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Performance of websites of Mexico's tourism destinations as a factor of competitiveness.

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RESUMEN

La economía mundial se divide en tres categorías principales: las actividades primarias (agricultura y pesca), las actividades secundarias (minería y manufacturas) y el sector terciario o de servicios. En economía, el sector terciario se ha vuelto más importante. En México, el sector terciario genera más del 45% del empleo total (INEGI, 2006) y el turismo representa uno de los pilares de la economía nacional. Para asegurar un buen funcionamiento de un sitio web, deben ser seguidos ciertos criterios. Esta investigación se centra en determinar el rendimiento de los sitios web completos en México, tendrá en cuenta las recomendaciones oficiales emitidos por la OMT, la Federación Internacional de Tecnologías de Información y Turismo (IFITT) y varias investigaciones sobre el turismo electrónico y la promoción en línea de destinos. El sitio web nacional es el mejor clasificado, seguido de Yucatán, Estado de México, Tlaxcala, Querétaro, Durango, Guanajuato, Nuevo León, Hidalgo y Tabasco.

Palabras clave: *Sitio Web, Promoción, Desempeño, Competitividad Turística.*

ABSTRACT

The economic universe is divided into three key categories: primary activities (agriculture and fishing), secondary activities (mining and manufacturing) and the tertiary or services sector. In economics, the tertiary sector has become more important. In Mexico, the tertiary sector generates over 45% of total employment (INEGI, 2006) and tourism represents a mainstay of the national economy. To ensure a good performance for a website, certain criteria should be followed. This research focuses on determining the performance of the entire websites in Mexico; this research will take into account official recommendations issued by the UNWTO, the International Federation for Information Technology and Tourism (IFITT) and several investigations on e-tourism and online promotion for destination websites. The national website is the best graded, followed by Yucatán, the State of Mexico, Tlaxcala, Querétaro, Durango, Guanajuato, Nuevo León, Hidalgo and Tabasco.

Keywords: *Web Site, Promotion, Performance, Tourism Competitiveness.*

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I. Problem statement.

Printed advertising is one of the most important and effective marketing methods for the promotion of destinations. However, in the last decade, information and communications technologies (ICTs) such as the internet have become an attractive alternative for tourism promotion (Fernandez and Mihi, 2011), several companies began to invest in tourism online promotion. Internet offers the advantage to diversify and focus your advertising to specific markets.

In recent years Destination Management Organizations (DMOs), have significantly increased their investment in website development. Marketing activities through the Internet are an important element of the DMOs operational programs at a local, regional and national level.

Along with website development, organizations and educational institutions have established organisms intended to regulate, standardize and maximize the use of technology such as the World Wide Web Consortium (W3C) and the International Federation for IT and Travel & Tourism (IFITT).

W3C standards are considered hallmarks of quality in websites. However, Mexico is not attached to W3C or does not have any proper organization or association to backup its government websites with any quality distinctive or standard.

The International Federation for IT and Travel & Tourism in coordination with UNWTO have established policies to help DMOs evaluate and benchmark the quality and performance of their online activities (UNWTO, 2011).

International corporations specialized in Internet and the flow of information in the network such as Google, Alexa or the Internet Archive have developed standards to measure performance of websites in relation to variables such as traffic, popularity, speed and size among others (Google, Alexa The Internet Archive).

DMOs in Mexico often abuse of certain features on their websites making them slower and sometimes inaccessible for certain technologies such as portable devices. While DMOs should follow certain rules for their online activities, in Mexico there is a lack of official guidelines to regulate the content of their websites. Therefore there's a risk of having a poor performance in destination websites and miss the benefits that online promotion can give.

According to the UNWTO, an evaluation of destination websites can set the tone for website improvement and better website performance making it possible for DMOs to:

- Encourage them to improve the quality of their activities and systems in the network.
- Allow a comparison of the performance of their websites with similar organizations.
- Ease cooperation between DMOs in relation to their activities on the Internet as well as encouraging them to innovate their products and services.
- Improve the understanding of the key factors influencing the effectiveness of their websites.
- Develop and implement a plan of practical services for those DMOs who wish to improve the quality and effectiveness of their online activities.

