

2005

An Evaluation of the Performance of Hotel Web Sites Using the Managers' View About Online Information Services

Costas Zafiroopoulos

Technological Educational Institute of Serres, kz@teiser.gr

Dimitrios Paschaloudis

Technological Eductaional Institute of Serres, dpasch@teiser.gr

Follow this and additional works at: <http://aisel.aisnet.org/ecis2005>

Recommended Citation

Zafiroopoulos, Costas and Paschaloudis, Dimitrios, "An Evaluation of the Performance of Hotel Web Sites Using the Managers' View About Online Information Services" (2005). *ECIS 2005 Proceedings*. 21.

<http://aisel.aisnet.org/ecis2005/21>

This material is brought to you by the European Conference on Information Systems (ECIS) at AIS Electronic Library (AISEL). It has been accepted for inclusion in ECIS 2005 Proceedings by an authorized administrator of AIS Electronic Library (AISEL). For more information, please contact elibrary@aisnet.org.

AN EVALUATION OF THE PERFORMANCE OF HOTEL WEB SITES USING THE MANAGERS' VIEWS ABOUT ONLINE INFORMATION SERVICES

Zafiropoulos, Costas, Department of Business Administration, Technological Educational Institute of Serres, Terma Magnesias, 62124, Serres, Greece, kz@teiser.gr

Vrana, Vasiliki, Department of Accounting, Technological Educational Institute of Serres, Terma Magnesias, 62124, Serres, Greece, vrana@teiser.gr

Paschaloudis, Dimitrios, Department of Business Administration, Technological Educational Institute of Serres, Terma Magnesias, 62124, Serres, Greece, dpasch@teiser.gr

Abstract

This paper describes a quantitative method of measurement and evaluation of the information provided by hotel websites. It aims to measure the richness of specific and comprehensive information dimensions, which as a whole constitute the information services offered through the web. Data from an extended web search along with responses of hotel managers regarding the importance of the offered information services are used. A conceptual model that describes the hotel web sites information features is used in order to summarize the data and to present the overall information volume offered. The applied model combines seven data dimensions: facilities information, customer contact information, reservation and prices information, surrounding area information, management of the web site, company information and communication. Hotel managers' perceptions are used to weight the relative importance of both the information services and the seven dimensions. We apply the model to Greek hotel web sites. Greek hotels make small use of their websites potential. They are rated low level with respect to crucial dimensions such as reservation and prices information, medium regarding facilities and customer contact information. The overall volume of offered information only reaches the one third of its top rating score.

Keywords: information services, evaluation, performance, websites.

1 INTRODUCTION

The Internet especially World Wide Web has a great impact on the hospitality and tourism industry in recent years. It plays an important role mediating between customers and hotel companies as a place for information acquisition and business transactions (Liang and Law, 2003). The hotel industry is now generally accepting the use of the Web for electronic commerce (Chung and Law, 2003).

For any firm with an online presence, the website is a platform used to communicate with customers and to facilitate business transactions (Van der Merwe and Bekker, 2003). Companies of any size and any sector can benefit from the Internet. However this is not a guarantee of success to any company having a presence on the Internet (Liang and Law, 2003). Websites that do not provide positive experiences may cause customers to decide that it is easier to go to a physical store rather than purchase online (Van der Merwe and Bekker, 2003). According to Forrester Research estimates, Cunliffe (2000) argued that “poor Web design will result in a loss of 50 per cent of potential sales due to users being unable to find what they want, and a loss of 40 per cent of potential repeat visits due to initial negative experience”. Many hospitality companies still do not have adequate knowledge to build a useful site. Some hotels have placed a lot of information onto their websites but do not include relevant information or arrange the information in an appropriate order. More importantly, some hotel websites are not updated regularly. The outdated information may eventually be negative for the hotel’s image (Chung and Law, 2003).

Enhancing hotel’s image has become more important and urgent (Liang and Law, 2003). Many companies wonder whether their www ventures are worth and effort, either economically or strategically (Murphy et al., 1996). Jeong et al.(2003) claimed that developing and maintaining an effective web site would be critical to the success of the business. In short, companies are trying to make their websites as informative and appealing as possible (Liang and Law, 2003).

