Christos A. Vassiliadis
University of Macedonia
Thomas A. Fotiadis
University of Macedonia
Tsiolas Simos
Bituminous industry "Atlantis Sa"

Case Study on Perceptual Based Optical Construct Research Technique

The present case study introduces an innovative computer based application in order to attract the tourists' attention via an advanced interactive 3D environment. To support the stated purpose of further advancing the decision making procedure – based on the aesthetics literature research background - high technology and modern computer programming has been utilized. The obtained research results have been processed with the help of a statistical program. These results strongly supported the inferred hypothesis that the utilization of high technology enriches the perspective and the conceptual perception of the potential customers of tourism products.

Keywords: High Tech Marketing, 3D Marketing Applications, Aesthetics Applications, Marketing Dynamic Applications, Tourism Strategic Marketing

Christos A. Vassiliadis is a lecturer in Marketing in University of Macedonia, Social and Economical Sciences, Thessaloniki Greece. He also teaches Marketing Lessons in the MBA Programs of the University. His research field, focus on empirical research in Tourism Studies specifically in Tourism Destination Marketing and Management. His research work is published in Journals like Journal of Tourism Management, Tourism Analysis and as research papers in International Conferences.
E-mail: chris@uom.gr, Tel. +0030 231 0 891581, Fax: +0030 231 0 891544, Address: Egnatia 156 st., Thessaloniki 54 006 - GR.

Thomas A. Fotiadis has a Marketing Ph.D. His doctoral studies were concluded in University of Macedonia, Social and Economical Sciences, Thessaloniki Greece. He has a Masters' degree in Business Administration, which he also obtained from the University of Macedonia as a scholarship student, and he will have concluded his Masters' degree in Business Computing early in 2005 at the Aristotle University of Thessaloniki. He has been teaching Marketing and Economic Lessons in the TEI of Serres, and Thessaloniki for the last five years .He has also been teaching at the University of Macedonia. His research field, focuses on empirical research in High Tech Marketing and Management of Information Systems. His research work is published in Books, and has taken part in several International Conferences.
E-mail: fotiadis@uom.gr, Tel. +0030 231 0 826025, Mobile +0030 6944630505, Address 49, Karakassi str.T.T 54644, Thessaloniki - GR.

Tsiolas Simos is an executive manager and member of the executive board (public relations and marketing sector) of the bituminous industry "Atlantis Sa". He is specialized in advanced computer programming and internet applications. His research field focuses on the designing and programming of advanced interactive computer applications both for private and public use.
E-mail: s.tsiolas@atlantis-sa.gr, Address Thessaloniki - Av. K. Karamanli 170, p.c. 54248Tel: 2310.335088, Fax: 2310.335087

The prevalent market motivation can be classified into two main categories: Personal by motivation and social Motivation. The so-called 'aesthetics' or alternatively the 'sensory stimulation' is an integral part of the of the aforementioned personal motivation for conducting buy. According to Kotler (Kotler, 1974) the aesthetics of a department (or to be accurate 'the store atmosphere') is one of the more influential factors that shape the consumer perceptions and attitude concerning perceptual image of a store. The dimensions of the in-store atmosphere can be divided (Kotler, 1974) into the visual (with the shape, color, size, brightness aspects emphasized), the aural (emphasizing on the volume and the type), the olfactory (emphasizing on freshness), and the tactile (emphasizing on subfactors, such as gravity, temperature, softness) According to Bartley (Bartley, 1988 p.25), the senses is what allows people to realize their internal status and concurrently conceive the external reality, that is the environment they conduct their everyday factions. The sense that allows the perception of the environment is, beyond any doubt, integrally included in the group of the aforementioned senses. The visitors' image for the destinations is highly influenced by (Grunn, 1988) the innate characteristics of ones personality. It is the successful combination of both though, that augments the possibility for shaping a positive consumer attitude on the one hand, and on the other hand increases the possibility for an actual-realized visit (Sirgy, 2000).

Research Institutions (CCA in Paris for instance) extensively use the pictorial stimuli approach in questionnaires that seek to define the consumers' lifestyle. Adopting the use of images as research variables, the evaluation of the aesthetic preferences (tastes) of the candidate consumers, becomes feasible. Using certain patterns and colors they match different objects of potential consumption to different candidate consumers: Clothes, cars, ideal accommodation,

internal designing, etc. are only subset of the potential market list (Grunerd, Backmann and Ashegaard, 1997, p.163-165). ….'The interactive opportunities afforded by the internet not only offer information about buyers' current tastes and preferences, but also provide information about their potential needs and future market trends through marketing research' (Nicholls, Roslow, 1999)… 'The need is to look at business through the eyes of the customers, given that the Internet will increase the power of the consumer (Walters, Lancaster, 1999).

The purpose of the present paper is – based on the above – to further support the conclusions reached by the aforementioned scholars and to enrich their point of view by introducing an innovative computer-based application, where instead of using static pictures of a landscape in order to attract their tourist attention, an interactive 3D environment is proposed and applied.

