

Efficient e-Marketing in Tourism through a Novel Customer Relationship Management Model

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Abstract—This paper proposes an efficient customer relationship management model based on technological convergence of emerging next generation networks, such as interactive digital television and network multimedia systems. The proposed research approach is exploited in tourism sector for effective destination management, enabling for personalized e-marketing strategies and facilitating marketers to accomplish optimum marketing data analysis. The proposed research approach is evaluated for its applicability and usefulness by interviewing a sample of Destination Marketing Organization managers. The findings of this research provide useful practical implications.

Index Terms—Customer relationship management, destination management organizations, interactive digital television, marketing data analysis

I. INTRODUCTION

THE emergence of new tourism destinations and the intense competition in a rapidly and radically changing global environment, have forced destinations to seek more innovative marketing strategies in order to gain a competitive advantage. Destination marketing practices are greatly influenced by advances in information and communication technologies (ICT) due to the fragmented and information intensive nature of destination products. Developments in ICT are implemented by destination marketing organizations (DMOs) to fully utilize their features in promoting their destinations [1]. Travel and tourism sector provides an ideal context, towards investigating the influence of sophisticated technologies in marketing, especially regarding Customer Relationship Management (CRM) [2]. ICT can facilitate the

relationship building process with customers by providing systems which collect customer information and translate it into benefits for both the organization and the customer. The information gathered through technology allows DMOs to tailor their products and services for their potential customers [1].

Furthermore, advances in interactive digital television, ICT, Web based technologies and their convergence could contribute efficiently towards, optimizing the process of collecting and analyzing data, regarding customers' personal preferences. More specifically, interactive digital television (iDTV) elaborates on the development of emerging communication networks, able to provide multiple multimedia and Internet based services. On the other hand, Internet Protocol Multimedia Subsystem (IMS) is a promising technology that may be adopted in future mobile and digital television systems to provide advanced capabilities and added value data services.

In this context, this paper proposes a technology interactivity model, elaborating on the convergence of IMS with iDTV systems, in order to enable for efficient data processing and analysis in Customer Relationship Management. As CRM relies upon customers' information, the proposed mechanism facilitates DMOs to track customers' preferences and subsequently provides them superior added value via customized services. As a result, destination marketers will be able to base much more cost effective marketing decisions on a detailed knowledge of the behaviour and preferences of their existing or potential customers.

II. CUSTOMER RELATIONSHIP MANAGEMENT FOR TOURISM DESTINATIONS

One of the key goals in marketing is enhancing brand loyalty. The relatively recent shift in thinking towards destinations as brands, particularly since the 1990s, requires a brand management approach focusing on developing relationships with visitors rather than simply focusing on generating sales [3]. Customer Relationship Management (CRM) has emerged in the fields of marketing, management, and information technology as a managerial philosophy that enables an organization to improve the relationship with its customers, by a better understanding of their needs. It is a

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customer-oriented and IT-based management concept with the objective of establishing long-term and profitable customer relationships [4].

Travel and tourism sector has witnessed the introduction of many CRM practices. In fact, travel and tourism firms and organizations have been among the innovators and early adopters of CRM [5]. Airline frequent flyer programs, hotel frequent guest programs and loyalty clubs, car rental company customer preference schemes have all contributed to tourism being at the forefront of industries adopting CRM [6].

In the case of destinations, CRM evolves as an important area of research given the inherent advantages of repeat visitation to the destination. Relationship-building can be achieved by allowing interactive communication between customers and the organization, allowing transactions to be completed, and providing personalization/customization capabilities and customer loyalty or retention programs. DMOs should strive to implement CRM functions to create long term relationships with customers, provide a better customer experience and create greater customer satisfaction to build long lasting relationships [1].

CRM implementation requires the creation of a database of customer's information, which in the case of destinations concern visitors' demographics, preferences, lifestyle, attitudes and beliefs about the destination, purchase behavior, reactions to marketing messages and promotions, frequency and volume of visits, spending patterns, probability of future visitation etc. This process presents challenges for DMOs. The core challenge inhibiting CRM adoption by most DMOs is that the destination marketer rarely comes into contact with actual visitors. Most visitor records are held by service providers and there is a difficulty for DMOs in obtaining these customer data [7]. So, how is it possible for DMOs, who have no direct contact with visitors, to engage in meaningful dialogue to stimulate repeat visitation and destination loyalty?

