Decision-making system in E-marketing strategies

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Abstract

The project aims the marketing process from the moment when the customer interact with marketing environment until the construction of new marketing strategies to enable sales and gain the customer loyalty, qualities absolutely necessary for the existence and profitability of business. That for, in developing process it was concluded that the use of applications based on threads is more expensive in terms of query time, effort and updating user data, than if it would use a system based on intelligent agents.

All this led to the development of an applications based on intelligent agents that is easy to use and exclude the detailed reports and cumbersome.

1   Introduction

Given that we live in a world in constant motion, a world where time is the main problem, the present application is built precisely as an alternative to this problem in the banking field. It is known that in banks, as large firms, the size of the database is a reasonable size, therefore, browsing and extracting data representing their interests is a problem. Thus, the present application comes with the following improvements: not only that the data are strictly filtered to obtain what it seeks, in this case that speaks about marketing on the Internet (E-Marketing), data are taken very on the market where the company operates, generating a double advantage: market knowledge and improvement of the marketing plan. The first approach to bank marketing evolution is performed by Philip Kotler. It involves five steps, which were identified according to the diversity and effectiveness of marketing techniques implemented.

- The first stage is designed as a bank marketing technique of advertising and sales promotion, image banks (providing small gifts, but useful: umbrellas, flashlights, pens.). The emphasis is on friendly atmosphere within the bank.

- In the second phase of banking marketing is defined as relaxed smile - to stop officers are trained how to have a more open attitude towards the customers. Is rearranged so that the

interior banks to be more pleasant atmosphere and the outside is "humanized"
Benevolence has ceased to be the deciding factor in choosing a bank.

- In the third stage of development, marketing segmentation and upgrading banking means. Banks have discovered a new competitive tool when they began to segment their markets and develop new products for each target market segment.

So what keeps the bank's ability to develop new products continuously determines the position of market leader. Marketing has entered the insurance and investment services. Innovations have resulted in widening globalization of financial markets and banking business through the provision of less traditional services and the use of information technologies and computer networks.
At the fourth stage, marketing means bank positioning. Banks realize that no commercial bank is unable to provide all products and be the best for all customers. It concludes that a bank must "occupy a specific position, taking account of its possibilities.

Client user interface design

It begins with the realization of user interface, and more specifically the Web Site.The first point is to be sought for interface design. To motivate customers to view the site presented is necessary, from choosing colors for presentation to the selection information to be presented.

Such colors were chosen that did not look tired (shades of blue, gray and white) and the information was compressed to avoid losing the essence when making customer interest to the attention of those present.

Another way to attract customers is interactivity and data are presented that not much effort on the part of customers to reach the desired information.

One can easily see how the environment and efficient way scroll to the desired benchmark. This presentation is especially necessary if speaking of a world in constant motion in time is most precious.

2   User Interface as marketing component

In terms of marketing, creating and developing a web site but should have to support the existence of specific needs, specific, related in most of the way marketing communication takes place to the bank

It is important to note that in general, it does not create products, does not set prices, not ships products to the recipient, not make the bank's reputation doubles and triples sales.

The website can contribute significantly to the manner in which the organization makes the exchange of information or marketing environment, mainly with customers (and potential) and its competitors.

In the first case is about providing a volume of information attractive enough to cause a favorable reaction to clients: marketing buying or ordering products (loans) promoted or at least request additional information about them.

In the second case is about differentiating the bank in relation to its competitors in general and especially in terms of marketing communications.

Interface provides access from the first page of this information by following the user to view what you are looking for.

It is easy to understand why they are made for, from the first page of this information, namely that, especially for banking institutions, the legislation is very thorough and contains clauses which are omitted may result in the existence of disputes between customer and bank, even the loss credibitatii to customers.

3 User interface design - marketing specialist

3.1. Marketing strategies that results from database

The application itself is built to develop marketing strategies to differentiate between firms in the market, ie between banks.

This starts from the idea of knowledge by understanding the market segment of its characteristics: the size of this segment, placing the physical market, etc..

To know this requires a market study and that study is better than their own resources.