1.1 Website Content

Huizingh (2000) claimed that providing information is the basic goal of a website while Rachman and Buchman (1999a, 1999b) highlighted that content is the key factor driving visitors to Web sites. Moving from simply broadcasting information to letting customers interact with the Web site content allows the tourism organization to engage customers’ interest and participation (increasing the likelihood that they will return to the site), to capture information about their preferences, and to use that information to provide personalized communication and services (Doolin et al., 2002). The content of the tourism destination Web sites is particularly important, because it directly influences the perceived image of the destination and creates a virtual experience for the consumer. This experience is greatly enhanced when web sites offer interactivity (Cano and Prentice, 1998; Doolin et al., 2002).

1.2 Richness

Sigala (2003b) stated that one of the three features of the virtual marketplace is richness. Richness is the depth and detail of information that can be given to customers as well as the depth of the collected customer information. According to Pan and Fesenmaier (2000) the concept of information richness can be used to describe the nature of information. Information richness is accepted as another decisive factor for the typology of tourism related web sites, since tourism web sites vary tremendously regarding their information richness, and accordingly the design and use of their web sites differ significantly. Richness provides an enhanced potential to reduce any asymmetry of information between buyers and sellers, as both sites are empowered to use information for their own interests. Richness occurs because information flow is greater, deeper and, faster than it is in the traditional market. As buyers have more product/service information, transactions’ transparency amongst prices and vendors increase (Sigala, 2003a).

The purpose of this paper is to demonstrate a procedure used to measure and evaluate quantitatively the amount of information offered in hotel web sites. The use of the perceptions and views of the hotel managers together with data from an extended web search allows a realistic recording of the information services, by means of their relative importance and rating.

2 LITERATURE REVIEW

2.1 Measuring the Website Content

Prior studies have been conducted to measure how rich in information hotel websites are. Murphy et al. (1996) conducted a study to examine the contents and features of hotel websites. They analysed 20 chain hotels and 16 freestanding hotel sites, in the US. They recorded 32 different features that were on those 36 sites. The different features were then placed into four broad nonexclusive categories: promotion and marketing, service and information, interactivity and technology and management. A standardized but personalized e-mail questionnaire was sent to all 36 hotels asking specific questions about their websites experiences. They highlighted that Cyber-hoteliers must, thought, analyse how these features effect or enhance the mission, margin, mechanics, marketing and maintenance of their websites.

Ho (1997) analysed particularly websites from the aspect of content. He used a framework to evaluate websites from a value added customer's perspective. He was the first to identify three purposes in a commercial website: provision of information, promotion of product and services and processing of business transaction. Ho (1997) develops four types of customer values: Time, Custom, Logistic and Sensational. The framework was illustrated as a three by a four matrix. Features were simply classified by their primary function into one of the twelve purpose-value categories. For compatible sites, it was possible to compare how well they do in the same category. In the hotel/resorts industry, web pages were found to be little more than modest travel brochures. Apart from travel tips and destination guides, provisional value was rather scanty. On-line reservation and availability checking seemed to be emerging and may be the key to future development.

Rachman and Buchanan (1999a) conducted a study on effective tourism websites focusing on content. The first part of the study bridges the gap by unveiling what tourists, the tourism industry and tourism academics perceive as an effective tourism website. Next they establish what features, in terms of content, they perceive as important in an effective tourism website. An instrument for the survey was developed based on Ho's (1997) purpose-value evaluation framework. The framework was consisted of 59 features. The Web Based Survey revealed three elements of an effective tourism web site: content, content quality and web design.

In the second part of their study, Rachman and Buchanan (1999b) calculated the expectation score for the 59 features. In the research report, they examine the gap between customers' expectations of the content of tourism websites and the delivery by some of the top tourism web sites. A measure of the delivery of the same 59 web features was provided from a review of sixty of the top tourism web sites in New Zealand and the world. They concluded that the content delivery performance by the New Zealand is lower than the world tourism web sites.

Weeks and Crouch (1999) conducted a similar to Murphy's et al. study, to examine the contents of Australian-based hospitality and tourism websites. They modified the features that Murphy et al. into 33 attributes, and then classified them into four categories. These attributes were then used to analyze 20 websites in six hospitality and tourism sectors. A checklist was devised to isolate features within each of the chosen sites. Totals for elements appearing on sites within each industry sector were calculated. Each sector was then analyzed to find differences and similarities of items included in these sites. The accommodation sector appeared to be less keen than other sectors to tell its visitors about other accommodation or tourism sites.

