaps: they include significant number of medium-sized municipalities with 20 000–100 000 inhabitants (18 in number or 17%), municipalities with significant accommodation capacity – more than 2000 beds (4 resp. 4%) and 501–2000 beds (3 resp. 3%), as well as municipalities with more than 5 attractions (37 or 35%). Examples where a better "Internet performance" could be expected, include some sea resorts (Tsarevo, Sozopol, Primorsko, Byala), mountain resorts (Yakoruda), cities (Dobrich, Montana), cultural tourism destinations (Sopot, Isperih, Veliki Preslav).

It should be noted that the presentation of local destinations is not limited to the information provided by local governments. Significant tourism related information may be found on local sites owned by commercial companies, NGOs or initiative groups, some regional administrations (e. g. Ruse, Silistra, Sliven etc.), regional tourism associations or groups (e. g. for Rila, Thracian region, Western Rhodopes, Eastern Rhodopes, North-west region, etc.), national and natural parks (e. g. Central Balkan), national tourism information sites (bulgariatravel.org, ilovebulgaria.eu, nasamnatam.com, strannik.bg, start.bg, opoznai.bg, pochivka.bg, poseti.guide-buglaria.com, bgvakancia.com, www.ranica.eu, etc.) as well as the "municipalities' portal" (www.obshtinsko.info). They cover some of the destinations not promoted by local governments and also enlarge and enrich the information for municipalities that are satisfactory presented by local governments. At municipal level their existence could be explained by the need to compensate the lack of local authorities' initiative and to fill the information gap. However, this phenomenon raises at least two issues: (1) the local authorities (DMOs) do not have a control on the information provision and are not able to exploit some of the potential advantages (e. g. feedback) and (2) efforts of different actors are duplicating and the outcomes are often fragmented, incomplete and ineffective. The latter is an argument for stronger cooperation, including through partnerships at local and regional level.

The analysis of the internet presence of local destinations across different factors confirms the hypothesis that it is influenced by the population size of the municipality, the accommodation capacity, the attractiveness and the form of the DMO. Substantial differences are observed between the groups defined by the respective criteria (Fig. 1). Using Chi-square test it was proven that the differences are statistically significant for all factors related to the availability of a distinct tourism portal or site as well as to some of the factors related to the overall presentation in the Internet by or on behalf of local authorities (accommodation
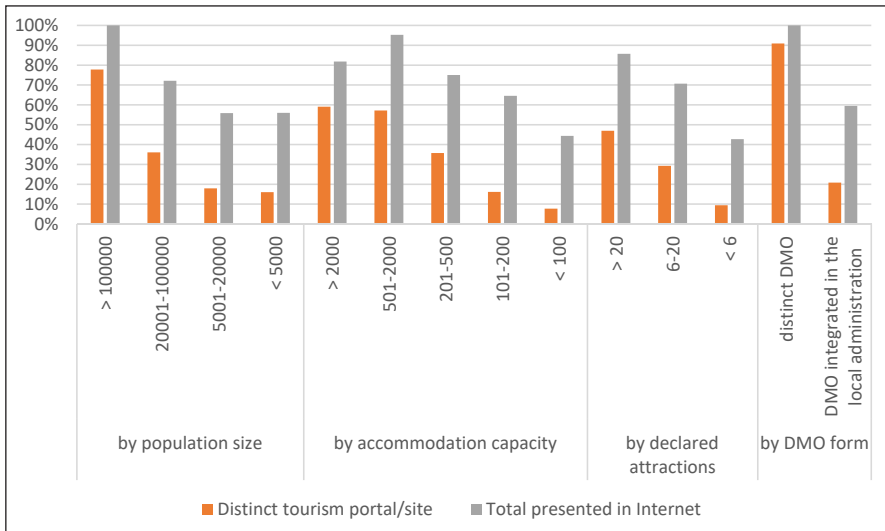
Fig. 1. Factors influencing the internet presence of local authorities

capacity and number of attractions). According to the strength of their influence the factors are ranked as follows:

- The most decisive factor seems to be the form of the DMO – 91% of municipalities with a distinct DMO (10 out of 11) have a specific tourism site or portal and 100% are assessed as relatively well presented on Internet. From the remaining municipalities where the DMO functions are integrated within the local administration only 21% have a distinct site and only 59% are perceived as well presented on the Internet.
- In terms of size large municipalities stand out. A specialized site is twice less frequent in medium-sized municipalities (36%) than in large ones (78%) and 4 times less frequent in small and very small municipalities (16–18%). While for all large municipalities the overall internet presence is assessed as relatively good, for the remaining the values vary between 56 and 72%.
- Regarding the accommodation capacity the main difference is between municipalities with more than 500 beds (distinct sites – nearly 60% and satisfactory overall presence – above 80%) and municipalities with limited tourism supply – less than 100 beds (only 8% of the latter have a distinct tourism-oriented site and the overall presence is assessed as satisfactory for only 44%). It seems that the critical threshold is 200 beds – 1/3 of the municipalities with 201–500 have a distinct site and for ¾ of them the overall presence is assed as satisfactory.
- The perceived attractiveness as reflected by the number of declared attractions is also important, however the between-groups differences are not so extreme.

While the influence of the above factors is significant it should not be perceived as decisive. Good performance, including a distinct tourism site, is demonstrated by some mu-
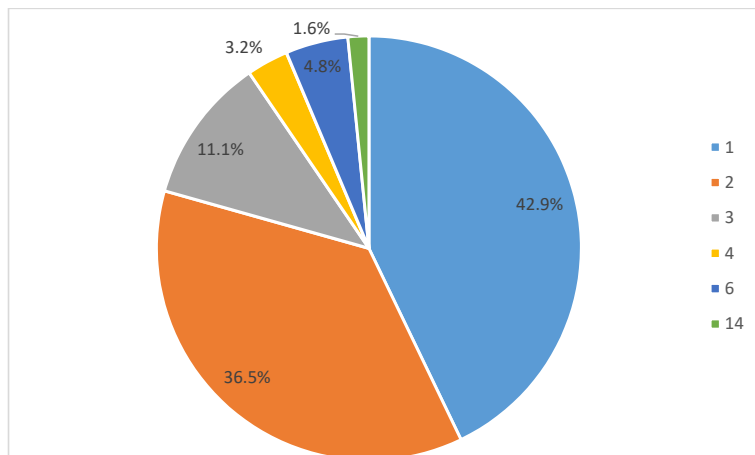
Fig. 2. Language versions of the distinct tourism portals and sites

nicipalities that are small, with relatively underdeveloped tourism supply or not very at-
tractive. As an example the municipality of Chavdar may be mentioned that has one of the
best distinct tourism portals despite its small size (1174 inh.), small tourism supply (24 beds
accounted by NSI) and small number of declared attractions (1).

The more detailed analysis of the distinct destination portals and sites reveals that more
than half of them are multilingual – 57%, but still 43% are in Bulgarian language only. Sites
in Bulgarian are found most often in very small municipalities (37% compared to 14% in
large ones) and in municipalities with very small accommodation capacity (73% for munici-
palities with less than 100 beds compared to 23% in those with more than 2000 beds). Typical
are bilingual sites (Bulgarian and English) – 37%. Nearly 20% of sites have between 3 and
6 language versions. Other more often used languages are German, Russian and French. The
specific additional languages often depend on the specific location and markets of a munici-
pality (e. g. Greek – in Sandanski, Romanian – in Kavarna). There is one extreme case with
14 versions (Haskovo), which is a good example that the number of language versions may
not be an indicator for the quality of the site, as it has been assessed as very low developed.
Several sites (not included in the above data) are using Google translator, however the quality
of translation is doubtful and at least part of the information is misleading.