Therefore intended to provide some queries in the database are recorded data from customers. This process is the result of a program in Java programming language that allows data to obtain a result of queries.

Thus was born the MDC, that means Developer Marketing Strategies application.

If you wish to obtain a marketing report, you must follow several steps:

Step 1: After the opening application type is determined by the person whose address query.

If it is an individual process is as follows:

a) click on the individual in open dialogue with fields that query is:

b) Once open dialogue, make default in the analysis fields as required.

As it can be seen, the dialog box fields are of two types: text fields and fields of type list.

In text fields, the user must fill in the analysis is done by allowing it to leave the fields blank.

If field-list to choose according to existing data in database does.

c) After completing field Query button is pressed the query but does not send data to open a box that allows a return to the current box by pressing NO, or the query itself, by pressing YES.
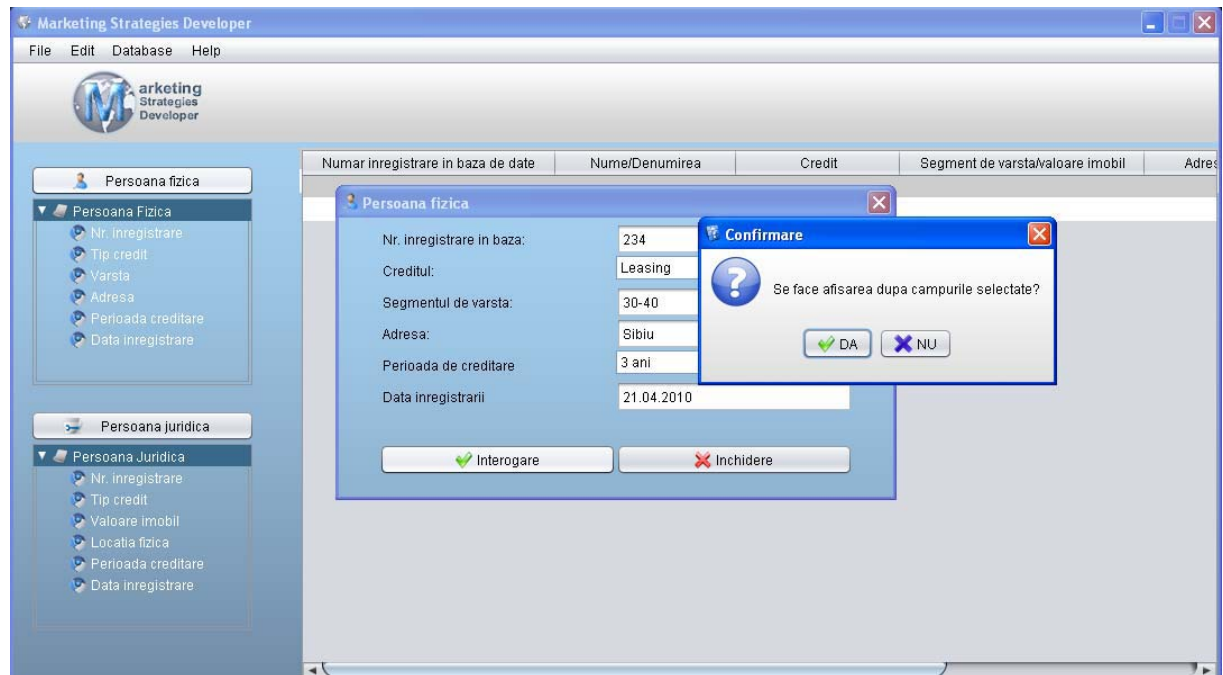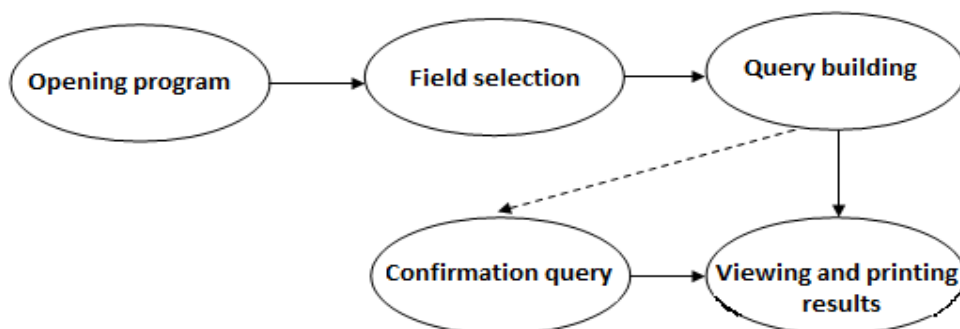