Wan (2002) studied the web site content of international tourist hotels and tour wholesalers in Taiwan. His evaluation system consisted of three general user criteria: user interface, variety of information and online reservation. Each website was evaluated by rating the overall excellence of user interface and, variety of information on a 5-point rating scale. Results show that "Variety of information" received the lowest rating. More tourist hotels provide on-line reservation systems than do tour wholesalers. Results also indicated that the use of the Internet in Taiwan's tourism/hospitality industry is primary for advertising, not marketing.

Wei et al. (2001) looked into the uses of Internet and its geographical and organizational influences, at their survey carried out among the membership of Global Hoteliers, an organization of executives in the international hotel industry. They found out that hotel size star rating and hotel type were among the organization factors which had some significant effect on certain aspects of the information hotels posted on the Web.

Current research applies also to Greek hotel websites with respect to website customer information. Sigala (2003b) argued that this research becomes more crucial, because of the great economic importance of tourism in Greece, as well as the substantial potential of the Internet for empowering hotel operators by providing them with additional, more efficient and effective marketing and distribution channel. Sigala (2003a) also recorded several characteristics from Greek hotel sites as a part of her research, in an attempt to record and value the offered services. The recording and analysis of the information services offered from hotel web sites is a common and useful way to search how informative the web sites are.

2.2 Measuring the performance of hotel websites

Sigala (2003b) used the Internet marketing mix model to measure the use of the Internet by Greek Hotels and to model their Internet marketing strategies. Every model's dimensions were further analyzed into several aspects/features that indicate the degree to which hotels have adopted sophisticated Internet strategies. The aspects of each dimension were characterized as of low or high sophistication depending on whether the interactive and connectivity capabilities of the Internet were used. She concluded that most hotels could do much more for exploiting the Internet. Most of the hotels were simply treating the Internet as a publishing medium. Many hotels were simply transferring their existing business models in the Internet. Hotels that have an extended, as well as sophisticated Internet marketing mix, gain the most benefits.

Chung and Law (2003) presented an information evaluation model to measure the performance of hotel websites. Their model is developed on the basis of a conceptual framework which consisted of five major hotel website dimensions. The latter are facilities information, customer contact information, reservation information, surrounding area information, and management of websites. The dimensions and their associated attributes were obtained and modified from published articles in the hospitality and tourism literature. A preliminary study was performed with Hong Kong hotel managers to rate the level of importance of the dimensions and attributes. The model was then applied to measure initially the performance of Hong Kong hotels' websites. The resulting performance of a website use is expressed by the total performance score of the site. Experimental findings showed significant differences in performance score for all dimensions among the luxurious, mid-priced and budget hotel websites.

Liang and Law (2003) redefined the features of the functionality Performance Evaluation Model that Chung and Law (2003) proposed, by commencing focus group discussion and rating the importance of the components. Ninety hotels were chosen from different categories. Two investigators conducted the actual performance evaluation. The evaluation scores of the websites were used to compare and contrast the performance among three hotel categories. They concluded that the websites' performance was poor and that there was no significant difference detected on the website performance scores among the three categories of China based hotels.

The present paper goes a step further to the direction of measuring and evaluating the information provided through the hotel web sites. The work of Chung and Law (2003) is expanded in three ways:

1. A larger set of information services is used, in an effort to describe as many services as possible.
2. Seven information dimensions are used instead of the original five, because the larger number of information characteristics need to be categorized into new revised and broader categories.
3. The perceptions and attitudes of hotel managers towards both the specific attributes-information services and the seven information dimensions are taken into account. The amount of information offered in each dimension can be calculated by taking into account the occurrence rate of each characteristic and its importance rating according to hotel managers' perceptions. Also a measure of the overall information provided can be calculated.