The analysed destination sites are featured by limited functionality (Fig. 3). No single site
possesses all five functionalities, only 8% have four functionalities and most of the sites have
one (41%) or two (30%) functionalities. All sites (100%) are focused on information dissemi-
nation, but only 37% provide options for reservations, 35% – for interactive mapping and
24% for interactive communication. No single site provides options for customization. 98%
of sites do not use cookies to study visitor behavior, personalize information, or automate the
service provision (one of the reasons is the obsolete systems). Only one site provides pos-
sibilities for online shopping (souvenirs) with integrated payment options (Veliko Tarnovo).
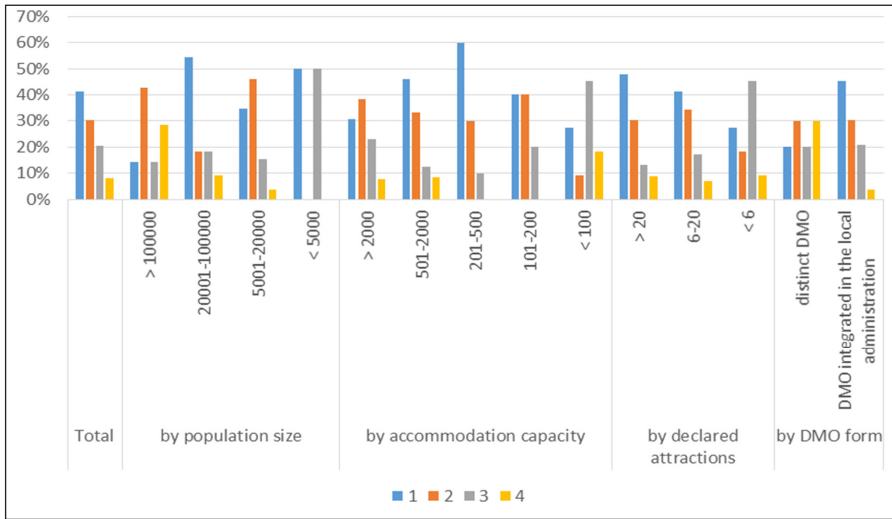
Fig. 3. Structure of analyzed portals and sites by number of functionalities

There is no clear relation between the number and the type of functionalities and their nature, on the one hand, and the size, accommodation capacity and attractiveness, on the other. Still, four functionalities are more common in sites of large municipalities (29%), as well of municipalities with a distinct DMO (30%). From the review of functionalities it becomes clear that no single local DMO has a complete functioning DMS and a very limited number of them are relatively closer to this.

The completeness of information provided at destination sites is far from perfect (Fig. 4). Only 30% of sites provide all 8 defined types of information perceived as important for customers and another 40% provide 6–7 of the types. 10% of sites have narrow information – 1–3 types, and another 20% present 4–5 types of information.

The most complete information is typical for municipalities with more than 100 000 inh. (86% have 8 types and the remaining 14% – 7 types), with a distinct DMO (50% – 8 types and 40% – 7 types), as well as with accommodation capacity above 2000 beds (46% – 8 types, 23% – 7 types and 15% – 6 types). Most incomplete sites (1–3 types only) are found more often in destinations with relatively small accommodation capacity (101–200 beds – 40%, 201–500 beds – 20%). However, municipalities with smallest accommodation capacity (<100 beds) perform much better with no single case in the group with 1–3 types and 4 cases (36%) in the group with 8 types.

According to their availability, respectively gaps, the specific types of information may be classified in four groups (Fig. 5):
- Attractions are presented in all cases.
- Options for accommodation as well as for eating and drinking may be found in around 90% of the cases.
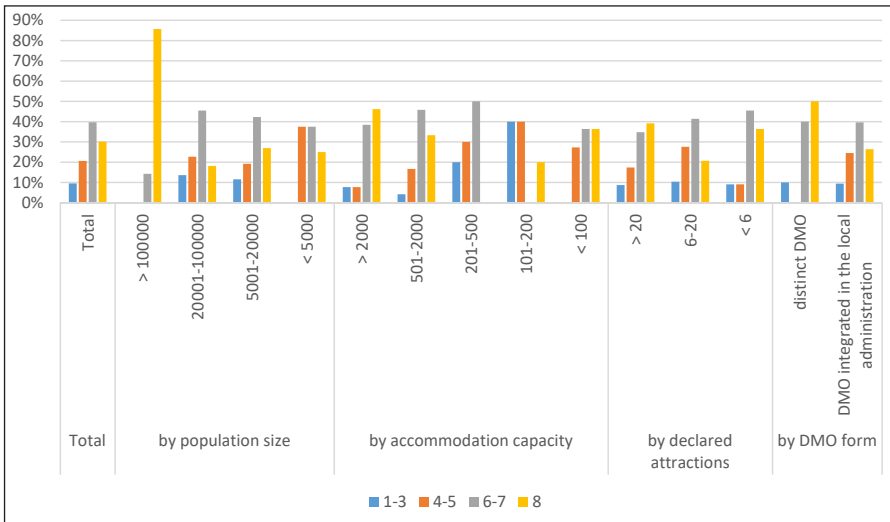
Fig. 4. Completeness of the information provided at destination sites (number of types)

Fig. 5. Types of information provided at destination sites

- Around ¾ of the sites provide information on activities, events, as well as maps.
- Most unsatisfactory is the presentation of the transport access to and within destination (60%) as well as of opportunities for entertainment and night life (55%).

