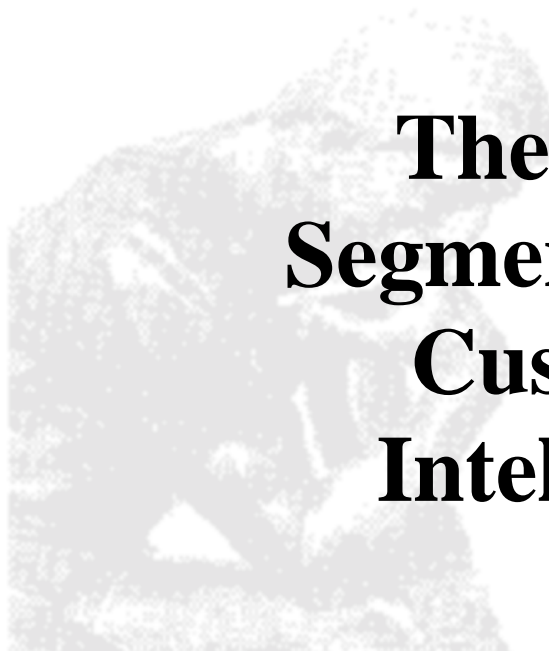


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The Use of Segmentation in Customer Intelligence

Accurate Business Solutions

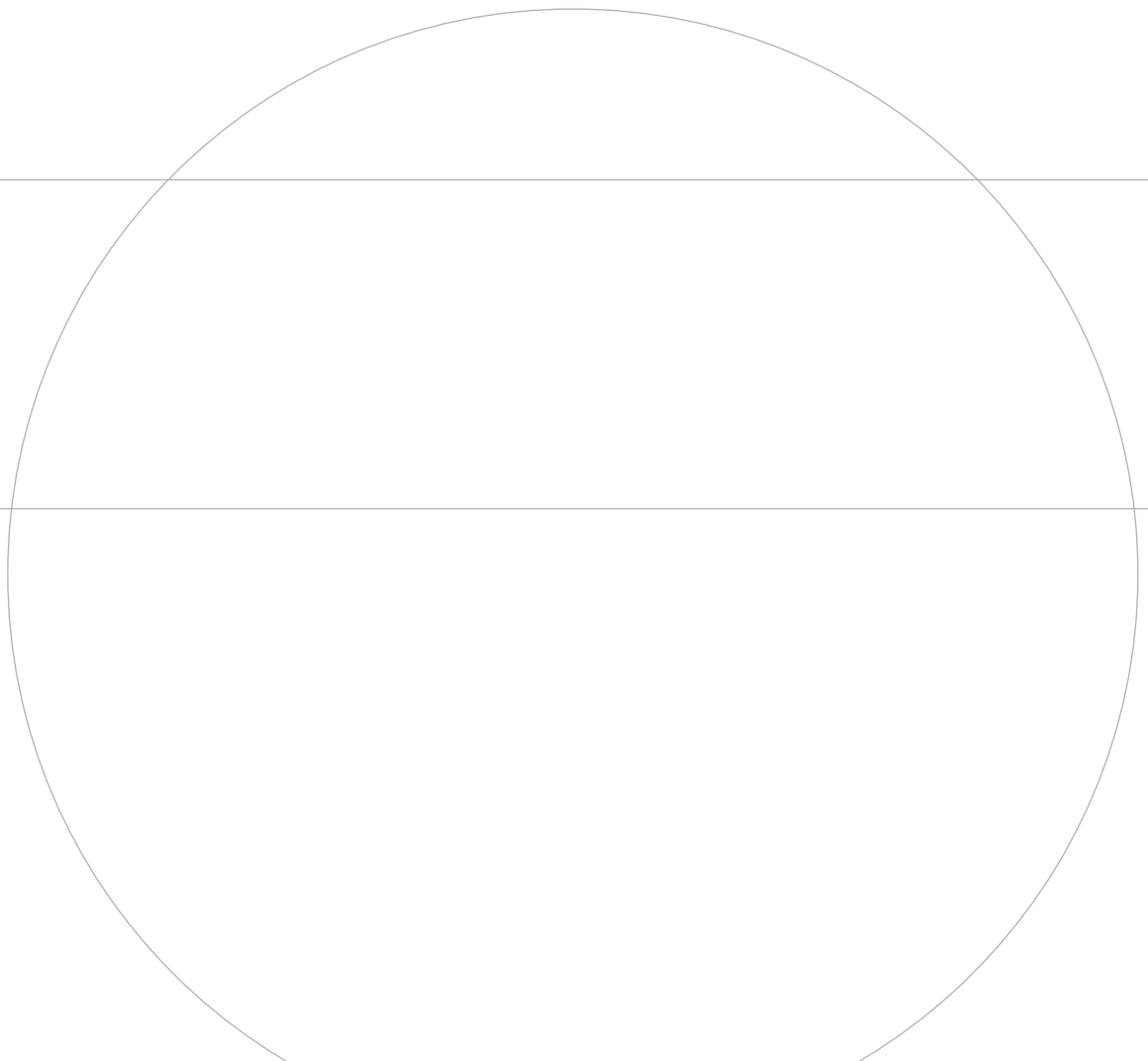
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Accurate Business Solutions Technical Briefing Paper

Maintaining customer relationships is key to business success in today's competitive environment. To build these relationships, organisations need to understand their customers better - and customer segmentation is a vital step towards this understanding.