3 METHODOLOGY

At the beginning, information services offered on the hotel websites were recorded through an extensive web search. Internet search for the identification and study of online practices is heavily found in the literature (Sigala, 2003b). The top 10 hotel groups and top 20 hotel brands were selected according to the Hotels magazine corporate 300 ranking (Hotels magazine, July 2003) and the Hotel-Online Special Report Annual Worldwide Ranking of Hotel Groups and Hotel Brands (2003). Top hotels can be regarded as most active in the web (for a similar approach see O'Connor, 2003). In the present study two researchers independently performed a web search following a similar methodology, and then compared their findings to form a joint report. The survey resulted in the creation of a "universal" set of 66 information services. The procedure aimed to find as many information features offered by the web sites worldwide as possible. In this way a "complete" list of services was formed in order to capture every information service offered on the websites. Although these features outnumber those used by Murphy et al. (1996) and Chung and Law (2003), many of them are similar to those of the previous studies. Murphy et al (1996) used 32 information features to measure information services. However hotel sites nowadays should include more features, since they are rapidly expanding and developing nowadays more than eight years ago. In order to meet the current needs and demands a new web search should be performed. This search should aim at finding as many information features provided from the websites nowadays as possible.

Chung and Law (2003) considered five dimensions, which describe the content of hotel web sites according to their thematic similarity. These papers proved to be a good starting point for further development in Vrana et al. (2004), and those are also used in the present study. The features, found in this research through the new web search, should be classified into the previous described information dimensions. Consequently, every dimension should be reconstructed from the beginning. However it may not be possible to classify some features in the existing dimensions. Thus the construction of new dimensions and the expansion of the model should be considered.

These 66 information services were placed into seven categories-dimensions according to their thematic similarity: Facilities information, Customer contact information, Reservation-price information, Surrounding area information, Management of the website (in terms of maintenance, administration and web site design), Company information and Communication (Table 1).

Next, a web search in order to record hotel web sites in Greece was performed. Greek Travel Pages (GTP) was used to identify Greek hotels that have a web site. GTP is considered to be the most comprehensive directory of Greek Tourism. A total of 798 hotel web sites were visited. The third step involved the identification of information services, which are offered through the recorded web sites.

Finally, a questionnaire was addressed to twenty-seven hotel managers of freestanding and chain hotels in Greece. All the managers had some familiarity with the Internet and had some knowledge about hotel web sites and the potential that hotel web sites have to attract customers and make business. The managers were able to evaluate the information services and the information dimensions provided through the web. The questionnaire contained questions asking the respondents to rate both

the information services and the information dimensions using a five-point scale (1=not significant, 5=very significant). Each information feature was associated with one question. There were 66 questions regarding the information features plus seven regarding the dimensions as a whole. All of these questions used a 5-point scale. Managers' views were used in order to provide and incorporate the views of the industry regarding website development and web performance, in terms of content information. Alternatively customers' views could be used in an attempt to provide information on how customers evaluate hotel web sites. The authors have followed this approach in a previous work (Zafiroopoulos et al. 2004).

The means of the ratings were used as weights to standardize and correct the findings, which resulted from the web search. This was done in the following way: for every information service the associated rating was divided by the sum of the ratings of the information services in the dimension, producing a percentage. In this way for example, if a hotel site did provide all the information services in a dimension, occurrence of each service would be noted by the digit one, and this result would be multiplied by the percentage. The total results of all multiplications within the dimension would add to 100%. This approach was used for weighing the seven dimensions by using the ratings from the seven relative questions as well. It should be noted that the dimensions have different numbers of features within them. Thus computing percentages of features provided through them may produce findings that have different meanings for different dimensions. For example a percentage calculated for a dimension that has only three features may have a different interpretation compared to a percentage computed for a dimension of ten or fifteen features because every feature in the three features dimension is associated to a greater percentage. This constitutes a limitation of the present study.

		Occurrence %	Mean ratings	SD of the ratings
• Facilities information	General description	93.0	4.75	0.59
	Hotel facilities	90.6	4.82	0.39
	Room facilities	90.4	4.89	0.32
	Activities/entertainment	49.7	4.39	0.88
	Dinning	48.6	4.21	0.79
	Bars	38.7	4.11	0.88
	Conference halls	29.3	3.96	1.07
	Reception facilities	28.7	4.04	0.96
	Shops/gifts	7.0	3.29	1.24
• Customer contact information	Fax	94.9	4.43	0.84
	Address	94.5	4.75	0.65
	Telephone	94.0	4.54	0.79
	E-Mail	92.0	4.79	0.50
	Conduct form/feedback form	19.3	3.85	1.13
	Guest book	8.1	3.50	1.40
	F.A.Q.	2.3	3.04	1.45
• Reservation-price information	Claim form	1.3	3.50	1.35
	Reservation	58.1	4.26	1.10
	Prices	53.1	4.38	0.94
	Secure reservation	21.9	3.96	1.00
	On-line availability	20.4	3.89	1.29
	Book on line	20.2	3.96	1.26
	Packages/promotion	19.7	3.78	1.22