II. Research questions, objectives, hypothesis and variables.

With a better understanding of the current reality of Mexican DMOs' efforts to promote destinations online, several questions come through. This research attempts to explain the key factors to be considered when building a website to ensure a good performance and thus, a better presence in the Web. The following table shows the congruence matrix of this investigation.

TABLE 1. CONGRUENCE MATRIX					
PERFORMANCE OF WEBSITES OF MEXICO'S TOURISM DESTINATIONS AS A FACTOR OF COMPETITIVENESS					
RESEARCH QUESTIONS	OBJECTIVE	GENERAL HYPOTHESIS	VAR.	DIMENSION	INDICATOR
GENERAL QUESTION	GENERAL OBJECTIVE		Dependent		
To what degree do popularity, speed, size and feedback influence the performance of destination websites in Mexico?	Determine to what degree popularity, speed, size, and feedback influence the performance of destination websites in Mexico.	The better the level of popularity, speed, size and feedback is, the better the performance of destination websites in Mexico will be.	Performance	Level of performance	Performance scores
SPECIFIC QUESTIONS	SPECIFIC OBJECTIVES		Independent		
How does popularity influence the performance of destination websites in Mexico?	Identify to what degree popularity influences the performance of destination websites in Mexico.	The better the level of popularity is, the better the performance of destination websites in Mexico will be.	Popularity	Google Rank, inbound links, Alexa rank, No. of languages	Obtained score Number of inbound links
How does speed influence the performance of destination websites in Mexico?	Identify to what degree speed influences the performance of destination websites in Mexico.	The better the level of speed is, the better the performance of destination websites in Mexico will be.	Speed	Speed Rank	Page Speed Online
How does size influence the performance of destination websites in Mexico?	Identify to what degree size influences the performance of destination websites in Mexico.	The smaller the size of a website is, the better its performance will be.	Size	Web Optimizer	Website size in bytes
How does feedback influence the performance of destination websites in Mexico?	Identify to what degree feedback influences the performance of destination websites in Mexico.	The better the level of feedback is, the better the performance of destination websites in Mexico will be.	Feedback	E-mail feedback	Obtained score
How does age influence the performance of destination websites in Mexico?	Identify to what degree age influences the performance of destination websites in Mexico.	The older a website is, the better its performance will be.	Age	Wayback Machine	Age in days

III. Justification.

In the past five decades, Mexico has made substantial achievements in the development of its tourism industry, however, it has also came upon bottlenecks, strategic errors and, possible insufficient use of all the advantages to be offered (SECTUR, 2000).

During the last decade, the arrival of international tourists to Mexico has remained constant, around 21 million people (INEGI, 2009). This shows that, despite the generally good results of Mexican efforts, there is strong international competition affecting the behavior of visitor flux gradually changing the destination demand patterns.

The online promotion represents an effective tool for destination marketing. Nowadays it is nigh impossible for hospitality operators to ignore the Internet this century (Murphy et. al., 2007). Internet has become necessary for many users to obtain tourist information. In fact in certain sectors of the population this way of obtaining information has become an essential tool in planning and organizing trips (Fernandez and Mihi, 2011).

DMOs invest heavily in the development and continuous improvement of their websites to make them attractive and easy to use (Subrat and Chavali, 2008). Internet as a marketing tool provides significant opportunities to adopt new practices to increase demand (Sharma and Aragon, 2005). DMOs as the responsible organisms for promoting destinations online should ensure the maximum utilization of ICTs. Therefore it is imperative to know how well DMO websites are performing in order to plan marketing strategies that may help overcome the stagnation of the tourism industry in Mexico.