Since a business, rather than a technology, expert performs segmentation, the tools that are used need to be both user-friendly and flexible. Even a tool with the power and usability of BusinessObjects does not necessarily provide the support to make segmentation modelling the 'train of thought' process that it needs to be. Business Objects has therefore announced the release of a new product, Set Analyzer.

This document discusses the application of Set Analyzer to the customer segmentation process and includes a real world case study. Although the Set Analyzer product is new to Business Objects, through its acquisition of the AnswerSets company, Accurate has been working with the AnswerSets technology since its launch. Accurate has many years of experience of implementing and supporting Business Objects' solutions for a wide range of blue-chip companies



Understanding Customers

With relentless competitive pressure currently being experienced in the financial services, retailing and telecommunications sectors, establishing customer intimacy to maintain the customer relationship has become a critical issue for business.

Building these relationships profitably depends on treating different customers differently. An organisation must understand the history of its customers and their value to the business, both now and in the future, so that all interactions are appropriate and lead to the relationship being profitably developed over time.

Customer segmentation is the first step on the road to this level of understanding.

Customer Segmentation

Customer segmentation is a simple, yet powerful technique that aims to divide a group of all customers into smaller subgroups that share a number of properties in their relationship with the business. Figure 1 shows how the customer base is segmented by 'loyalty to the business' and 'value'. The measures of 'loyalty' and 'value' will depend on the exact nature of the business and an organisation's particular priorities. However, even with only four segments, it is obvious that these four groups ought to be given very different treatment.

A simple customer segmentation can be produced 'by hand', with the analysts exploring the data and applying their understanding of the business. As the analysts explore the data, they are able to start to construct a number of customer segments. Typically the process will begin with a business problem in mind and will attempt to determine which measures of a customer are important to an organisation's problem, and how the chosen measures can be used to segment the data. This is a highly iterative and experimental process, with the analysts constantly increasing their insight into the behaviour of the customers.

Business Benefits

A very significant part of the value of performing customer segmentation is in providing a common language that the entire business can use to talk about its customers. Indeed, segmentation is an excellent example of the way in which data can be turned into information. This information is relevant even to the most senior managers where a monthly board report, for example, could include the performance of the business by customer segment. Customers can then be tracked as they move from one segment to another, as their relationship with the business matures, or perhaps begins to go sour.

Market research can be carried out by segment, to determine not just what the customers are doing, but also why they are doing it. Customers in one segment with a similar geo-demographic profile to those in another higher value segment can be encouraged to migrate to the higher value segment. New and prospective customers can be matched with known customers based on geo-demographic information in order to include them in an existing segment and understand their likely future behaviour.

Practical Issues

The process of segmentation does present a number of practical difficulties for analysts. By its very nature, this type of work needs to be carried out by a business, not a technology expert. Unfortunately, user-friendly business tools may not provide any specific support to help an analyst construct queries and experiment with different approaches to segmentation.

In terms of a BusinessObjects report, to achieve figure 1, BusinessObjects would require four different queries and each one would need multiple conditions constraining it, for the measure of both loyalty and value. Assuming that an analyst wanted to extend the segmentation to include household income, the resulting segmentation would look like the example in figure 2, where the customer base is segmented into high and low income. This segmentation now requires eight queries, each one with multiple conditions. This hardly facilitates the kind of 'train of thought' analysis that is needed to create segmentation models.

When an analyst wants to perform some 'what if' analysis to see the effect on the models, obvious difficulties are encountered when amending eight interrelated queries. The situation becomes increasingly desperate as the analyst attempts to increase the number of variables and segments in the model.

The complexity of this ever-increasing number of queries also makes it difficult to track customers in a segment over time. As the customers' data changes, they may no longer fall inside the criteria of the original query for that segment – which makes any form of 'then and now' analysis very difficult. For example, the analyst may want to track the response of a segment of customers who have been targeted with a direct marketing campaign, or follow the changing composition of a particular segment over time.

In fact, a marketing analyst may have neither the time nor inclination to write his/her own queries. The tasks involved in retrieving customer records from the database and building queries for segmentation are often left to IT specialists, based on the analyst's specification of who should be in each segment. Not only does this increase the time needed to produce the segmentation model, but effectively precludes the analyst from iteratively refining the model. Time constraints will not allow for many cycles, and the analyst will lose his/her train of thought while waiting for models to be produced by IT support.

Set Analyzer

Using Set Analyzer, an analyst can specify the customers in a particular segment using an interactive 'set building' approach, rather than specifying the conditions on a query. This shift of emphasis means that the analyst adds customers to a set, rather than creating a long set of conditions that specify the set.