Figure 3.1. Confirmation of the current query..

d) After the interrogation, is displayed in the table in the main window, the result according to records in the data.

Step 2: When the fields were generated in the table, you can choose Save As from the File menu option to save the results into a text document.

These steps can be schematically represented as follows:

It may be noted that ease of use application and the user is assisted at every step to avoid mistakes from queries.

3.2.Marketing reports

The core of any marketing information system is the repository for the data center. They contain solid information on all customers and potential customers. For the sake of brevity, in this paper uses the generic term for a specific site database where information is stored. In addition, to gain maximum advantage by exploiting this information is necessary for each system to provide reliable and documented data on targeted markets and customers.

Applications for marketing uses information from the database of clients, but there are some features of this system functions:

- Making simultaneous queries in multiple tables;

- Queries made by a serial number placed in the database;

- Displaying tabular results of queries;

- Enabling the rescue of the results;

The main advantage of the customers is that provides a comprehensive picture of business relations with a client or group of customers. This overview allows a deeper understanding of consumer behavior and market in general, a point of departure, among others, marketing research, especially in studying the market.

The main characteristic of the system lies in the possibility of handling large volumes of information from various sources, internal and external, in order to develop models of market segments or commercial behavior. Analysis reports can be quickly generated, modeled and saved for future use, and business plans and scenarios improved and refined.

4   A new approach - intelligent agents

When architecture development concluded that the use of applications based on threads is more expensive in terms of query time, effort and updating user data, unless they would use a system based intelligent agents.

So, was concluted that is better to develop five intelligent agents:
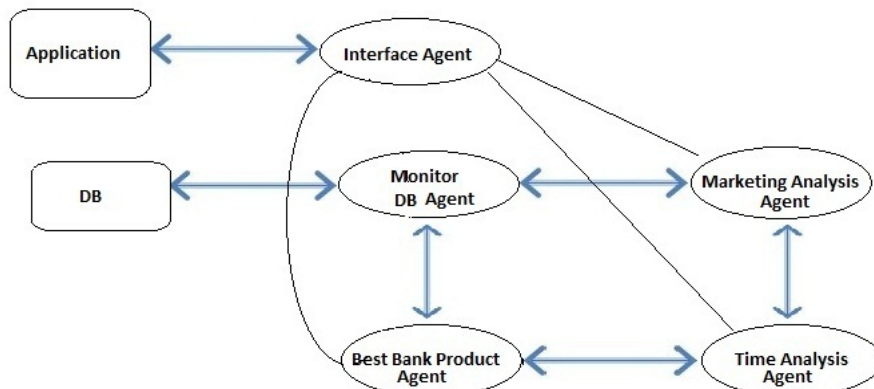
Figure 3.2. Agencies working with database

As it can be seen from the figure above, agents are interconditioned and connect database agents and agent application is done using the interface.

> It collects information from other agents and bring them into the application date:
> DB Monitor Agent monitors inputs, outputs and changes in the database;
> Product Best Agent Bank determines which product is most used;
> Analysis Marketing Agent determines increased or decreased interest as recorded in DB for a period of time;
> Time Analysis Agent monitors travel time from the last inspection;

The four agents mentioned above are active throughout the existence of the database. They continuously monitors the database and interface with the agent in topical bring results.

It can be seen that the need to achieve ease of use and exclusion of detailed reports and cumbersome.

Regarding the Marketing Agent Analysis should be noted that it establishes increased or decreased interest in receiving the DB Agent Monitor the number of credits in a period.

