

Online scoring; a missing link in customer relationship management

Gert Haanstra en Melbert van Emmerik, Journal of Database Marketing, Henry Stewart Publications, Londen, Vol 7, number 3, 1999, pages 275 - 279

In this paper we describe a new kind of decision support technique for cross selling clients in interactive media. This so called 'online scoring' predicts client behavior real-time as opposed to pre-scoring, and suggests the call centre agent to sell a specific product. In addition, we evaluate an implementation in a customer relationship management solution and provide a framework for implementing online score models.

Introduction

The combination of data mining and campaign management has rapidly emerged as a powerful technique in customer relationship management. However, one-to-one marketing is not possible/feasible yet because of the lack of interactivity based on information in the database. In a already advanced setting clients who contact a call centre or the internet get an offer based on profile information. Different customer profiles fit into different campaigns. When a client is identified the contact management system will match his profile to the different campaigns. The customer gets an offer associated with the campaign the best suits his profile. Up to this moment the offer is based on past interactions and knowledge available in the marketing database. But people search contact for a reason. He wants to withdraw money, files a complain or requests information. This very relevant information is not available at the time of the profile scoring process. So the in advance suggested campaign might not be the best move anymore. With online scoring not only the pre-available information will be the basis for profiling, but also the newly acquired information during the contact at present. Therefore online scoring is indispensable for optimising the effectivity of different client contacts and increasing the efficiency of using interactive distribution channels.

In essence, using online scoring means that the communication with clients will move from a monologue to a dialogue. If necessary information about a client is available, an effective dialogue can be established. Such a dialogue means that the client will get insight in one's production process, and will get the feeling he can influence it directly. Result will be an increase of customer satisfaction, en strongly related to that, a long time relationship with your clients. Therefore using online scoring gives one the opportunity to acquire customer effectively, and building successful relationships with most profitable customers, and to maintain their loyalty and profitability.

On-line scoring and CRM

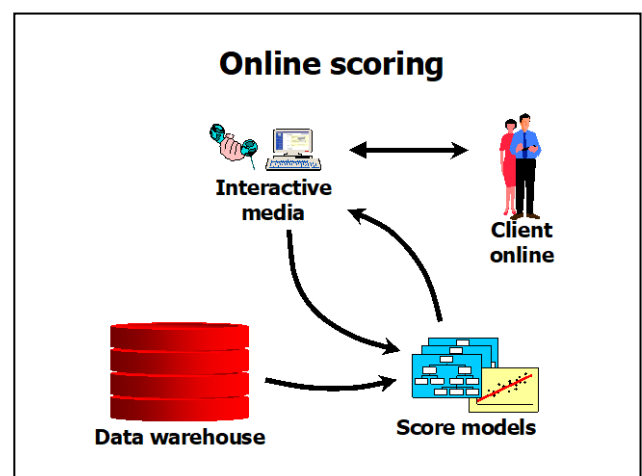
Generally, customer relationship management is about building close relationships with current and potential customers. Companies try to know their (potential) customers, and want to understand what their customers want. As a result companies can offer products or services that best match the needs of their clients. Data mining is used for understanding customer behaviour by analysing data, identifying ways to serve customers better by testing and evaluating a range of possible (personalised) campaigns. As best they can, companies try to satisfy their needs through personalised service. As a result, they expect to earn loyalty and a large share of their customers' share of wallet. Campaign management is used to develop, execute, monitor and evaluate customer campaigns in order to encourage customers to develop a better relationship with the company.

Online scoring has the potential to immediately identify and use new cross sell opportunities based on predefined business goals and model definitions. It has therefore additional advantages compared to existing customer relation management solutions. Advantages of this method include the ability to (a) implement predictive modelling in interactive media (e.g., call centre, internet, voice-response media), (b) increase convergence rate by presenting most prioritised product offer, (c) focus on business objectives evoked by relevant score models, and (d) directly relate decision outcomes to business objectives.

An example

If the client uses the internet, he will receive a suggestion on what to buy. If he contacts a call centre, the agent will get a signal that suggests him what to sell. The suggestion for the agent consists of the product name (of the most likely product the client will buy), an indication of the expected success ranging from 0% (low) to 100% (high). In addition, the agent will be shown the reasons why the client would be interested in the suggested product (insight in the model). An agent decides what to do with the suggestion and also can use a predefined script and a description of the key features of the product.