IV. Methodology.

Dankhe (1989) classifies the types of research in exploratory, descriptive, correlational and explanatory. Exploratory studies are performed when the objective is to examine a little-studied research problem that has not been addressed before. These studies are useful for increasing the degree of familiarity with relatively unknown phenomena, learn about the possibility of conducting a more meticulous investigation on a particular context of real life, investigating problems of human behavior that can be considered crucial to identify concepts or promising variables, set priorities for further research or suggest verifiable statements (Dankhe, 1986). They are characterized by being more flexible in their approach compared with descriptive or explanatory studies. These studies try to find as many manifestations of the phenomenon under study as possible (Hernandez Fernandez and Baptista, 1991).

This investigation is exploratory due to its very own characteristics.

- There are no previous studies that quantify the performance of tourism websites.
- It analyzes as many variables as possible to determine which variables determine a good destination website performance.
- Leaves open options or alternatives to carry out more thorough investigations on the impact of ICTs in the promotion of destinations.

Recommendations for destination website evaluation

Montero and Martin (2003) propose a guide for assessing quality of web sites based on usability of websites. This guide considers the following criteria: general information and identity, language and writing, labeling, structure and navigation, "lay-out", search, media, support, accessibility, and feedback control. While it is a useful guide for evaluating usability of a website, its generic nature makes it lack of substantial methods to quantify web content.

General aspects such as quality of the information, identity (brands, logos), ease of navigation, image inclusion, animations or video, site design and user feedback are key elements for the evaluation of a destination website (Marquez, 2006).

Nowadays the existing websites are as vast and varied as the information they contain. The methods used for assessment must retake the general recommendations for the evaluation of a portal. Chavali and Sahu (2008) suggest a methodology for evaluating destination websites. The authors argue that the effectiveness of a tourism website is based on information content, interaction and exchange functions, design, consumer-oriented promotion of products and services, ease of use, technical quality, user registration and focus promotion.

Evaluating and Improving Websites - The Destination Web Watch

The International Federation for IT and Travel & Tourism (IFITT) and the World Tourism Organization (UNWTO) established a plan to help DMOs in the evaluation and analysis of quality and performance of their online activities as well as the profitability of their investments. The plan entitled "Evaluation and optimization of Websites - The Destination Web Watch Service" assesses the following aspects:

- Accessibility and legibility
- Identity and confidence

- Personality and interactivity
- Navigation
- Ease of location and search engine optimization
- Technical performance.

This research focuses on this methodology due to the prestige of the authors. This research focuses on the quantitative indicators to assess the performance of the Mexican DMO websites. Based upon the Destination Web Watch methodology, seven variables were taken into consideration.

Assessed variables: *Popularity, Speed, Size, Feedback, Age*

Each variable was measured using diverse online features such as Google PageRank, Alexa rank, Wayback Machine, etc. Each variable and procedure to quantify it is described on Table 2.

Table 2. Research universe

State	Official URL
0 Mexico (National)	http://www.visitmexico.com/
Aguascalientes	http://www.vivaaguascalientes.com
Baja California	http://www.descubrebajacalifornia.com
Baja California Sur	http://www.turismobcs.com/
Campeche	www.campeche.travel
Chiapas	www.turismochiapas.gob.mx
Chihuahua	http://www.ah-chihuahua.com
Coahuila	http://www.secturcoahuila.gob.mx
Colima	http://www.visitacolima.com.mx
Distrito Federal	www.mexicocity.gob.mx
Durango	http://www.visitadurango.com.mx
Guanajuato	www.gtoexperience.mx
Hidalgo	http://www.hidalgo.travel
Jalisco	http://visita.jalisco.gob.mx
México	www.edomexico.gob.mx/turismo
Michoacán	www.visitmichoacan.com.mx
Morelos	http://www.morelostravel.com
Nayarit	http://www.visitnayarit.com
Nuevo León	http://www.nl.gob.mx/?P=turismo
Oaxaca	http://www.oaxaca.travel

Puebla	http://www.puebla.travel/
Querétaro	http://www.queretaro.travel
Quintana Roo	http://www.caribemexicano.gob.mx/
San Luis Potosí	http://www.visitasanluispotosi.com
Sinaloa	http://www.vivesinaloa.com
Sonora	http://www.sonoraturismo.gob.mx
Tabasco	http://sectur.tabasco.gob.mx
Tamaulipas	http://www.turismotamaulipas.com/
Tlaxcala	http://www.turismotlaxcala.com
Veracruz	www.veracruz.mx
Yucatán	http://www.yucatan.travel
Zacatecas	http://zacatecastravel.com

For this investigation 31 DMOs were selected, excluding Guerrero, the only DMO who doesn't have a promotional website. As well, the national promotional website was considered for this research.