Some additional features and gaps were identified:

- The tourist information provided by the official sites of the local authorities (that – as seen from the above data – may be the sole official tourist information source) is often scarce and not user oriented. In many cases they do not present tourism products and

services but rather general information (location, geographical features, landmarks), that is not of significant benefit for the customers and is often presented in an inappropriate format that does not allow direct use (e. g. Word or Acrobat documents). On the other hand, many official municipal sites provide only information on the accommodation extracted directly from the register of accommodation facilities that is also not suitable for potential clients. Finally, in some cases they contain only administrative information, like regulations, rates of local tourism tax, strategies, plans and programs etc.

- In some cases the structure of the site may look well, however many of the sections are empty. In some cases links are not active.
- Significant part of the sites are outdated and/or do not allow the use of modern technological advantages, such as navigating to the place, back-calling to the source of information, booking etc.
- Quite often the information provided is not up to date. Entire sites were found (including specific destination sites) that have not been maintained for several years. Quite often these are outputs of grant projects whose benefits are obviously not sustainable after the project expiry. Extreme case is the destination site of Malko Tarnovo (http://www.malkotarnovo.yes.bg) that has not been maintained since 2013.
- In significant number of cases the Search Engine Optimization is far from perfect – the results of keyword search do not appear at top positions and in some cases may be found only on the third or following pages.
- Most of the smaller and medium-sized municipalities do not use alternative internet channels like YouTube, Facebook, Pinterest, Instagram, Google+. Significant number of visitors' opinions on their experience with the destination can be found on some of the popular blog-platforms that typically are not reflected in any way on the official site. Generally, limited efforts are put to digest, analyze, complete and present in a user friendly form the vast volume of information about destination's features, attractions, accommodation, routes etc. available on other sites. Not exploited also is the significant number of video-clips (mostly at the free Bulgarian video sharing channel Vbox7.com).

QUESTIONNAIRE SURVEY OF LOCAL DMOS ON WEBSITES AND/OR DMSS

Within a competition organized by the Association of Bulgarian Touroperators and Travel Agents a questionnaire was sent to 18 selected DMOs of the most developed tourist destinations in the country and the return rate was 78% (14 DMOs). The respondent DMOs represent the 5 biggest town in Bulgaria – Sofia, Plovdiv, Varna (with Golden Sands resort), Burgas (Varna and Burgas are the largest towns on the Black sea coast) and Stara Zagora, one municipality with the biggest seaside resort – Nesebar (with Sunny Beach), 2 municipalities with international ski resorts – Samokov (Borovets) and Chepelare (Pamporovo), one international spa centre – Velingrad, and 5 centres of concentrated cultural attractions – Gabrovo, Elena, Lovech, Teteven and Troyan. They altogether account for 37% of the average annual population (NSI, 2017), 57% of the national bed capacity (NSI, 2016) and 65% of the registered overnights (NSI, 2016).

The web addresses of the biggest municipalities in Bulgaria comply with the international names and domain extensions in the field of tourism – visit, travel, info. Respective examples are Sofia, Plovdiv, Varna, Bourgas and Rousse. In spite of that substantial differences in the names and extensions of web addresses are identified that may hinder the users search efforts – visitsofia.bg, visitplovdiv.com, visit.varna.bg, gotoburgas.com and visitruse.info.

The Google addresses of all the surveyed DMOs' websites fall into the first, second or third page when searching for tourist information about the respective municipalities. Nevertheless, more attention should be paid to the keywords in Bulgarian and English, as well as to the process of search engine optimization (SEO) – internal and external – to ensure that the website will appear at the very beginning of the search results. Such measures are needed, because the results about the internet accessibility of the destinations show that only 14% have a Page Rank from 1 to 3, while the rest demonstrate a Page Rank between 4 and 6 (Fig. 6). The same figure illustrates that only 21% are among the first 5000 in the ALEXA[1] national list.

