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# Measuring and managing customer value

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## Abstract

Customer value management (CVM) aims to improve the productivity of marketing activity, and the profitability of business by identifying the value of different customer segments and aligning marketing strategies, plans and resourcing accordingly. There are two complementary approaches to CVM. The first attempts to measure and evaluate the perceived value placed on goods/services by customers. This information is used as the basis of continuous review and improvement of those goods/services. The second approach measures the value of specific customers, or customer segments, to the organisation and uses this to tailor marketing activity. Addressed together these approaches ensure that both sides of a business relationship gain added value. This paper explains the concept of CVM and key issues in using it to drive more effective marketing activity.

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## Introduction

There are two complementary approaches to measuring and exploiting customer value. The first seeks to identify the “value” perceived by customers of the organisation’s goods and/or services. Where such value is “better” or “higher” than the perceived value of competitors’ offerings, the organisation has the potential to succeed in the marketplace. However, where customers place a higher value on competitors’ offerings, the organisation needs to take some action to maintain competitiveness.

The second approach is to measure the value that a customer (or a category of customer) brings into the organisation and use this as the basis of, for example, targeted marketing campaigns. This can work in two ways: using the knowledge of high value customers to offer them additional information or incentive to maintain their loyalty, or offering incentives to the lower value customers to try and move them into the high value category.

## Customer satisfaction

Since we have (allegedly) been through a “quality revolution”, products and services delivered to customers should be of appropriate quality, and we should have satisfied customers. Of course, the issue is not quite so simple. Raising quality – assuming it is done at all – can simply raise expectation levels; the net result may be no change in satisfaction levels. And, if course, satisfaction is not only based on perceived quality even if we define that as widely as possible; it is influenced by other factors – especially price.

Value can be defined simply as the ratio of perceived benefit to perceived cost.

Any simplistic approach to customer satisfaction measurement that fails to recognise the concept of value is likely to fail. It can be useful to ask customers to express their satisfaction – and many organisations do this using simple questionnaires with equally simple scoring systems. However, they tend to give a snapshot of the customer perception, and using such simple data as the basis of any time series is too unsophisticated to use as the basis of real, hard decision making. A recognition of this limitation has given rise to the concepts of “customer value”



(CV) and “customer value management” (CVM).

If we are to use CVM strategically, the first task is to identify the strategically important product/markets within each business unit; these are naturally the products/markets that will be prioritised. The next task is to understand what is important to the customer base within those product/markets.

At the most basic level, CVM relies on enhanced measurement of customer satisfaction incorporating price and value factors. Thus, CVM measures not just “satisfaction” with a product or service – i.e. the measure of “quality” – but also relates this satisfaction to the price paid to arrive at a measure of perceived value.

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It is necessary but not sufficient for effective CVM to measure the value perceptions of customers with our products/services; to gather a true picture, it is also necessary to measure the value perceptions of competitors’ customers to arrive at comparative assessments of value within a given market.

The customer value approach thus attempts to identify how people evaluate competing offerings – assuming that when they make their purchasing decisions, they do so with “value” as a key driver. This approach to value management also recognises that it is essential in identifying the “competitive value proposition” for a specific market segment, to examine the key non-price drivers of customer value relative to price. Once those key value drivers are identified, customer perceptions of company performance on these drivers becomes the means by which all competitors can be plotted on a competitive matrix to understand positioning within the product/market.

This requires the determination of answers to three basic questions:

- (1) What are the key factors that customers value when they choose between competing offerings in the marketplace?

- (2) How is the organisation’s performance rated on each factor relative to each of the main competitors?
- (3) What is the relative importance or weighting assigned (presumably intuitively) by customers to each of these components of customer value?

It is then possible to construct a weighted index of customer value for the company and its competitors and construct the competitive matrix.

A breakdown of this analysis by customer type also allows the organisation to assess the loyalty of the various parts of the customer base – and the degree to which that part of the customer base is vulnerable to competitive intrusion. The model can be further extended to assess and include quality metrics to complete the assessment of product attributes and their effect on customer satisfaction.

This stage of analysis aims to arrive at a shared understanding and agreement on the key product, service and price purchase criteria that influence customers’ purchasing and loyalty decisions. The next stage is to work towards an action plan to move forward and improve, since this assessment of the nature of the competitive position within the marketplace can then lead to a re-focusing of marketing campaigns, a better understanding of the potential of particular acquisitions, and even re-prioritising of capital investment. Thus CVM becomes the heart of organisational strategy, using this improved understanding of customer satisfaction to maximise the value delivered to target markets, to gain strategic advantage and to enhance profitability.

Much of the customer-related information may arise as a result of questionnaires and surveys. Obviously, if we are to use the results to drive strategic decision making, these must be well designed (with outside, expert help) and systematically issued and analysed. It is obviously important to prioritise customers in key markets – either because they are growing or shrinking, where the potential for gain is highest. It is useful to maintain a core set of questions – to ensure some comparison over time – but the inclusion of new, fresh questions also helps to keep the attention of those completing the survey.