For the purposes of the conducted research, advanced technology supported by modern computer programming has been utilized. Specifically a digital camera with fisheye lens is used to capture ecliptic, mutually complementary frames of the surrounding landscape. The individual frames were processed and combined in such a way so as to form a perfect sphere (figure 1). The users could use the control panel to rotate the sphere and see through a quadrangular mask, projected in the internal of the sphere, every single aspect of the surrounding area, giving the sense of controlling a live video camera in the demonstrated area (figure 2). Additionally he could make use of the digital zoom faction in order to focus on specific points.

The project, compounded by a total sample of 89 filled questionnaires, has been applied in the laboratories of the University of Macedonia, where graduate and postgraduate students were asked to compare and evaluate the same characteristics of tourism accommodations (external view, rooms, restaurants and attractions were the evaluating factors) demonstrated once

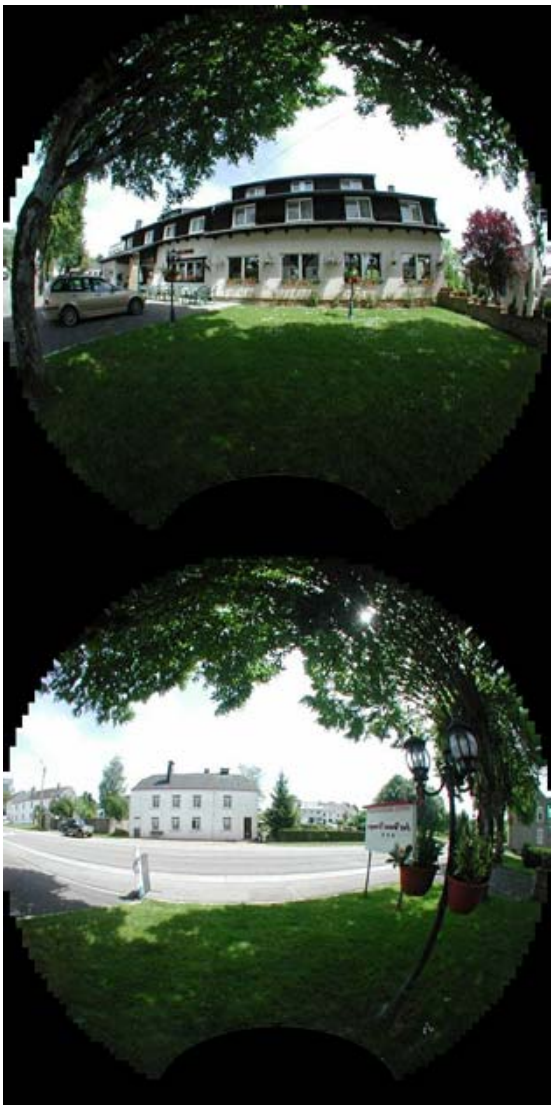
with static pictures and then with the proposed interactive 3d environment. The digital questionnaire was programmed in html and used a database, programmed in Microsoft access, to store the obtained data. The same project will be programmed for Apache server in php and mysql data base in order to be applied in the internet (http:// ba.uom.gr/mkt) and support the creation and maintenance of an extended marketing database.

	N	Range	Minimum	Maximum	Sum
	Statistic	Statistic	Statistic	Statistic	Statistic
DIFHOT1	89	21,00	-12,00	9,00	-47,50
DIFHOT2	89	23,00	-8,00	15,00	229,00
DIFROOM1	89	61,00	-16,00	45,00	107,00
DIFROOM2	89	31,00	-15,00	16,00	147,00
DIFRES1	89	36,00	-12,00	24,00	143,50
DIFRES2	89	18,00	-12,00	6,00	23,50
DIFLAN1	89	28,00	-16,00	12,00	-8,00
DIFLAN2	89	18,00	-3,00	15,00	263,00
Valid N (listwise)	89				