	Offers	12.5	3.71	1.24
	Cards accepted	10.7	3.93	1.25
	For travel agencies	10.2	3.59	1.15
	Promotion other	7.4	2.58	0.99
	Members special	6.9	3.74	1.13
	Currency converter	5.1	2.72	1.17
	Group promotions	3.3	3.71	1.15
	Rewards points or miles	2.4	3.04	1.37
• Surrounding area information	Area Short description	83.8	4.29	0.85
	Map	53.5	4.04	1.13
	Distances	49.1	4.28	0.84
	Area interests	35.0	3.96	1.00
	Ways of transportation	20.4	4.25	0.75
	Weather	18.8	3.57	1.43
	Restaurants in area	3.6	3.14	1.38
	Bars in area	2.8	3.04	1.35
	Nearby corporation - facilities	2.6	3.11	1.40
	Shopping	2.1	3.25	1.35
• Management of the website	Photos-photo album	87.3	3.04	1.26
	Multilanguage	60.3	3.16	1.40
	Web designer	58.5	2.92	1.10
	Web Host	41.7	3.82	1.38
	Links to others	37.0	3.46	0.84
	Links to partners	36.5	2.32	1.11
	Video/virtual tour	21.1	2.93	1.24
	Sign in	11.5	2.67	1.07
	Audio	7.9	3.96	1.04
	Downloads	6.9	3.18	1.54
	Search engines	3.9	3.07	1.41
	Terms of use	3.8	2.96	1.27
	Last update	3.3	3.14	1.41
	Help	1.6	2.82	1.12
	Web-Cam	0.5	4.04	1.25
	E-shop		3.25	1.21
• Company information	About us/brand	20.8	3.37	1.50
	Employment	12.2	2.96	1.11
	Franchise	1.0	2.42	1.18
• Communication	Newsletter	13.7	3.12	1.21
	Announcements	11.0	3.21	1.26
	Awards	9.6	3.79	1.20
	Press	6.1	3.14	1.27
	Questionnaire	1.8	3.39	1.10
	Recommendations	0.9	3.36	1.16

Table 1. Information services. Percentages of occurrence and managers' ratings.

	Mean ratings	SD of ratings
Occurrence	0.661*	-0.716*
Mean ratings		-0.688*

(*: $p < 0.01$)

Table 2. Correlation coefficients among information services Occurrences, Mean ratings and Standard Deviations of ratings.

4 FINDINGS

Table 1 presents the 66 information services with their occurrence percentages for Greece. The purpose of this study is to measure quantitatively the performance of the hotel websites in the context of the sites' information richness. After recording many available information features presented through the hotel web sites, a large checklist was formed to serve as a universal set of information features-services. If hypothetically a hotel web site offered all the recorded services, this would be a hotel web site with the richest information offered. Additionally, since the services were separated into seven dimensions, one could see whether a specific hotel web site offered all or some of the recorded services for every dimension. Taking into account the hoteliers' views, all the information services do not have the same weight with regards to the overall information offered. Instead some may be considered to be more important than others. To incorporate this into the evaluation procedure the mean rating for each information service was used as a weight for the information service that is associated with using the data from the questionnaires. This procedure resulted in estimating the volume of each information dimension.

Before proceeding to the measurement of the information volume, some remarks should be made regarding the relation of ratings to the actual occurrence percentages of the information services. Some queries that could be of interest are: are the most important services actually those with the highest occurrence and vs. versa, are the managers' views uniform or does their distribution depend on the importance of the services? To incorporate these queries in the analysis a correlation matrix, which contained all the three correlations among occurrence mean ratings and standard deviations of the ratings computed from the 66 lines of Table 1, Table 2 was formed. Since all the correlations are high and significant, we could conclude that the most frequent information services are considered important, or the important services are offered frequently. Also the managers' views are more uniform when their ratings are high. That is there is a high degree of agreement among managers when we refer to services that are considered important. In general it seems that hotels manage to provide all the important information services.