To monitor and manage the survey/fieldwork quality effectively (especially when undertaken by an external agency), it is

important to consider the methodology and the quality standards that will be adopted (including the procedures for eliminating/minimising sampling and non-sampling errors).

Since we wish to repeat the data collection at regular intervals, it is of course important to recognise that customers (and especially potential customers) may resent questionnaires presented at frequent intervals. This can be prevented by using different samples from the same constituent groups. Since questionnaires and surveys are often best carried out in tandem with less structured ways of gathering information, a “focus group” approach can be used both to collect data and to reward contributors for their participation – perhaps simply by giving them a good dinner.

## Data mining

The alternative approach to customer value – that of identifying high value customers or customer categories – requires an organisation to evaluate collected data on past transactions to identify such customers. For large organisations, with a large customer base, this probably needs a data warehouse/data mining approach – as the basis of “database marketing”.

A data warehouse is simply a repository for relevant business data. While traditional databases primarily store current operational data, data warehouses consolidate data from multiple operational and external sources in order to attain an accurate, consolidated view of customers and the business.

Database marketing involves, first, the identification of market segments containing customers or prospects with high profit potential and, second, the building and execution of marketing campaigns that favourably impact the behaviour of these individuals.

The first task – that of identifying appropriate market segments – requires significant data about prospective customers and their buying behaviours. In theory, more data is the basis of better knowledge. In practice, however, very large data stores make analysis and understanding very difficult. This is where data mining software comes in. Data mining software automates the process of searching large volumes of data (using

standard statistical techniques as well as advanced technologies such as decision trees and even neural networks) to find patterns that are good predictors of – in this case – purchasing behaviours.

Data mining, by its simplest definition, automates the detection of relevant patterns in a database. For example, a pattern might indicate that married males with children are twice as likely to drive a particular sports car as married males with no children. If you are a marketing manager for a car (or car supplies/accessories) manufacturer, this somewhat surprising pattern could be very valuable.

However, data mining is not magic, nor is it a new phenomenon. For many years, statisticians have manually “mined” databases looking for statistically significant patterns. Today, the process is automated. Data mining uses well-established statistical and machine learning techniques to build models that predict customer behaviour. The technology enhances the procedure by automating the mining process, integrating it with commercial data warehouses, and presenting it in a relevant way for business users.

The leading data mining products, such as those from companies like SAS and IBM, are now significantly more than just modelling engines employing powerful algorithms. They now address broader business and technical issues, such as their integration into complex information technology environments.

If the appropriate source information exists in a data warehouse, data mining can extract it and use it to model customer activity. The aim is to identify patterns relevant to current business problems. Typical questions that data mining could be used to answer are:

- Which of our customers are most likely to terminate their cell-phone contract?
- What is the probability that a customer will purchase multiple items from our catalogue if we offer some form of incentive?
- Which potential customers are most likely to respond to a particular free gift promotion?

Answers to these questions can help retain customers and increase campaign response rates, which, in turn, increase buying, cross-selling and return on investment.

The hype around data mining, when it was first advanced as a commercial software

proposition, suggested that it would eliminate the need for statistical analysts to build predictive models. As ever, the hype failed to recognise reality. The value of such an analyst cannot be “automated out” of existence. Analysts are still needed to assess model results and validate the “reasonability” of the model predictions; the effectiveness of the entire procedure is dependent on the quality of the predictive model, itself dependent on the quality of data collected. The complexity of the model created typically depends on a number of factors, such as database size, the number of variables known about each customer, the kind of data mining algorithms used (a variable of the software adopted) and the modeller’s experience. Since data mining software lacks the human experience and intuition to recognise the difference between a relevant and an irrelevant correlation, statistical analysts remain in high demand.

Data mining helps marketing professionals improve their understanding of the behaviour of their customers and potential customers. This, in turn, allows them to target marketing campaigns more accurately and to align campaigns more closely with the needs, wants and attitudes of customers and prospects.

The behavioural models within the software are normally very simple. The prediction provided by a model is usually called a score. A score (typically a numerical value) is assigned to each record in the database and indicates the likelihood that the customer whose record has been scored will exhibit a particular behaviour.

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For example, if we are interested in “contract attrition”, a high score indicates that a customer is likely to cancel at the end of a contract term rather than renewing; a low score indicates the opposite.

After mining the data, the results are fed into campaign management software that manages the campaign directed at the defined market segments. In this example, the numerical values that indicate likely attrition

may be used to select the most appropriate prospects for a targeted marketing campaign.

“Traditional” database marketing systems have been used to enable companies to deliver to customers and prospects timely, pertinent, and coordinated messages and incentives (offers or gifts) that might influence buying decisions.

More recent campaign management systems go considerably further. They monitor and manage customer communications across multiple “touch-points”, such as direct mail, telemarketing, customer service, point-of-sale, e-mail and the Web. The software automates and integrates the planning, execution, assessment and refinement of possibly a large number of highly segmented campaigns running at a range of frequencies. The software can also run campaigns that are triggered in response to customer behaviour or specific events – such as the opening of a new account.