Page Rank of the destination

0%
7% 14%
79%

■ from 1 to 3 ■ from 4 to 6 ■ from 7 to 9 ■ no answer

ALEXA National rating list

21% 21%
7%
50%

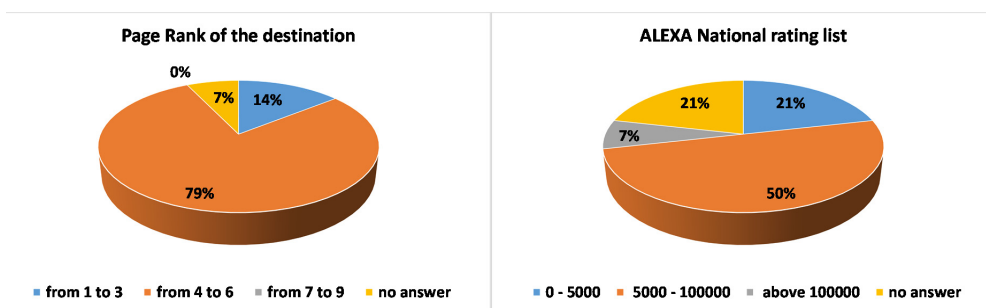■ 0 - 5000 ■ 5000 - 100000 ■ above 100000 ■ no answer

Fig. 6. Internet accessibility of the destinations

The performance in terms of information system quality (Table 4) is generally satisfactory. Nearly 2/3 of the surveyed destinations have developed a system with modern ICT tools, their websites are dynamic and optimized for work with both, desktop and mobile devices. The slow mobile uploading in some of the cases could be overcome by optimizing the page and images size. The rest contain complete and comprehensive destination information but their system has no modern tools to support modern functionalities and the websites are not optimized for mobile devices.

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[1] The Alexa Traffic Rank can be used to monitor the popularity trend of a website and to compare the popularity of different websites. A key metric published from Alexa Internet analytics is the Alexa Traffic Rank, also simply known as Alexa Rank. It is also referred to as Global Rank by Alexa Internet and is designed to be an estimate of a website's popularity. As of May 2018 Alexa Internet's tooltip for Global Rank says the rank is calculated from a combination of daily visitors and page views on a website over a 3 month period.

Table 4

Quality of the information system

Quality of ICT tools and information	Share (%)	Navigation and menus	Share (%)
Modern ICT system and tools, optimized for mobile devices or a mobile version of the site	64%	Easy navigation systems, convenient menus, describing the destination and related activities	57%
No modern tools, not optimized for mobile devices, but contains complete information	36%	Easy navigation systems, convenient menus, describing the destination, but without relevant activities	43%
An outdated system, both technologically and in terms of the information provided	0%	Difficult navigation systems, unfriendly interface, only description of the destination, without specific activities	0%

All of the DMOs' websites have introduced easy navigation systems and convenient menus (horizontal or vertical). In nearly 60% of the cases they allow describing the destination and related activities (where to stay, what to visit, where to eat etc.), while the rest 40% are not adequate in providing such information.

The results on the performance of the destinations in web 2.0 applications reveal that 100% of the DMOs are present in Facebook and 93% – in YouTube, Twitter, Pinterest and Instagram (Fig. 7). In far less cases (36%) presence of an active, up-to-date blog or visitor forum is reported. Implementation of different types of registrations, subscriptions, various
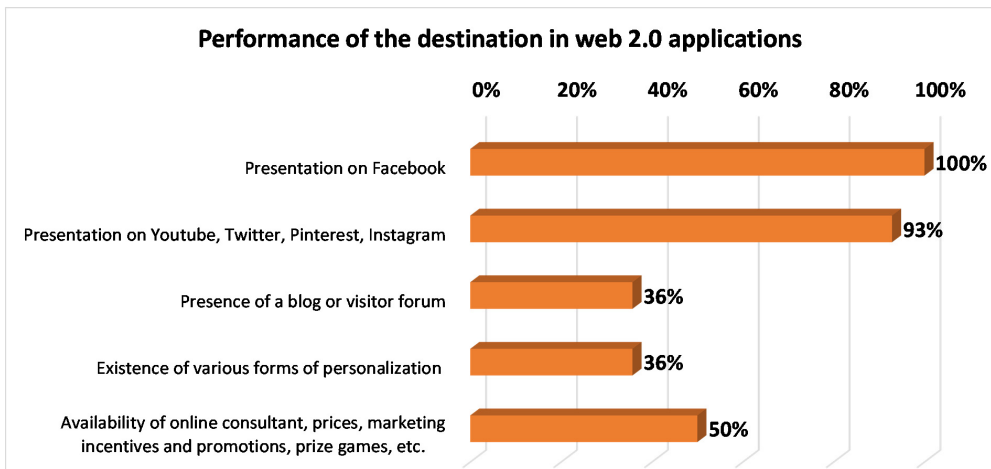

Fig. 7. Performance of the destinations in web 2.0 applications

forms of personalization of the systems is also not so popular (36%). Half of the surveyed DMOs (50%) have already introduced online consultant, prices, various marketing incentives, price promotions, prize games, contests, lotteries, e-auctions etc.