Popularity

Nobody wants their webpage to appear last in the list of relevant pages for a search query. How popular a website is relates to the importance of that particular site. When one page links to another page, it is effectively casting a vote for the other page. The more votes that are cast for a page, the more important the page must be. Also, the importance of the page that is casting the vote determines how important the vote itself is (Craven, 2011). The popularity value was determined by the average resulting from the Google PageRank, Alexa Rank, number of incoming links and number of languages.

PageRank is a numeric value that represents how important a page is on the web. To calculate the PageRank for a page, all of its inbound links are taken into account. These are links from within the site and links from outside the site. Google ranks each site giving it numbers from 0 to 10 based on PageRank algorithm. Sites that Google determines are important are those with a higher PageRank. So a link to you from a site with a PageRank of 6 is better than a link from a site with a PageRank of 3 (Switch I.T., 2011).

Several applications such as PageRank checker (http://www.prchecker.info/) or the Google Toolbar, can be consulted to verify a website's popularity or Google's PageRank. The 32 DMO websites were verified using the PageRank checker to obtain their rank.

Languages

Each website was manually and closely analyzed to verify how many different languages each website offers. While most websites offer just one or two different languages, usually Spanish and English, some other websites have more than 5 languages and some others include an embedded Google translator which allows the information on the website to be read in 53 different languages.

Speed

Page Speed evaluates performance from the client point of view, typically measured as the page load time. This is the lapsed time between the moment a user requests a new page and the moment the page is fully rendered by the browser. The best practices cover many of the steps involved in page load time, including resolving DNS names, setting up TCP connections, transmitting HTTP requests, downloading resources, fetching resources from cache, parsing and executing scripts, and rendering objects on the page. Essentially Page Speed evaluates how well your pages either eliminate these steps altogether, parallelize them, and shorten the time they take to complete. The best practices are grouped into six categories that cover different aspects of page load optimization (Google Code, 2011)

- Optimizing caching: keeping your application's data and logic off the network altogether.
- Minimizing round-trip times: reducing the number of serial request-response cycles.
- Minimizing request overhead: reducing upload size.
- Minimizing payload size: reducing the size of responses, downloads, and cached pages.
- Optimizing browser rendering: improving the browser's layout of a page.
- Optimizing for mobile: tuning a site for the characteristics of mobile networks and mobile devices.

The Page Speed Score indicates how much faster a page could be. A high score indicates little room for improvement, while a lower score indicates more room for improvement. The Page Speed Score does not measure the time it takes for a page to load.

Again, all 32 websites were analyzed using Page Speed Online, a Google tool used to retrieve website speed scores.

Size

There is a close relationship between how fast a website loads and its size in bytes. The smaller a website is in size the faster it is expected to load. King (2008) suggests that an increased site speed, reduced download rate, and improved reliability will work synergistically with those marketing methods to optimize the total effectiveness of your site. Therefore it is desirable for a promotional website to be little in size and faster in loading speed.

Website Optimization (http://websiteoptimization.com) offers a free website performance tool and web page speed analysis. The 32 Mexican DMO websites were analyzed using this tool to get their page size in bytes for the overall website as well as size information on specific features such as html files, images, javascript coding and multimedia.

Feedback (Mystery e-mail)

While it may have been possible last century, it is nigh impossible for hospitality operators to ignore the Internet this century. Although operators seem to emphasize websites, they should also consider the most popular Internet application, email. Email provides a unique opportunity for personalized and intimate interactions with guests, thus enhancing customer relationships (Murphy et. al., 2007).