Table 3 presents the rendered services of the seven dimensions. They are presented in the form of percentages and they have been formed in the following manner: For every hotel, the weighted amount of offered services was added for each dimension. The result is expressed as a percentage % of the services rendered by the hotel for this specific dimension. If, for example, this percentage were 50%, the hotel would have reached a provision of half of the potential of the specific information dimension.

Considering Table 3, we can conclude that the richest dimensions are 'facilities information' and 'customer contact information' because they both reach 60% of the full capability to offer information services, while they also enjoy the highest values of importance rates according to managers' rating. On the contrary, reservation and prices information dimension, while considered as the most important information dimension (17.08%) to make online business, it only reaches 20% of its full capability. The rest dimensions are ranked lower by the hotel managers and they are provided also in small percentages. By weighting each dimension's volume by its relative importance (Table 3), the overall score can be calculated. The overall score may reach its highest value 100% when all the dimensions

have reached the 100% of their capacity. Weighing of the dimensions is necessary because hoteliers should have the opportunity to evaluate the concept of information dimensions separately from the sets of information services. In this way, the total score is corrected to represent a more realistic estimation of the importance of each dimension. In the case of Greek hotel web sites the score is 31.32%. Greek hotels fail to provide a wide range of information services on the web. An overall measure of volume is calculated by combining the seven different dimensions after weighing them by dimensions' ratings. The overall volume of information can be regarded as a measure of what the customer totally perceive while visiting and navigating through the hotel web sites.

Information Dimensions	Volume according to information services occurrence and hotel managers perceptions (average values)	Relative importance according to hotel managers perceptions (average values)
Facilities information	56.10%	16.62%
Customer contact information	57.11%	16.62%
Reservation-prices information	19.59%	17.08%
Surrounding area information	30.15%	14.27%
Management of the web site	23.34%	10.39%
Company information	12.40%	12.21%
Communication	7.14%	12.81%
Overall information volume	31.32%	100.0%

Table 3. Measures of information volume

5 THE EFFECT OF CLASS, SIZE AND CHAIN MEMBERSHIP

Previous studies demonstrated that managerial characteristics of hotel companies, such as the hotel class, size and chain membership are positively correlated with the amount of information offered through the hotel web sites. O' Connor (2003, p. 91) stated "that major international hotel chains' electronic-distribution activities are indicative of industry patterns, because recent research has shown that large companies are most active on the web-perhaps because their size often gives them an advantage in terms of technical expertise and financial resources." Thus it is interesting to include in the analysis the study of managerial characteristics of the hotels, such as *hotel class, size in number of beds and chain membership*. Hotel class and chain membership are ordinal variables while size refers to the number of beds in every hotel (CLASS: 1 'E', 2 'D', 3 'C', 4 'B', 5 'A', 6 'L', CHAIN, 0 'no chain member', 1 'chain member'), and can serve for further analysis, which is described bellow.

	Class ^a	Size ^b	Chain ^c
Facilities information	0.48**	0.48**	0.33**
Customer contact information	0.05	0.11**	0.08*
Reservation-prices information	0.23**	0.30**	0.33**
Surrounding area information	0.07	0.17**	0.16**
Management of the web site	0.20**	0.21**	0.30**
Company information	0.29**	0.35**	0.44**
Communication	0.32**	0.40**	0.42**
Overall volume	0.40**	0.49**	0.48**

(a: CLASS, 1 'E', 2 'D', 3 'C', 4 'B', 5 'A', 6 'L', b: SIZE, in number of beds, c: CHAIN, 0 'no chain member', 1 'chain member', **: p<0.01, *: p<0.05)

Table 4. Correlations between dimensions and hotel class, size, and chain membership.

Table 4 presents the correlation coefficients among the managerial characteristics and the seven information dimensions and overall volume. All the managerial characteristics have a positive correlation with the seven dimensions and the overall information volume. However chain membership and size are also significantly correlated with every one of them, while hotel class is not significantly correlated with customer contact information and surrounding area information. All the three managerial characteristics are significantly correlated with the overall volume of information provided by Greek hotel web sites.