THE CASE OF ETOURIST.PRO

An interesting example of a technological platform for a typical DMS, which has yet to acquire importance, is the eTourist.pro platform (https://etourist.pro). As a technological platform of new generation it is developed by the Bulgarian company Moby 2, starting from the beginning of 2017. Unlike existing platforms that are only digital, the proposed platform allows for destination management, which is its distinctive feature.

The platform could be applied at local, regional, national and global level. The potential stakeholders of the platform are: Tourists (before, during and after the trip); Intermediaries (e. g. touroperators and travel agencies – tour routes, services and attractions, online reservations); Municipal administrations/local DMOs; Local suppliers; Regional and national DMOs.

The main advantages of the platform are:
• Translation of the information in different languages ensuring the comfortable work with the application.
• Managing of unlimited number of tourist routes in Google Maps/OpenStreetMap, Here, Mapbox, which the tourist chooses and combines depending on his own schedule.
• Managing objects on the map with accurate GPS coordinates, with photos of landmarks, hotels, restaurants and other graphics objects.
• Experiencing of cultural events live – either on the real place or online via real-time video streaming.
• Conversion of events into virtual reality with a digital library of recorded past events, allowing tourists and citizens to perceive them in the platform at any time; opportunity to experience historical events in the area more than once via building virtual reality and 360° panoramas, by linking the event with the GPS coordinates of the sight, which is a worldwide innovation.
• Instant access to video, audio, text and gallery content through QR code of each site – cultural and architectural monuments, cultural institutions, local businesses.
• Creating a smart-city version and complementing it with new options through which municipalities and cities can provide more digital services to tourists, citizens and businesses (Local e-Government) – e. g. a smart card that guarantees access to resources and allows visitor flows management (tickets).
• Developing an applications for Google Glasses.
• Developing Live Art Album application based Virtual Reality and Augmented Reality technology etc.

The platform and its applications will be financially affordable. A DMO will be able to download a free version with basic features included, the paid version will be provided through an annual subscription at an affordable price of 3 euros for the global application and 3 euros for each individual tourist destination.

The platform will provide the necessary level of autonomy and an independent approach of each institution about the presentation of their content, which will help the platform's homogeneous content generation and work. This autonomy will be provided by the establishment of teams by the institutions, which will include:

- Administrator – municipality, region and/or country. His responsibilities are to publish information about sights, update schedules of events on their territory and public transportation timetables; to adapt and create attractive tourist routes and to make the local business information visible on the platform.
- Local moderator for each entity or institution (theaters, hotels, restaurants, representatives of SMEs on the spot, branch organizations etc.) authorized as responsible for publishing quality information and content.
- National administrator – through its authority, he can create and manage national and international sights and routes.
- Personal publications and sharing by tourists within a small group – with friends, and public (in the MyMapStory feature, integrating own photos and selfies in the live post card application).

The platform was tested for the first time during the implementation of the project "The Hidden Secret of Western Balkan Mountains" ("Support for the development of regional tourist product and marketing of the destination – municipalities Varshets, Berkovitsa and Godech", contract BG161PO001/3.2-02/2011/022) and was further developed after negotiation with Varshets Municipality. Due to the restrictions of promoting private businesses through EU funding, the uploaded content initially was limited to general information and public services, however, there are no such obstacles for the newly established public-private partnership and it is possible local providers to upload information on their services upon verification by the administrator. Upcoming meetings will discuss the implementation of the platform by leading tourist municipalities in Bulgaria (Veliko Tarnovo etc.) and established organizations for management of the tourist regions (Smolyan and Varna). Currently, the Ministry of Tourism does not engage in direct participation but supports the development of the platform. Negotiations are in progress on its implementation in Venice, Dubai and other world destinations. Consideration is being given to introducing a franchise model for the use of the platform, if the number of destination organizations involved grows substantially, which will further increase its popularity.

