Surf On Classifieds (SOC) : Electronic Commerce for Classified Advertising on Internet

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ABSTRACT

This paper presents a prototype application of Electronic Commerce developed for promoting Classified Ads either for a publishing organization or an autonomous organization. The application provides the basic services and characteristics offered by a standard system of classified ads, but, in addition, it permits new ways of interacting with customers, advertisers and other competitors; it provides publishers with the ability to use multimedia characteristics for the ads, involving text, sound, visuals and photographs; it keeps user's profiling and behavior towards classified advertising. This application offers an advanced service in the classifieds area, as it is intelligent enough to adapt to the customers' requirements, being based on their remarks and their preferences.

THE BUSINESS CASE OF CLASSIFIED ADVERTISING OVER INTERNET

Due to the popularity of Web as being one of the most attractive, quick and direct way to access information coming all over the world, the acquisition of a web presence constitutes the desirable perspective for every newspaper aiming at improving its performance and appeal and increasing its customers. Nowadays, there are many publishing organizations that provide on-line access to their content, including classifieds.

Moreover, International business, including advertising, now account for more than 10 percent of domestic production in almost every industrialized country. The percentage is growing, indicating the need for all firms, including newspapers, to participate in this evolution by displaying internationally their content [1].

Finally, the flourishing business model of a Virtual Enterprise has been adopted by many autonomous organizations that collect and advertise on-line ads coming from different publishing organizations [2].

A major priority for publishing organizations is the development of a quick search mechanism for the readers of classified ads. Nevertheless, some systems have expanded classified services by placing, updating and deleting a classified, in keeping information for their visitors and building a personal contact between customers and advertisers.

Although it is a common sense for most publishing organizations that their presence on Web will improve their performance in short-term and their profits in long-term, there are some risks to be especially considered for the newspapers of low-level popularity.

- **Demand Risk** : The globalization of the world market and the increasing deregulation expose newspapers to greater levels of competition and magnify the threat of demand risk. To counter it, print firms need to be flexible, adaptive and continually stimulate demand for their classifieds.
- **Innovation Risk** : In an era of accelerating technological development, firms that fail to continually improve their products and services are likely to lose market share to competitors.
- **Inefficiency Risk** : Failing to match competitors' unit costs - inefficiency risk - is the third challenge. A major potential use of Internet is going to lower costs only by distributing electronically as much information as possible [3].

Despite of these risks, there are some not negligible motives for all newspapers desiring an international advertisement of their classifieds.

- Internet provides both customers and suppliers with the ability of on-line search, placement, update and deletion of classified ads, so that they can immediately be served.
- Individuals access ads at their own time and pace.
- Internet provides customers with a variety of products and services coming from all over the world and enables advertisers to override their local boundaries and get advertised internationally.
- Revenue from online advertising is expected to reach USD15 billion by 2003, a tenfold increase from todays estimates [4].
- Internet allows for more convenient and immediate response to advertising.
- Internet enables newspapers to build a personal relationship with customers, in order to retain customer loyalty.

THE PROPOSED MODEL

The prototype application is the result of an investigation upon the functionality of similar applications on Web and the necessity of print media to follow the new technological methods of getting advertised and, thus, offer new advanced services to their customers. It lays its

foundations on an innovative architecture, which can meet all the requirements of a candidate user or builder of a similar application on Web.

The system facilitates the work of four different types of users involved in a system of classifieds; Guest, Customer (candidate vendor or buyer), Publisher (an independent person or a company or a newspaper) and Administrator of the application.

According to the above classification, the application is divided in four subsystems: Guest's Subsystem, Customer's Subsystem, Advertiser's Subsystem and Administrator's Subsystem. Their role are discrete, as they correspond to different demands, but all of them provide the best possible service.

Guest's Subsystem

As guest can be considered any user that visits this Internet site in order to search classifieds. The only service offered to him is the use of advanced search mechanisms for detecting classified ads.

Customer's Subsystem

As customer is considered any candidate buyer searching for a classified matching his requirements. The services offered to him are :

- Registration
- Search of classified ads
- Submission of preferences
- Additional Services such as e-mail communication, guestbook for remarks, links to other sites etc.

Publisher's Subsystem

This subsystem is designed in order to provide its services to any publisher who desires to promote his products and services internationally. Any person, company or newspaper can play this role. The services offered to the publishers are :

- Registration
- Placement of new classified ads
- Update and Deletion of classified ads
- E-mail communication with the administrator

Administrator's Subsystem

It includes all necessary services oriented to facilitate the administrator in managing the other subsystems and the information stored in the application's database. This subsystem is very important for the administrator in order to manipulate the data and control the actions of customers or advertisers that are involved in this application. More particularly, it includes :

- Control on classified ad's validation
- Drawing the Charging Policy
- Complete and exclusive management of the customers' and publishers' records
- Building a list of predefined values, such as ad's category, ad's subcategory and ad's special characteristics.