Dependent variables / Dimensions	Independent variables	B	SE	Beta	p
Facilities information	Constant	15.82	3.34		0.00
	Class ^a	7.40	0.77	0.33	0.00
	Size ^b	0.05	0.01	0.27	0.00
	Chain ^c	6.18	1.55	0.13	0.00
Customer contact information	Constant	55.98	0.67		0.00
	Class ^a				
	Size ^b	0.01	0.00	0.11	0.00
	Chain ^c				
Reservation-prices information	Constant	8.93	2.70		0.00
	Class ^a	1.31	0.62	0.08	0.04
	Size ^b	0.02	0.00	0.15	0.00
	Chain ^c	8.66	1.26	0.26	0.00
Surrounding area information	Constant	26.51	0.94		0.00
	Class ^a				
	Size ^b	0.02	0.01	0.13	0.00
	Chain ^c	4.48	1.54	0.11	0.00
Management of the web site	Constant	15.68	1.92		0.00
	Class ^a	1.23	0.42	0.11	0.00
	Size ^b				
	Chain ^c	6.76	0.88	0.28	0.00
Company information	Constant	-11.28	3.93		0.00
	Class ^a	3.05	0.90	0.12	0.00
	Size ^b	0.03	0.01	0.17	0.00
	Chain ^c	17.94	1.83	0.35	0.00
Communication	Constant	-9.37	2.52		0.00
	Class ^a	2.26	0.58	0.14	0.00
	Size ^b	0.03	0.00	0.22	0.00
	Chain ^c	10.33	1.17	0.31	0.00
Overall volume	Constant	16.66	1.59		0.00
	Class ^a	2.14	0.37	0.19	0.00
	Size ^b	0.02	0.00	0.28	0.00
	Chain ^c	7.58	0.74	0.33	0.00

(a: CLASS, 1 'E', 2 'D', 3 'C', 4 'B', 5 'A', 6 'L', b: SIZE, in number of beds, c: CHAIN, 0 'no chain member', 1 'chain member')

Table 5. Multiple linear regressions of dimensions by class, hotel size and chain membership using stepwise method.

The analysis takes a step further by performing a joint analysis of the impact of the characteristics using regression analysis. Because the three characteristics are probably intercorrelated, stepwise method is a choice to avoid multicollinearity. Table 5 presents the coefficients of the models. In most dimensions and the overall volume, it is the full set of managerial characteristics that affects the amount of offered information.

Facilities information is offered more by higher-class hotels. According to Beta coefficients class has a stronger impact on the dimension than size and chain membership have. Customer contact information and surrounding area information are offered more by big hotels, by means of hotel class, size or chain membership. For Reservation and prices information, management of the web site, company information, communication and the overall information, it seems that chain membership has the stronger effect on the amount of information provided. While all the managerial characteristics are of importance, it is chain membership that prevails.

6 CONCLUSION

This paper demonstrated a procedure used to measure and evaluate quantitatively the amount of information offered in hotel web sites. It is the perceptions and views of the hotel managers that allowed the realistic recording of the information services, by means of their relative importance and rating.

The findings of the procedure indicate that Greek hotels make small use of the Internet potential as a whole and also provide very little information about online reservation and prices, even though it is considered as the most important information dimension. In this way, they do not take advantage of a crucial factor, which could enhance e-Business.

Commenting on the findings we could easily agree with Liang and Law (2003) suggestions according to which hoteliers need to make more efforts for the application of the Internet to meet the increasing marketing demands. Hotels could use this distribution channel to process reservation on the web. The Internet can help hotels to save costs for distribution without any commission. From the customer's perspective, an instant confirmation and real time process can be made through the Internet, which is very helpful for customers. Value added services like surrounding area information could strengthen the customers' understanding and confidence to the hotel, while increasing the traffic to its site.

As far as the methodological part of this paper is concerned, we can conclude that the seven dimensions model evaluated by hotel managers' views and perceptions can be used to describe, to a certain extend, the total picture of the rendered services on the web. While prior studies succeeded in presenting an overview of the websites information services, this paper provides a more detailed description and contributes to a better understanding and measuring the performance of hotel web sites.