The main difficulties in the involvement in and operation of the platform so far in Bulgaria are the lack of resources of the destination organizations at different levels to ensure the maintenance activities, as well as the lack of capacity of potential administrators to prepare and upload precise and detailed information in an attractive way. There is "a cognitive gap for managing such kind of projects".

CONCLUSIONS

DMSs existed even before the Internet era but the development of ICT led to the transformation of traditional websites into DMSs with expanded functionalities aiming to better satisfy the current and potential customers. New technologies, stakeholders and partnerships

are the driving forces for the evolution of DMSs resulting in the transformation of DMOs' operational tasks.

The development of DMSs is inextricably linked to digitization – the process of transforming information from analogue to digital by means of ICT and with the main purpose of automating a process or the whole activity. As a result, digitization itself is transformed from a tool for automated data processing into a means of attracting and retaining customers, generating revenue and creating new internet markets.

The digital transformation of the DMO's operation is a lengthy process involving both, technology and infrastructure changes, primarily for the purpose of automating internal processes, but also for the management of information assets and flows directed to/from various stakeholders and consumers. The human factor should not be underestimated in this respect – qualified staff is required for servicing and maintaining the DMS.

Although the DMS is considered to be a customer oriented system, customer's role in obtaining information and services is also in a process of transformation – from the active "searcher" role into the passive role of "receiver". From that point of view DMSs should develop in the direction to reach the customer in the right time and on the right place.

Within the global context of growing importance and proliferation of DMSs the concept remains generally unknown in Bulgaria, both in the academic research and in the practice of tourism policy and destination management. In general, the potential of DMSs is still underutilized in Bulgaria at all territorial levels. The internet presence of destinations is relatively good, as most of municipalities with significant tourism potential and level of development have distinct tourism oriented web sites/portals. However, no complete DMS (as defined in the literature) was identified neither at local nor at national level and the main efforts seem to be focused on dissemination of information only, and not on destination management. Probably that situation also reflects the readiness of stakeholders to get into partnerships (especially the tourist enterprises and customers) due to the lack and the cost of infrastructure, technical equipment, lack of skilled employees, and security and trust from potential customers. It could be concluded that DMS development in Bulgaria is somewhere between the autonomous and cooperation stage as described in the literature.

In Bulgaria so far fragmented efforts for digitization are carried out and based on the needs, reflected in the legislation and strategic documents, unification and technological upgrading is expected in the years to come to develop a DMS in compliance with the respective generally accepted concept characteristics and functionalities. However, the existing strategic and regulatory framework does not create constraints but in the same time does not provide any common vision, clear directions, obligations and stimuli for DMS development. Moreover, the reviewed recent regulations and strategies do not even mention the concept of DMS and the existing approach may be classified as piecemeal. Many actors (public administrations and other organizations) are involved in developing websites and in spreading tourist information in the Internet environment, but the lack of coordination and interaction between them results in duplicating of efforts, non-complementarity of information and information gaps, thus DMSs are incomplete and miss to fulfil their management functions.

The regional level is entirely missing nowadays but the organizations for management of the tourist regions, which are in process of establishment, will hopefully provide the platform for cooperation and partnership of the member municipality and engage in the development

of strong DMSs, making use of the available technology. The analysis at local level clearly indicates that a distinct DMO is a decisive factor for the development of a specialized tourism site/portal. Regional DMOs may be especially important for the smaller and less developed municipalities featured by weaker internet performance.

The challenges for successful DMSs' development can be seen in several directions:

- Technological development – development of appropriate IT infrastructure, specific and analytical software, as well as one for transmitting the necessary information from the DMO to users through various digital channels.
- Human factor development – all activities should be performed and maintained by trained staff, capable to make maximum use of ICT, thus effectively reaching potential customers and visitors with the right messages and services.
- Change in the internal structure and culture of organizations – digitization and the new way of working with clients require the establishment of adequate customer relations' management system.
- Enhancing industry links, interaction and partnership between stakeholders combined with a more integrated and coordinated approach to ensure efficient and effective DMS development through sharing resources and preventing duplication.
- Last but not least a challenge is to raise the awareness among key stakeholders about DMS benefits, nature, features and specific requirements.

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