More specific, a client contacts his bank. The moment the agent identifies the client, a first suggestion is calculated and presented immediately based on the current situation of the client. Then the new information acquired during the conversation is incorporated. If somebody withdraws his money from his saving account, obviously the score model should provide a different score compared to the case where the same person deposits money into his account. Therefore, during the conversation with the client, the models should be recalculated and the most appropriate action should be presented online within several seconds. So, by using on-line score models even the latest changes in the clients (financial) situation, his behaviour and preferences are taken into account when offering a new product to the client.

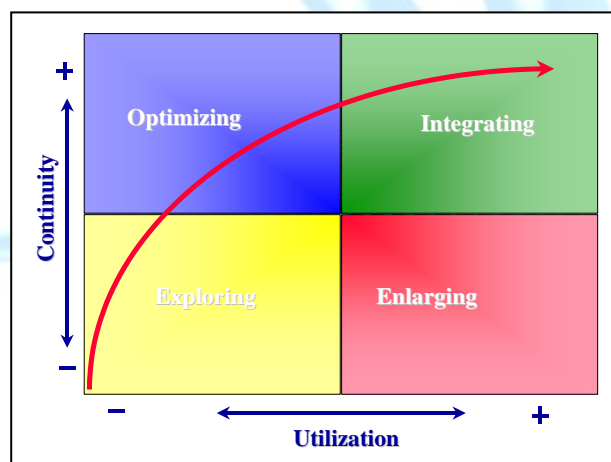


Of course not everybody is evenly suited for action. The best campaign for a specific customer might not have a very high success expectation. “Bad leads” for call-center agents should be avoided. In the end they might sabotage your system. Even worse, you don’t want to bother your customers with all sorts of offers all the time when you don’t expect them to respond. So in addition to scoring, you will want to set thresholds to scores below which no suggestions will be made. An experienced agent will get suggestions for offers with an expected change of success above 20%, whereas less experience agents only get suggestions for the most potential offers.

Development of online scoring

Online scoring is a result of the way data mining has developed itself in the marketing & sales process over the years. The ‘Exploring phase’ is used to find data mining opportunities, to learn about the processes involved, and to overcome the initial scepticism in using data mining by showing very impressive results. Companies become aware of the profits it can generate. They do some ad hoc research in order to find out about costs, profits, and expected organisational changes. Based on the results they will decide whether data mining can increase the effectivity of marketing and, in addition, if data mining is useful for finding new opportunities/segments in the database.

The next step is to bring continuity in using data mining; continuity in developing, using and evaluating score models. As a result, structural improvements of campaigns are established which provide companies a maximum of gains. This will often lead to building data warehouses (DWH) to offer quick and consistent input for data mining. In this stage all effort will be put into optimising the process of using data mining.



On the other hand, companies can prefer to enlarge the use of data mining for application to other fields instead of bringing continuity in their processes first. In this enlargement phase, on more fields results are gathered, which will prove that data mining has many opportunities.

As the process of data preparations is very time consuming, organisations choose ideally first the stage of optimising before they think about enlarging the possibilities of data mining. But sometimes the stage of enlargement will have to be preferred to get broader attention and hence more resources. All relevant information has to be gathered from operational databases, then data will have to be cleaned and merged. After that, new information will be derived through data manipulation and finally many fields will have to be recoded. Then the analysis file is ready for use. After the data mining process you will have to translate the

outcomes into business rules, score models or just plain scores. This will then be used for different kinds of campaigns.

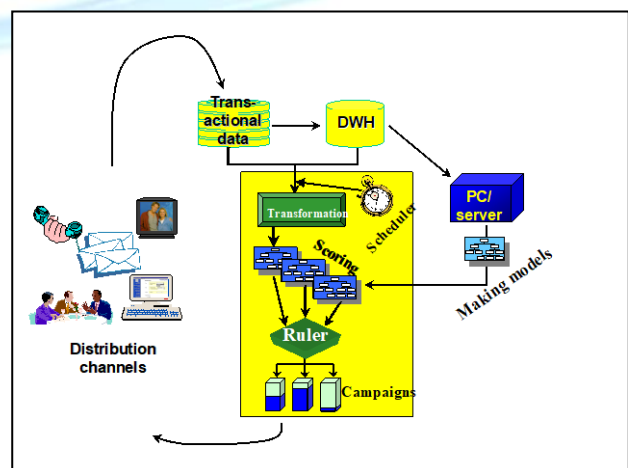
Either way, the next phase is to integrate data mining into the daily marketing & sales process ('Integration phase'). Therefore, (on-line) score models are brought to places where the cross selling actually takes place. E.g. marketers will use them in selecting prospects or selecting campaigns that best fit their customer's needs. Call centre agents will use them in their interaction with customers. So, decisions about what to offer to whom, via what channel and when, will be primarily based on data mining results.