For exemple, let's asume the following situaton:

Credit for personal needs	Mortgage	Real estate loan
Prediction: -for 300 demands in 30 days: interest is 15%	**Prediction:** - for 50 demands in 30 days : interest is 18%	**Prediction:** - for 60 demands in 30 days : interest is 15%
Possible situations: - for less than 300 demands in 30 days : interest is also 15% - for less than 200 demands interest is 14% - for less than 100 demands interest is 13%	**Possible situations:** - for less than 50 demands : interest is also 18% - for less than 35 demands : interest is 16% - for less than 15 demands : interest is 15%	**Possible situations:** - for less than 60 demands : interest is 16% - for less than 40 demands : interest is 15% - for less than 20 demands : interest is 14%

The agent will known witch is the best decision that the bank have profit and to hierest the number of clients.

Those fluctuations can be realised without an human agent intervention.

4.1 Application design

The developement of the application is based on the ideea of frendly using of an interface like in the next image:
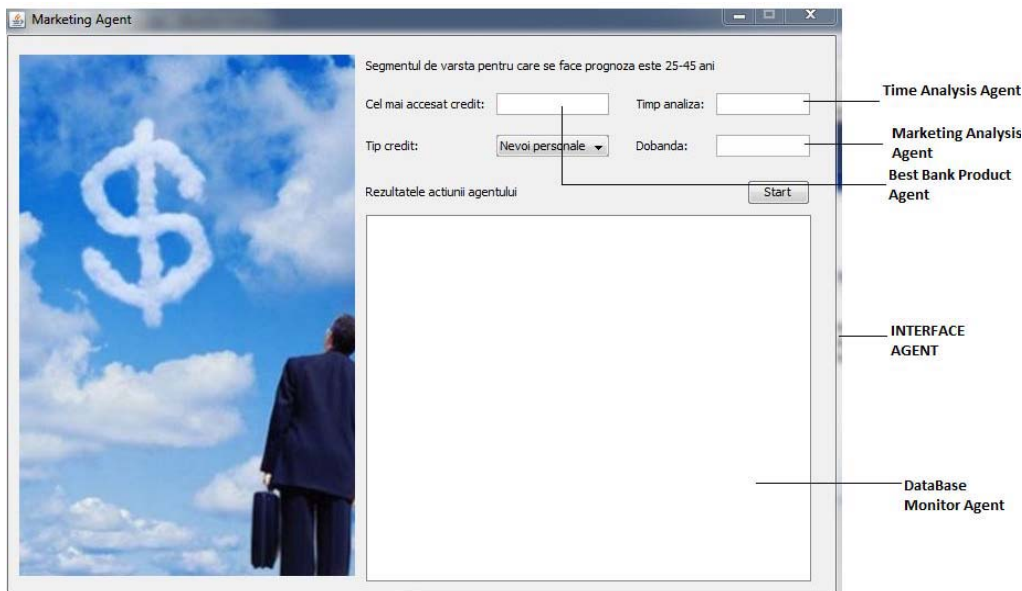
Interface agent-oriented will display the results of all the others agents and they, also, can be activated sequential or simultanuous.

A fiew **advantages** that an aplication based on intelligent agents have , comparring with the one based on threads:

1. Cooperation between agents: marketing analysis is made (*information is gathered from DB*) by an assistant agent which interacts (through ACL messages) with specialized agents: an agent who establishes, for example, increasing or decreasing rates, an agent which settles the most attractive bank product (loan), an JDBC-based *transducer agent* which serves as an interface between the database server and the other agents in the system, etc.
2. Another advantage is the continuous monitoring of the DB, which makes possible recording fluctuations and storing them for later reporting to the assistant agent. This is not possible using an application based on threads.

    Specialized agents are autonomous, and their life cycle is not related to the running time of the marketing analysis application. It may be recalled that these agents are independent of the application, so they can monitor the DB after stopping the application and even before starting the application.

3. Agents are reactive, providing information by request, and proactive, signaling when some conditions are accomplished.

4.2   Futures developing

As future developing, it can be said that boath aplications will be part of one to optmize the results, to add more functionalities and assistance on the process duration.

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