References

- Cano, V. and Prentice, R. (1998). Opportunities for endearment to place through electronic "visiting": WWW homepages and the tourism promotion of Scotland. *Tourism Management*, 19(1), 67-73.
- Chung, T. and Law, R.(2003). Developing a Performance Indicator for Hotel Websites. *International Journal of Hospitality Management*, 22(1), 343-358.
- Cunliffe, D. (2000). Developing usable websites – a review and model. *Internet Research: Electronic Networking Applications and Policy*, 10(4), 295-307.
- Doolin, B., Burgess, L. and Cooper, J. (2002). Evaluating the use of the Web for tourism marketing: a case study from New Zealand. *Tourism management* 23 (5), 557-561.

- Huizingh, E.K.R.E. (2000). The content and design of web sites: an empirical study. *Information & Management*, 37, 123-134.
- Ho, J.(1997). Evaluating the World Wide Web: A global study of commercial sites. *Journal of computer mediated communication*, 3 (1). Retrieved 18/10/2004, from <http://www.ascusc.org/jcmc/vol3/issue1/ho.html>
- Jeong M., Oh, H. and Gregoire, M. (2003). Conceptualizing Web site quality and its consequences in the lodging industry. *Hospitality Management* 22, 161-175.
- Liang, K. and Law, R. (2003). A modified Functionality Performance Evaluation Model for evaluating the performance of China based hotel websites. *Journal of the Academy of Business and Economics*, April. Retrieved 18/10/2004, from: http://www.findarticles.com/p/articles/mi_hb3198/is_200304/ai_n7873374
- Murphy, J., Forrest, J. E., Wotring, C. E., and Brymer, A. R. (1996). Hotel management and marketing on the Internet. *The Cornell Hotel and Restaurant administration Quarterly*, 37 (3), 70-82.
- O' Connor, P. (2003). On line Pricing: An analysis of Hotel Company Practices. *The Cornell Hotel and Restaurant administration Quarterly*, 44(1) 88-96.
- Pan, B. and Fesenmaier, D. (2000). A Typology of Tourism Related Web Sites: Its Theoretical Background and Implications. In *Information and Communication Technologies in Tourism* , Wien: Springer-Verlag, 381– 395.
- Rachman, Z. and Buchanan, J. (1999a). Effective tourism websites, Part 1: Literature Review and features survey. Retrieved 18/10/2004, from <http://www.mngt.waikato.ac.nz/depts/mnss/john/1999-12TourismWeb.pdf>.
- Rachman, Z. and Buchanan, J. (1999b). Effective tourism websites, Part 2: Expectation versus delivery of tourism Web sites.. Retrieved 18/10/2004, from <http://www.mngt.waikato.ac.nz/depts/mnss/john/1999-13TourismWeb.pdf>
- Sigala, M. (2003a). Competing in the Virtual Marketplace: a strategic model for developing e-commerce in the hotel industry. *International Journal of Hospitality Information Technology*, 3 (1), 43 – 60.
- Sigala, M. (2003b). Developing and Benchmarking Internet Marketing Strategies in the Hotel Sector in Greece. *Journal of Hospitality & Tourism Research*, 27 (4), 375 – 401.
- Van der Merwe, R. and Bekker, J. (2003). A framework and methodology for evaluating e-commerce Web sites. *Internet Research: Electronic Networking Applications and Policy*. 13 (5), 330-341.
- Vrana, V., Zafiroopoulos, C. and Paschaloudis, D. (2004). Measuring the Provision of Information Services in Tourist Hotel Web Sites : The Case of Athens-Olympic City 2004, *Tourism and Hospitality Planning & Development* 1(3): 255-272.
- Wan, C.S. (2002). The web sites of international tourist hotels and tour wholesalers in Taiwan. *Tourism Management*, 23 (2), 155-160.
- Weeks, P. and Crouch, I. (1999). Sites for the sore eyes: an analysis of Australian tourism and hospitality web sites. *Information Technology and Tourism*, 2, 153-172.
- Wei, S., Ruys, H., Van Hoof, H. and Combrink, T. (2001). Uses of the Internet in the global hotel industry. *Journal of Business Research*, 54(3), 235-241.
- Zafiroopoulos, C., Vrana, V. and Paschaloudis, D. (2004). Patterns of Information services offered on the web, An analysis of Hotel-Company Practices, Annual European Council for Hotel, Restaurant and Institutional Education (Euro-CHRIE) Conference “Global issues and trends in Hospitality and Tourism Industries”, Ankara Turkey: Bilkent University, 3-7 November 2004.