### **Integrating data mining and campaign management**

In the past, the feeding of data from one stage to another (data mining to campaign management) was carried out manually or at best by some simple form of data interface.

When the marketing manager decides to run a campaign based on the results of the scores established within the behavioural model furnished with information from the data mining activity, he or she often simply calls someone in the modelling team to get a file containing the database scores. This file is then input into, or merged with, the marketing database.

This process suffers from a number of disadvantages:

- It is difficult – if not impossible – to support a large number of closely targeted campaigns.
- It is too easy to make errors in the data transfer/input process – with unreliable results, and an imperfect campaign.

The process of scoring is typically quite inefficient. An entire database is usually scored, even though the resulting campaign is only applicable to a subset of customers. This results in wasted effort, and means that the process is too slow to be very flexible in support of highly stratified, multiple campaigns.

However, with the increasing advance of integrated systems, this linkage is now much more likely to be automated. With such linked systems, dynamic scoring becomes possible directly within the campaign management software. Rather than scoring an entire database, dynamic scoring works with only the required customer subsets, and only when needed.

For integration to work, the campaign management component needs to pass the definition of the defined campaign segment to the data mining application. For example, the marketing manager may define a campaign segment of high-income males between the ages of 25 and 35 living in the north-east. Through the integration of the two components, the data mining application can automatically restrict its analysis to database records containing just those characteristics. Then, selected scores from the resulting predictive model must flow seamlessly into the campaign module so that marketing can be targeted at prospects, within that segment, with high profit potential.

Thus, the marketing manager may construct a rule for a particular campaign which restructures promotional messages to customers where:

- $\text{Contract\_length\_outstanding} < 3$  (i.e. only customers who are near the end of their contract will be targeted).
- $\text{Average\_monthly\_spend} > 75$  (i.e. only “high spend” customers will receive the promotion).
- $\text{PromoA3\_score} > 1$  (i.e. in the particular predictive model designated as PromoA3, only those customers who exceed the score of 1 will be targeted: this is the threshold in the predictive model which suggests that targeted customers are more likely to respond positively).

The point of the predictive model is to ensure both that the campaign is likely to be successful and that it is cost effective. For example, if we are worried about customers switching to a competitor as they come to the end of a current contract, we could simply send out an offer to all of them that would offer some form of incentive to renew their contract with us. However, a majority of those customers would probably renew anyway – out of sheer inertia. The modelling exercise aims to limit the offer we make only to those customers most likely to switch their contracts to competitors.

## Conclusions

The integration of data mining and campaign management systems has significant advantages for a marketing department. It improves the effectiveness of campaigns and minimises the costs involved. Because the software system, once established, is flexible and fast, it allows scoring to be carried out and campaigns to be run with up-to-date customer data. This also ensures that marketing campaigns can be accelerated and allows the targeting of customers and prospects in advance of competitors.

Scoring within the model can take place only for records defined by the customer segment involved, eliminating the need to score the entire database. This helps keep pace with continuously running marketing campaigns with tight cycle times.

For the analysts, it means they can concentrate on the logic of the model, rather than having to get involved in the mundane tasks of data extraction and transfer; this uses more of their creative abilities and improves the building and interpreting of models.

The complementary approach of identifying customer perceptions of value allows parallel review of products/services to continuously improve the quality of offerings. An understanding of the marketplace perceptions of the company’s products, services and prices compared to the competition is of major importance in focusing time and money on the factors and business process that have the biggest impact on the competitive position.

“Value”, as we have seen, is an important concept. However, it should not be addressed in isolation. It is best addressed as one (important) factor in a coherent, multi-factor approach which also involves other performance measures such as income and expenditure reports, or economic value added for capital projects.

It is also important to recognise that, for example, a product offering which currently has low perceived value – but which is being sold in a growing market – offers high potential.

Achieving performance gains through CVM starts with people throughout the organisation having a shared understanding of the concept, with the organisation collecting the appropriate quantitative information, and then constructing analyses and models which

key members of the organisation accept as a true reflection of customer perceptions and market situations. As ever, this needs a “champion” amongst the senior management team.

This champion should continually reinforce the message – about the importance of CVM – by, for example, making it a regular agenda item at normal operational meetings along with the “standard” financial and operational information. One approach is to summarise the results of “value analysis” each quarter, along with information on the success of marketing campaigns based on such analysis,

and to present the information at the same time as the quarterly financial reports.

One advantage of CVM over other “softer” forms of customer-orientation is that the quantitative data involved in the process tends to satisfy those “hard-nosed” managers who like to act on facts and figures, rather than on intuition and hunches. This move towards performance metrics has been a general pattern throughout the last decade and CVM continues this trend. If increases in customer value can be shown to correlate with other improvements in output performance measures, the success of CVM is assured.