ICT may be the answer to the problem. For destination marketers, the explosion of technologies provides unprecedented potential to connect with travelers and promote their destinations in new and effective ways. Innovations in technology provide new ways to obtain, collect and analyze customer data, communicate with customers, and offer them customized solutions. Programs like data mining tools and data warehousing techniques allow organizations to identify and analyze consumer needs. Consequently, ICT increases the practical value of CRM by allowing DMOs to efficiently perform CRM tasks [1].

III. CUSTOMER RELATIONSHIP MANAGEMENT FRAMEWORK BASED ON TECHNOLOGY CONVERGENCE

Interactive communication is vital in order to design an effective e-marketing strategy, enabling the real needs of customers/users to be successfully met. Nowadays, sophisticated advances may be the mean, facilitating for a vital interactive contact between DMOs and customers. Towards enabling for a more efficient cooperation and relationship between these two parties, a first part of an IT strategy in a

DMO, is to integrate business systems using a common interface, so that customers can interact and report back directly their needs. The second component of this strategy is an efficient data analysis. The results may define the basis for models aimed at understanding real needs of customers. In this context, advances in iDTV, ICT, web technologies and their convergence could efficiently contribute, towards optimizing the process of collecting and analyzing data that is vital for marketing in tourism sector. A new CRM model may enable customers' collaboration with organization, by utilizing digital media and allowing the use of direct response communication, in order to build a relationship. Utilization of an interaction channel, according to the generic interactivity model [8], is essential in order to transfer customers' requests to the service provider, enabling for the provision of real interactive services [9] through iDTV systems.

More specifically, Fig. 1 depicts the proposed CRM model that enables for the real time collection of data stemming from customers' premises. This data is stored in the IMS Module/Database of Fig. 1, facilitating marketing analysis phase, in order to establish targeted and efficient advertising strategies. Data analysis is performed by exploiting data mining methods, such as predictive visual analytics, facilitating marketers to predict future probabilities and trends based on observed events. The proposed approach encompasses a multi-perspective method that includes integrated reasoning, pattern recognition and predictive modeling associated with domain knowledge.

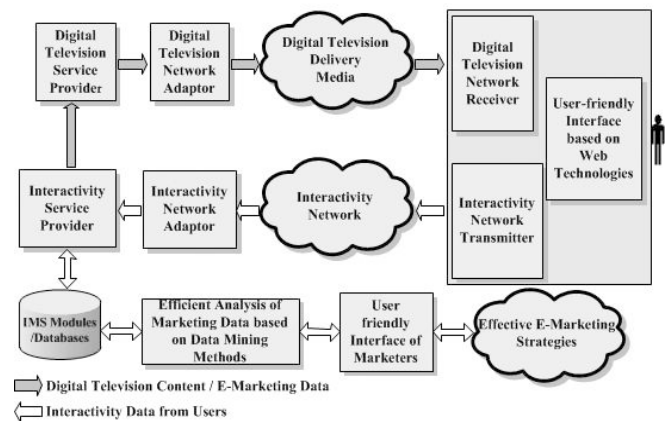


Fig. 1. Customer Relationship Model based on Technology Convergence

Analyzing collected data, according to the proposed approach the attempt to better understand customers' behaviour and predict future purchasing patterns, will be enhanced. The proposed data mining techniques are used to identify sales performance by geographical area, product type and buying characteristics, as well as channel strategies. Then demographics, lifestyle variables and purchasing behaviour are used to define for example what new products/services should be introduced into the tourism market. Finally, behavioural metrics developed using predictive analytics models can graphically reflect selected sales information and create what-