Murphy et. al. (2003) based on past organizational research and industry sector innovations, suggests new metrics for measuring Internet adoption focusing on e-mail interaction. This metrics were used to measure the relation between e-mail feedback and website performance.

A fictitious e-mail account was created for Steven, a 27 year old potential tourist living in Toronto, Canada. Steven contacted each DMO in Mexico using a Yahoo Canada e-mail @yahoo.ca. The following information was requested.

- The most representative destinations for each state
- Contact for English spoken tourism offices
- Information about English spoken activities.
- Recommendations to be considered before visiting the state (security, currency, health or any other).
- Any other useful website to be considered.

Age (Wayback Machine)

The Wayback Machine is part of the Internet Archive (www.archive.org), which amasses websites, moving images, texts, audio, and recently, educational resources. The archive contains snapshots of over 55 billion web pages—more information than in any library including the U.S. Library of Congress—even though archiving began only in 1996. The archive adds about 20 terabytes (1012 bytes) of digital content monthly.

Via the WM, users can view the original version of each site, as well as the dates and content of subsequent updates. To call up archived websites, users type the URL of the desired site into the address box on the WM homepage. The WM then returns the date of original site creation, number and date of site updates, and links to archived sites (Murphy et. al., 2007).

Using the Wayback Machine, all the DMO websites were analyzed. Some websites are relatively new and thus, the Wayback Machine throws information on how old that particular domain is. For these cases, the DMO was contacted to verify if there was a previous website and access the previous domain into the Machine to retrieve a more accurate date.

V. Results.

VI. Va. Overall results

TABLE 3. FOUND INDICATORS

DMO	Age in	Google	Alexa	Inbound	Google	Size	Langua	Feedb
Mexico	4468	7	5098	2795	51	1089	8	Yes
Aguascalient	3627	5	2263	622	30	2546	8	No
Baja	3070	5	5183	152	65	1639	2	No
Baja	516	4	2837	15	79	1297	1	No
Campeche	1565	5	5808	66	46	1014	2	No
Chiapas	3497	5	1481	154	39	2899	2	No
Chihuahua	3896	5	1187	56	65	8452	3	No
Coahuila	1967	4	3053	37	84	6389	1	No
Colima	3996	4	1980	91	44	1986	2	No
Distrito	4769	6	1862	580	68	1551	53	No
Durango	N/A	5	3608	49	79	1318	3	No
Guanajuato	1897	6	4578	31	92	7175	1	No
Hidalgo	2227	4	1830	50	88	9142	1	No
Jalisco	3966	5	2950	1497	54	2071	2	No
Mexico	1645	5	9834	603	89	3426	2	No

Michoacán	3382	5	7548	127	70	1399	1	No
Morelos	3610	5	1334	130	67	4899	1	No
Nayarit	3361	4	2986	42	49	4928	1	No
Nuevo León	2248	5	5324	999	68	8404	2	No
Oaxaca	1753	5	1030	104	35	4427	2	No
Puebla	1468	3	9081	22	50	2616	5	No
Querétaro	1774	5	7280	174	25	9073	2	Yes
Quintana	2229	4	6992	61	55	3012	2	No
San Luis	3837	5	7794	89	82	1020	2	No
Sinaloa	1967	4	3179	43	75	3066	1	No
Sonora	4138	5	1145	230	39	7218	2	No
Tabasco	3383	3	5291	427	59	3024	1	Yes
Tamaulipas	3924	4	2292	6	66	1014	1	No
Tlaxcala	337	4	2707	9	84	1096	1	Yes
Veracruz	1882	6	4476	786	55	1114	53	No
Yucatán	1540	5	1509	102	89	1164	2	Yes
Zacatecas	337	4	1363	925	62	2361	1	No

TABLE 4. BASIC STATISTICS FOR INDICATORS USED IN THIS RESEARCH

	Range	Average	Median	Mode
Website age in days	337 - 4769	2654	2248	337
Incoming links	6 – 2975	346	102	-
Alexa Rank	1363 – 3608453	1119707	741426	-
Google page rank	3 – 7	5	5	5
Number of languages	1 – 53	5	2	2
Google speed score	25 - 92	63	65	39
Size	131829 - 7218672	1351362	1017554	-