Set Analyzer provides a few simple operations:

- create a set
- add customers to the set
- remove customers from the set.

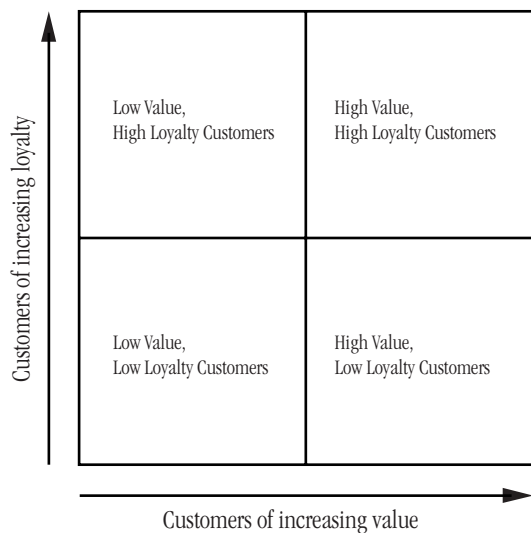


Figure 1:
Customer segments by customer value and loyalty

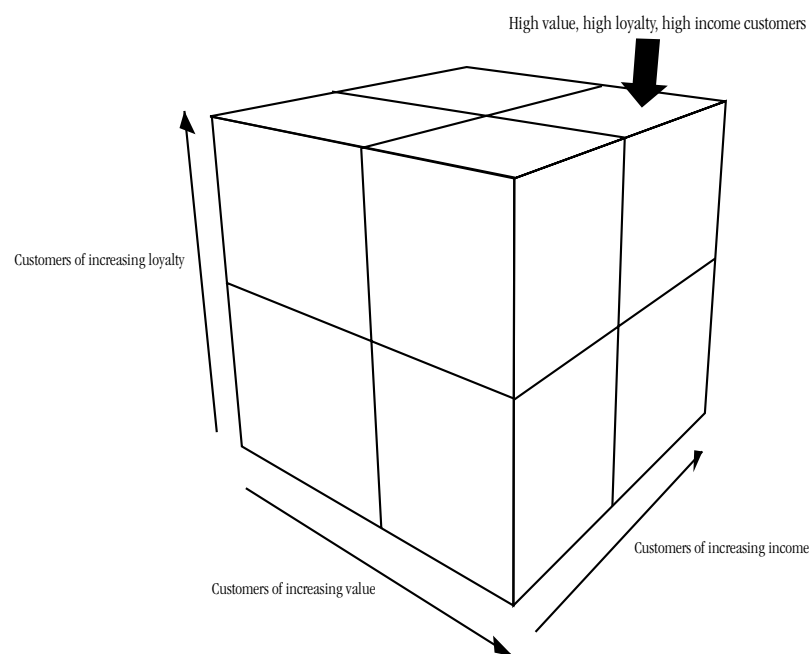


Figure 2:
Customer segments by customer value, loyalty and income

In this way, the analyst can quickly construct segments and explore those that seem to have business significance. Since Set Analyzer is oriented around sets, the analyst is also able to use powerful techniques from set theory. For example, a new segment can be quickly constructed for those customers who are present in both the high loyalty and high-income segments using the set intersection operation.

Set Analyzer makes these set operations available to the user through a familiar graphical interface. The analyst is able to select the customers who will populate the relevant segments, and perform any set operation with the click of a button. Much as with a BusinessObjects universe, Set Analyzer provides a level of abstraction between the user and the database which tailors the users' view of the data.

Due to the way Set Analyzer stores the results of the segmentation model, the segments can be 'frozen' in time to provide a snapshot at a later date. This allows the analyst to easily perform 'then and now' analysis. Set Analyzer seamlessly integrates with BusinessObjects – a set of customers that has been specified in Set Analyzer can simply become a condition in a BusinessObjects universe. This condition can then be used in the usual way in BusinessObjects queries. The analyst is now able to look in detail at the features of that set of customers.

Productivity and Quality

The technology behind Set Analyzer is able to leverage improvements in productivity and quality across a number of areas and an analyst can quickly build and experiment with customer segmentations. Not only does this result in increased turn-around in building the segments, but the final results are of a far higher quality.

Productivity is also drastically increased, since the analysts can now create segments themselves without having to construct complex BusinessObjects queries with many conditions. This 'short-circuit' in the process of building segments also means that the analyst is able to follow a train of thought to build the segmentation. Productivity gains of 30:1 have been reported, without even taking into account the improved quality of the result.

In a recent project, a UK high street bank implemented the Set Analyzer technology to replace its existing segmentation process, which was taking from four to six weeks to produce a result. Since the introduction of the Set Analyzer technology, this same process now only takes one to two weeks. These savings have been achieved by enabling the analysts themselves to build the models. Immeasurable improvements have also been achieved in the quality of the customer segmentations that the analysts can produce.