Implementing online scoring in a CRM environment

Most companies have the operational data stored on a platform separated from their data warehouse. The reason lays in the fact the data warehouses are primarily used to offer raw, derived and summary data for analysis and reporting. By offering people this information on a separate platform, you don't have to concern yourself about the performance of operational databases. Beside the information did not have to be up-to-moment and therefore updates could easily be run through batch processes. When implementing online scoring this construction leaves us a challenge. A predictor in a certain model might be the 'number of deposits a customers has made during the last three months'. This predictor has been calculated by counting the number of deposits in that time frame from operational data. A change in operational data during an interaction could not be input for online scoring during that interaction with the regular up-date routines. An option could be that you don't use aggregated operational data that could change during the interaction session. This would largely reduce the amount of predictors that you could use in the score models. Another solution is to directly tap the newly acquired data into the data mining system so you could use it for recalculating the predictors and the models.

For building a score model, the following functionalities are needed in a data mining tool:

- 'data access' for flexible and dynamically updating tables from the data warehouse or/and transactional databases,
- 'data preparation' for aggregating data tables and creating user defined tables and variables,
- 'behavioural scoring' for creating and using score models for prospect selections,



Score models are transferred back into the DWH, and used in the campaign management for prospect selections.

Additionally, a campaign manager should have the following functionalities:

- 'event triggering' for detecting client life-cycle events,
- 'targeting system' for choosing / evaluating the best way to contact a client,
- 'scheduling' for atomising prospect selection,
- 'channel management' for distributing and co-ordinating several, multi-channel campaigns,
- 'decision support' for prioritising the use of score models and the use of distribution channels,
- 'reporting' for determining (financial) consequences of several campaigns and its influence on customer value.

Results of the campaigns are distributed to different channels. In a multi-channel situation clients can be contacted:

- Directly (e.g. mailings, door-drops, coupons),
- Differently (e.g. campaign A for client X and campaign B for client Z)
- Personally (e.g. franchise, brokers, retail),
- Massively (e.g. radio/tv-commercials, newspapers),
- Electronically (e.g. telephone, voice-response, sms),
- Interactively (e.g. e-mail, internet).

The client scores and campaigns for outbound contacts (mail, leads, calls) are calculated in batch processing. In batch, a scheduler is running jobs on historical data from the data warehouse. Automatically, the system will allocate customers to different campaigns.

For inbound contacts we use online data processing and online scoring, which means the data is up-to-moment and the scoring is done real time. In order to get the best prediction, actual information from the conversation taken place should be incorporated in the scoring. Therefore, if somebody withdraws money from his saving account, data should be transferred immediately to environment where the scoring takes place. And the scoring is done, starting the moment a client is identified.

Opportunities for on-line scoring

Expanding the possibilities of online scoring will contribute to building close relationships with your best customers. Key feature to success remains identifying and immediately using new opportunities.

- Acquiring new business: Instead of identifying a current client by his client-number stored in the DWH, a potential customer can be identified by his postal-coding. One can predict what product to suggest, based on geographical information.
- Customer selection: For example, models for credit scoring can be implemented for selecting customers that suit the product characteristics, instead of offering a product to everyone.

- Customer extension: In order to increase the loyalty and the profitability of your customers, the most profitable customers can be identified. For example; these customers could get a VIP-treatment from your call centre agents.
- Customer retention: Optimising payment collection, solving complaints, or tracing possible quitters are part of monitoring subscriber loyalty for keeping the customers for as long as possible.

Conclusion

Knowing what to sell the moment a (potential) client contacts you. In interactive media, the time between knowing what to do and the actual selling has to reduce from several days, or even weeks, to seconds. Online scoring provides such a solution, and is therefore indispensable for optimising the effectivity of different client contacts and increasing the efficiency of using interactive distribution channels. In addition, it has the opportunity in supporting building successful relationships with profitable customers, and to maintain their loyalty and profitability.