if scenarios to define and confirm the right combinations of new tourism product distribution. In a general context, the goal of predictive visual analytics research is to turn information overload into an opportunity. Decision-makers should be enabled to examine massive, multi-dimensional, multi-source, time-varying information stream to make effective decisions in time-critical situations. For informed decisions, it is indispensable to include humans into the data analysis process to combine flexibility, creativity, and background knowledge with the enormous storage capacity and the computational power of today's computers. Specific advantage of visual analytics is that decision makers in the field of tourism sector, may focus their full cognitive and perceptual capabilities on the analytical process, while allowing them to apply advanced computational capabilities to augment the discovery process. In order to address all these issues, in our dynamic world, the center of research for cutting-edge technology and breakthrough has shifted from data warehousing and mining to predictive visual analytics. Data mining and predictive analytics are increasingly popular because of the substantial contributions they can make in converting information to knowledge. Marketing is among the most frequent applications of the techniques, and whether we think about product development, advertising, distribution and retailing, or marketing research and business intelligence, data mining and predictive analytics increasingly are being applied.

IV. USER-FRIENDLY WEB TECHNOLOGIES INTERFACE

The proposed interactive system based on the CRM model described above, requires the support of user-friendly interfaces, facilitating customers and marketers to efficiently interact. There are many technologies on iDTV systems for displaying information and allowing interactivity with users. While other markets, like the smart phones, have only a few different platforms, with clear market leaders of Google Android OS and Apple iOS, in the interactive TV industry, things are much more complex. Currently, interactive TVs are developed by traditional TV manufacturers (LG Smart TV, Samsung Smart TV, Philips SmartTV), internet service companies (Yahoo TV, Google TV), computer manufacturers (Apple TV), PC software developers (Boxee, Kylo.tv, Windows MCE), TV channels (HbbTV), set-top box manufacturers (Roku, TiVo), Media Player manufacturers (Western Digital, Iomega) and even game console manufacturers (Sony PS3, Microsoft XBOX 360, Nintendo Wii). It is also important to note that each of these devices have different input methods as well, from simple TV remotes to game controllers and full QWERTY keyboards with touchpads to mobile phone controller apps. All these platforms, each one with a different development Application Programming Interface (API) can make it really hard for a widely compatible system to be produced.

However, recently, there is a clear movement towards the adoption of the familiar standard web technologies of HyperText Markup Language (HTML), Cascading Style

Sheets (CSS) and JavaScript (JS) for every Connected TV device, either through their web browsers or even in their application development core. As [10] states: "*There is a strong growth in the deployment of devices that integrate regular Web technologies such as HTML, CSS, and SVG, coupled with various device APIs*". The combination of the latest version of these technologies is often referred to as simply HTML5, a more marketing used term, which is the latest HTML version but also includes the latest CSS version 3 and JavaScript. HTML5 is used for structure, CSS3 for presentation/style and JavaScript for Interactivity/Animation. None of the above web technologies is complete on its own but by combining the three of them, it is possible to create very sophisticated pieces of web software. It is important however to note that HTML5 is not a finished W3C Recommendation and is not expected to be completed before 2014 [10]. However, as the industry progresses really fast, it has already been implemented in most major browsers, and is currently being adopted by connected TV devices as well. The official latest Editor's Draft version is published online from W3C [11].

There are two main demands for the display of information in the proposed system. The first one is associated with the presentation on the client-side (i.e. iDTV viewers) while the second one elaborates on the presentation of the gathered information to marketers. For both cases, Web Technologies (HTML5/CSS/JS) can be utilized for optimum results. On the client side, the new capabilities of HTML5 can produce impressive, TV quality, graphics, effects, text and of course video [12], that is user-controlled using JS. Information can be gathered in real-time using Ajax technology to send and receive data to/from the server database. On the marketers' side, HTML5 can be exploited to achieve real-time, easy-to-read visualization of the gathered data. One important advantage of real-time data visualization is that it is highly customizable and interactive, to allow the extraction of the most useful information. Also, since such web technologies are compatible with most devices, and are not based on a platform specific API, the analytics will easily be available on numerous devices, such as regular PCs, TVs and also tablets and mobile devices.