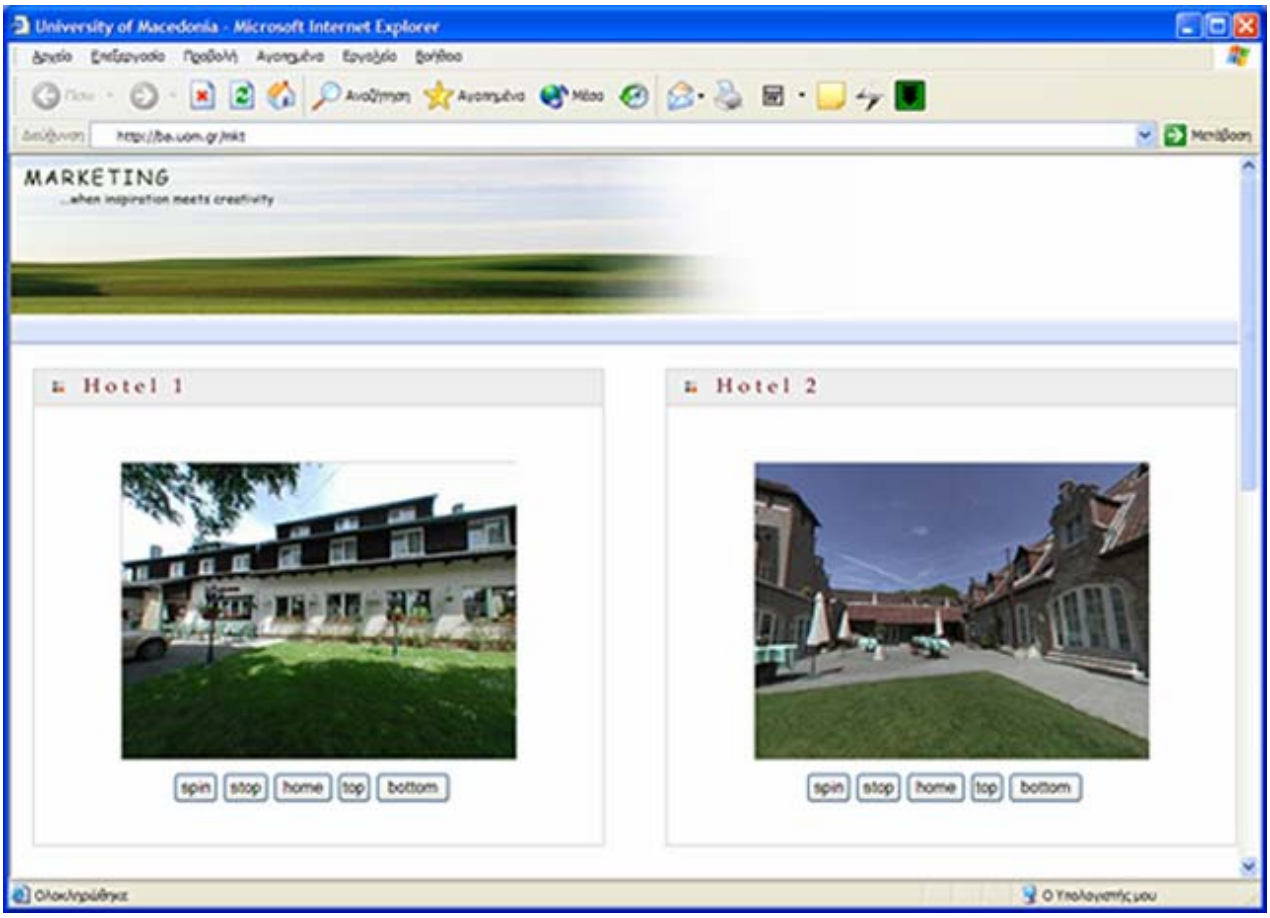
The statistical analysis of the sample highlighted worthmentioned differences. These differences were indicated where evaluation concerned the same characteristics, demonstrated firstly by a static image, and then by applying the proposed interactive 3D environment. This were based on the fact that when static pictures or animations are used to demonstrate aspects of the real world the user makes an extended use of his imagination and offers distorted answers based on an unrealistic point of view. By choosing to create an interactive 3d environment, where the user can manually concentrate his optical field and focus on specific aspects of the surrounding area, the use of the 'optical structure perception' is seriously minimized and thus, accurate results, closer to the real tourism product offer and the 'real world' tendencies of the consumers, can be obtained.

In the final part of our research we are proposing a very effective way of storing, categorizing and administrating, in a marketing database, the obtained information. An interactive global map is used as interface where the user of the data base could login with a personal user id and password and can call the information of a specific area by selecting it on the map. The application can be adjusted to focus on the map from the general panoramic view of the globe to the specific city block (giving the sense of a satellite infiltration) providing analytical categorization of the stored data.

(Figure 1)



(Figure 2)



References

Kotler P. (1974). Atmospherics as a Marketing Tool. *Journal of Retailing*, Vol. 49 (Winter) pp.48-63.

Tauber E.M. (1972). Why Do People Shop?. *Journal of Marketing*, Vol.36 (October), pp.46-59.

Grunn C.A. (1988). Vacationscape-Designing Tourist Regions, (Second Edition), VNR Company, New York.

Sirgy m.j. and Su C. (2004). Destination Image, Self Congruity and Travel Behavior: Toward an Integrative Model. *Journal of Travel Research*, Vol.38, p.341.

Grunert-Backmann S.C. and Ashegaard S. (1997). Seeing with the Mind's Eye : On the use of Pictorial Stimuli in Values and Lifestyle Research, in :Kahle L.R. and Chiagouris L., Values, Lifestyles and Psycographics, pp.161-181, Lowrence Erlbaum Ass., U.S.A.

Walters D., Lancaster C. (1997). Using the Internet as a Channel for Commerce. *Management Decision*, Vol.37 (10), pp.800-17.

L.T., Nicholls J.A.F. and Rslow S. (1999). The Relationship between learning and new product success in export markets. *International Marketing Review*, 16(6), pp.476-503.