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TABLE 5. OVERALL RESULTS

	Estado	Popularity	speed	size	Mystery E-mail	Total
1	Mexico (National)	6.9	5.1	4.7	10	6.7
2	Yucatán	3.3	8.9	3.8	8.6	6.2
3	Mexico (State)	5.5	8.9	8.8	0	5.8

4	Tlaxcala	1.7	8.4	4.4	7.3	5.5
5	Querétaro	4.4	2.5	6.3	7.3	5.1
6	Durango	2.2	7.9	10.0	0	5.0
7	Guanajuato	3.7	9.2	7.2	0	5.0
8	Nuevo León	5.9	6.8	6.9	0	4.9
9	Hidalgo	3.8	8.8	5.9	0	4.6
10	Tabasco	4.3	5.9	0.6	7.7	4.6
11	Morelos	3.6	6.7	8.1	0	4.6
12	Sinaloa	1.8	7.5	9.1	0	4.6
13	Chiapas	5.0	3.9	9.4	0	4.6
14	Veracruz	8.6	5.5	4.1	0	4.6
15	Coahuila	1.8	8.4	7.5	0	4.4
16	Distrito Federal	7.8	6.8	2.8	0	4.4
17	Puebla	2.4	5	9.7	0	4.3
18	San Luis Potosí	3.6	8.2	5.0	0	4.2
19	Chihuahua	3.1	6.5	6.6	0	4.1
20	Oaxaca	3.7	3.5	8.4	0	3.9
21	Nayarit	1.9	4.9	7.8	0	3.7
22	Michoacán	4.0	7	3.1	0	3.5
23	Tamaulipas	1.7	6.6	5.6	0	3.5
24	Campeche	3.9	4.6	5.3	0	3.5
25	Baja California	4.6	6.5	2.5	0	3.4
26	Zacatecas	5.8	6.2	1.6	0	3.4
27	Jalisco	6.2	5.4	1.9	0	3.4
28	Baja California Sur	1.7	7.9	3.4	0	3.3
29	Quintana Roo	3.5	5.5	0.9	0	2.5
30	Aguascalientes	5.5	3	1.3	0	2.5
31	Colima	2.9	4.4	2.2	0	2.4
32	Sonora	4.1	3.9	0.3	0	2.1

VII. Conclusions.

A good destination website performance goes beyond subjective recommendations such as ‘attractive photos’ or ‘catchy names’. Several other factors such as programming and minding ‘heavy’ files must be considered. In order to attract international visitors, having several languages is recommended, this is not a synonym for tough work. Websites such as Distrito Federal and

Veracruz are a proof of it. With a simple Google translator gadget installed, their contents are available in 53 different languages.

No significant relation was found between the size of a website and the loading speed, several other factors such as servers, bandwidth, and internet service providers must be considered by Google to grade loading times. The fastest websites are not necessarily the smallest in size. Therefore it is recommendable for websites to also consider hosting servers and coding to ensure a better performance.

E-mail is still the most popular media online. The 5 DMOs who answered the fictitious e-mail appear in the top ten performance rates. Therefore it is strongly recommended for all destination websites to include an e-mail address in their websites. Little studies have shown that having an online contact form is better, but it is definitely helpful to do things in the least possible amount of clicks. Opening an e-mail software by clicking on a link represents a longer way than just typing the message in the same site.

Only 2 of the top ten evaluated websites fall into Rogers' early adopters category. This suggests that there's no relation between how old a website is and its performance. On the contrary, leapfrogging theory can explain why recent websites have reached their previous competitors in terms of performance.

Building a website from scratch using available features in the Web 2.0 may explain why, newer sites show better performance. Therefore hypothesis 5 is rejected.

In summary, DMOs should publish well programmed websites, allowing users to view information in different languages, stick to new Gadgets and be always opened to any form of interaction with users.

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