V. RESEARCH METHODOLOGY

The research framework of the study was based on [13] CRM adoption model. They suggest in their study that the CRM adoption process consists of three stages: perception of CRM, adoption of CRM and implementation of CRM. Once a firm is persuaded by the benefits, it decides to adopt CRM and begins to search for the technologies to implement. This study focuses on the first stage of their model, namely perception. In this stage, companies recognize a CRM system and its functions. Consequently, the objective of the research was to identify the DMO marketing managers' perceptions of the proposed CRM system, regarding its applicability and usefulness. In order to meet this objective, a convenience

sample of 11 regional tourism organizations (RTOs) and local tourism administrations (LTAs) in the island of Crete, Greece, was selected. These administrations are responsible for marketing the island of Crete or smaller areas in the island as tourism destinations. Selected administrations were initially contacted, in order to identify their willingness to participate in the study. Of the 11 administrations targeted, 7 responded. For the purpose of confidentiality and anonymity, the seven responders are identified as R1, R2, R3, R4, R5, R6 and R7.

The proposed CRM system was demonstrated to the seven marketing managers of the corresponding administrations. Semi-structured in-depth interviews with the managers followed the demonstration in order to identify: a) the level of CRM practices implementation in their administrations, and b) their perceptions of the usefulness, the applicability and the benefits that the proposed system could possibly bring to their business. Respondents were reassured that the results would have a degree of confidentiality. The seven interviews took place during September 2013. While the small and convenience sample that was used eliminates the possibilities for generalizing findings to other DMOs, the findings provide some useful practical implications.

VI. RESULTS

The first introductory question to the seven marketing managers was about their knowledge of the CRM theory. All managers looked familiar with the concept stating that they have introduced CRM practices in their organization philosophy and operating methods. The managers were then questioned about the CRM practices they implement to acquire visitors' data. Most managers reported that they use features in their destination websites, such as online registration, newsletters and feedback forms, in order to gather visitors' data. Furthermore, managers mentioned that they have started to exploit some basic Web 2.0 features, such as social media (mainly Facebook, Twitter, YouTube, Pinterest, Flickr and TripAdvisor) and RSS feeds (in one case). As they argued, they try to constantly monitor user-generated content (UGC) for understanding the profile of their visitors, as well as for protecting their destination's online reputation. Overall, the managers shared the opinion that the Web could serve as a marketing tool to establish, maintain and enhance long-term relationships with visitors and third parties. However, while they seem to be aware of the potential of the Web as a CRM tool, most of them admitted that they have only embraced a few elements of CRM and that they are far from full exploiting the possibilities the Web offers for a successful CRM strategy.

Moreover, all managers mentioned that another common way for acquiring visitors' data is via their collaboration with the tourism businesses (mainly hotels) operating in their destinations. In most cases, DMOs in Crete are cooperative associations of municipalities and tourism businesses; consequently there is a close collaboration between them. As they mentioned, hotels keep customer databases to store guests' history records. Hotels exploit these databases in order

to develop frequent, loyalty and reward programmes, personalize guests and other marketing purposes.

Obviously, CRM practices would not be adopted unless organizations can recognize their benefits. When inquired about their motivations for implementing CRM, managers reported many benefits such as improving and personalizing customer service, reducing guest complaints and increasing guest satisfaction, encouraging repetition of the visits, collecting accurate visitor data, reacting faster to marketplace trends, identifying and targeting customers, reducing cost of new customer acquisition, enhancing customer retention and raising destination brand loyalty. As Manager R3 stated *"Nowadays we face an intense competition from other destinations while at the same time tourists worldwide become more and more demanding. A key strength against other competitors lies in the personal relationships with our guests"*. Manager R7 mentioned that *"...we have loyal visitors who come to our area for more than 30 consecutive years. We know them and they know us, we consider them more as friends than as customers"*. A common practice for the administrations interviewed is to reward their loyal visitors with commemorative awards and presents. *"It is something so simple for us but so important for them!"* (R7).

In the second part of the interviews, marketing managers were asked about their perceptions of the proposed CRM system. It is important to mention that their first reaction after the system demonstration was quite positive. All managers agreed that the proposed system could be a part of their overall CRM strategy in a time when *"...we are looking for new innovative and cost-effective ways of marketing"* (R1). As they mentioned, the interactive nature of the system makes it an ideal source for gathering qualitative customer data, such as life-stage, lifestyle, socio-demographic and behavioral data. They were especially interested in the system's metrics that can be effectively used for market segmentation and targeting strategies. Furthermore, they found quite interesting the fact that the proposed system exploits a medium, digital TV which so far they were not taken advantage of. However, although the potential of the system as a strategic interactive communication medium was identified, some concerns raised by the managers.