IMPLEMENTING AND USING SOC SYSTEM

The SOC system displays an innovative architecture which is developed in order to support any effort of building an efficient and integrated system of classified advertising. The three fundamental components of this architecture Internet, Web Server, Database are combined in order to offer a dynamic E-Commerce application to the End Users. The architecture of the SOC, which is depicted in figure 1, has a three - tier approach, consisting of the data, application and presentation layer.

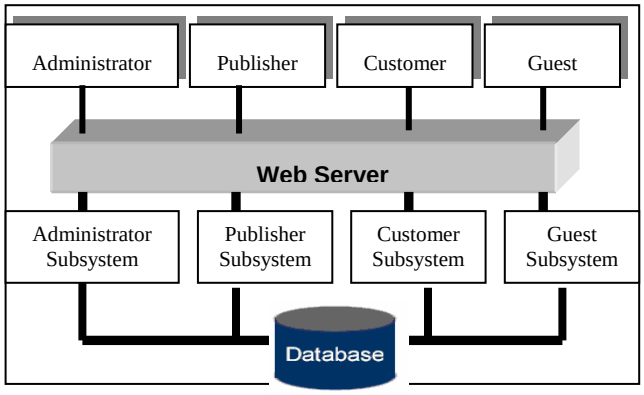

Figure 1 : SOC's Architecture

- **Data Layer,** which refers to the database of the system containing all the information related to the classified system.
- **Application Layer**, which refers to the functionality of the application and consists of the above 4 subsystems.
- **Presentation Layer**, which consists of the Web Server, connected to the application layer mentioned above. The Web Server provides the necessary information as well as access to the application through the Internet to all interested parties (customers, publishers, guests, administrator)

The three-tier architecture described above is based on the Internet Computing Architecture of ORACLE and is aligned with the International standards and trends on the current development of Internet based Electronic Commerce Applications. The OMG (Object management group), CommerceNET are some of the research organisations which have developed frameworks for Ecommerce and encompass the above mentioned architecture [5,6]. The systems architecure complies with the currecnt status of Ecom frameworks [7,8] and is considered as state of the art in web based application development.

It must be emphasized that the adoption of this model architecture constitutes the guarantee of quality and efficiency for any application of classified advertising. The benefits emerging from the adoption of this architecture are described below.

- The usage of a database assures the development of a dynamic application.
- The development of an user-friendly environment.
- The development of different subsystems reflects the distinction among the variety of services offered by a newspaper.
- Application's efficiency is increased due to the ability of on-line placement and search of an ad.
- The specialized services offered by the application improve its quality.
- The automation of system's operations facilitates its adjustment to the users' requirements.

CONCLUSIONS

SOC demostrates not only a model architecture but also some innovative characteristics and services in comparison with the other applications in the area of Web classified advertising. Most of the application's innovative components owe their existence to its dynamic character and particularly to its facility in adapting to customer's demands, authorizing administrator to intervene and improve sensibly the application's operations and profile towards its users.

Innovation in administrator's authorities

In the majority of Systems on Classified Advertising, administrator's services are restricted to manage database's existent records. This application authorizes administrators to insert new categories and subcategories of classifieds, or even change or delete the existent ones, after customers' demand. Every classified has some special characteristics in relation to the subcategory in which it belongs. These characteristics are specified by administrator, who is permitted to change, delete them or insert new ones.

Innovation in the services provided to the user

Every time that an advertiser places a new classified, he is asked to insert values in some fields that are common for all classifieds and optionally values related to specific categories. These fields are dynamically maintained by the system administrator who can revise them to reflect changes in publication policy.

The model application SOC permits the usage of multimedia for the promotion of classifieds. Thus, advertiser is allowed to insert not only text but also an image, video or even a site's address in which customers can find more detailed information about the particular classified.

While only a few systems on Web offer the possibility of using the region as primate criterion for searching classifieds, this prototype application has introduced a map with all possible regions of classifieds. Thus, customer has only to select an area on map and all classifieds concerning this area will be presented. The usage of map is offered not only as a primate criterion, but also as a secondary criterion, after customer has selected the category and subcategory of the classified demanded.

The application SOC is developed under the perspective of providing services according to its customers' demands and get continually adjusted to their altering preferences. Thus, it has predicted the storage of customers' personal information in order to elaborate them and extract useful deductions about their habits, their occupation and in extension their behavior towards the application. These deductions are made available through statistical reports that are presented in the application's site.

In order to facilitate customers and eliminate the time spent by them for searching classifieds, the developers of this model has provided the storage for each customer of his last search criteria. Thus, the next time that the customer will visit application's home page, a number of new classifieds that meet his stored criteria will be presented, without having to make a new search for finding them. This is an innovative service which aims at rendering customer more familiar to this application, as he obtains the sense of receiving a particular treatment.

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