The first concern was about the system's ease-of-use. Specifically, three of the managers (the younger) found the system's architecture and operation quite simple. Obviously, people are not all the same; rather, they differ both in personal dispositions and in acquired knowledge. This result may be explained previous studies, suggesting that individual factors such as computer self-efficacy, innovativeness, and computer experience could positively influence CRM perceived ease-of-use [14]. These individual characteristics apparently have a significant effect on the way managers perceive this new CRM system and, subsequently, on their desire to accept it. The findings clearly demonstrate that the younger and more innovative managers, who probably are early adopters of new technological innovations, are more likely to adopt the

proposed system. It was obvious that the other four managers needed more information to better understand system's operations. They wondered about the possible training needs on the system usage. Specifically, Manager R5 concerned about the new tasks and responsibilities that the system could mean for his department, as "...we suffer by lack of skilled personnel".

The second concern had to do with the digital TV penetration rate in the target markets. According to managers, a high level of digital TV usage among population of the countries where their visitors come from is a prerequisite for the success of the system. This comment does not refer to Crete's traditional markets of the West Europe (i.e. Great Britain, Germany, France) where the digital TV penetration is high nor Greece (as domestic tourism is continuously reducing due to the economic recession in the country) but mostly to the rising tourist markets such as Russia and Israel for which the knowledge about the level of digital TV usage is limited. Furthermore, managers suggested the application of the proposed CRM system on mobile devices, as "*mobile tourism is the future way of travelling*" (R4).

The final concern was about the cost of implementation of such a system. The majority of the managers commented that marketing departments today are under increasing pressure to demonstrate cost effectiveness and evidence the additional value, which accrues from their marketing interventions. "*Today, public sector cuts in our funding are requiring us to seek greater value in the way marketing budgets are spent*" (R3). Obviously, in order to agree and commit on any technology investment and application, organizations require hard evidence about the return on investment (ROI).

Overall, the findings from the in-depth interviews revealed that marketing managers' attitudes and views for the proposed CRM system depends on factors such as their perceived ease-of-use and perceived usefulness of the system. The findings confirm previous research, concluded that people who believe that a CRM system is easy-to-use and useful will tend to hold a more positive attitude towards the system [14]. This conclusion is not surprising when considering the findings of previous studies examining the factors affecting the adoption of technologies (e.g. Technology Acceptance Model). It is reasonable to expect that a marketing manager that feels satisfied with the information that the CRM system provides, regarding his customer profiles, will use and finally accept the system, since he expects that using the system will help him to better perform his tasks.

VII. CONCLUSION

This paper elaborates on the study of IMS, as a promising solution, that may be adopted in next generation networks and iDTV systems, providing advanced capabilities and added value services. Taking into account advances in both research fields, this paper proposes a technology convergence model, which may result to a novel research paradigm, able to be adopted in CRM by DMOs. In an unstable and unpredictable

environment of doing business at the tourist sector, characterized by strong competition and sophisticated demand, implementation of CRM concept with focus at development of high quality relationships with consumers and stakeholders is becoming imperative of gaining a competitive advantage. Ensuring guests' satisfaction is a sure way to make current customers loyal and attract potential ones. The overall target of CRM is to enable marketers to track existing and potential customers' preferences and subsequently give them superior value via customized service. The proposed concept may enable for a more efficient process of collecting and analyzing feedback data from viewers, which is vital for optimum marketing purposes. It might be the answer to the one of the top priorities in the marketers' wishing list; to move forward to one-to-one marketing communication with the desired audience, gain their attention and interest, create their desire and end in the covetable impulse or well thought-out action of buying. Finally, the findings of the in-depth interviews that were conducted in a sample of DMO marketing managers showed that the proposed CRM system could have application in their CRM strategy, providing an effective solution for gathering qualitative customer data in a medium, digital TV, which so far they were not taken advantage of.

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