



# Gaining Business Intelligence

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# Gaining Business Intelligence

***A white paper on how companies should analyse customer data to gain better business intelligence and how they can use that knowledge.***

In an increasingly competitive world, using your client database smartly, to gain a better understanding of your number one asset – your customers – can make or break the success of your company.

Most companies use databases to store information about their current customers, previous customers, business partners, and potential customers. The challenge lies in finding a way to harness the useful information contained within these high volume databases in order to produce intelligent business solutions.

Business intelligence (BI) refers to the process for increasing the competitive advantage of a company by intelligent use of available data in decision-making. Business intelligence consists of sourcing the data, filtering out unimportant information, analysing the data, assessing the situation, developing solutions, analysing risks and then supporting the decisions made. This white paper describes the business intelligence process, some elementary methods of data mining, and how you can use business intelligence in your company.

## Database Enhancement

The first step towards gaining business intelligence is to start with a 'clean' database. Incomplete and inaccurate data invariably translate into incorrect management decisions. Duplicate data is also a problem as it can wrongly weigh management decisions to one side. Whilst a good quality database does not automatically lead to intelligent management decision-making, it is a pre-requisite for all types of analysis that attempt to elicit intelligent management. We could draw an analogy with cooking, where starting with the right ingredients does not guarantee you will bake a good cake, but there is very little chance you will bake a good cake if you start with the wrong set of ingredients.

One of the primary reasons companies do not fully realise the potential competitive advantages they can gain from their own databases is the lack of proper integration of datasets across departments. Even though all the information might reside within the company, it may remain elusive due to a fragmentation of the data across incompatible databases. Regrouping all internal data into a single dataset or a series of interconnected datasets could be the single most useful step a company might take towards providing a solid foundation on which quality business intelligence can be developed.

In some cases, data entry errors and/or missing data can also severely impair the quality of information that can be derived from corporate databases. Sorting these issues can range from very straightforward fixes (e.g. matching one list against another) to more time consuming processes (e.g. contacting all client companies to update contact details of individuals working there). Ideally, all inaccuracies should be weeded out of the databases. However limited time and monetary constraints dictate that you should bear in mind how this database will be used. The level of accuracy required will vary greatly depending on the expected use for that data.

Data cleansing and database integration can provide significant advantages for a company over the medium to long term. However, they are both extremely time-consuming activities and can create a significant strain on internal resources, making them difficult for a company to justify. Hiring a third-party to do this job is often the best solution, allowing valuable information to be gained, without disrupting day-to-day business activities.

## Data Mining

Analysing the information that your company stores in connection with all customer interactions can reveal a lot of remarkable facts about the buying behaviour of your customers, what motivates them and what might make them stop buying from you. It also provides a scientific method to monitor your business performance.

When deciding to mine information from a database, one is faced with a wide number of available techniques. Some of the more popular data mining methods are described below:

### *Statistical models*

Basic statistical measurements – such as means, variances, and correlation coefficients – are useful in the early stages of data analysis to gain an overall view of the structure of the data. By revealing simple inter-relations within the data, statistical modelling can show which in-depth technique is likely to bring further information relevant to your interests.

### *Clustering*

Clustering is a technique that aggregates data according to a pre-determined set of characteristics. It can be used to differentiate groups of customers that behave similarly on certain factors, for example it can classify customer behaviours according to credit worthiness, income, age or any other factor of interest.

### *CHAID Analysis*

CHAID, which stands for Chi-square Automatic Interaction Detection, can be seen as the opposite of clustering, in the sense that the CHAID analysis starts with the overall database, and then splits it according to the most important variable until it achieves homogeneous sub-groups that cannot be split any further. A major advantage of this technique is that the results can be presented as an easy-to-read classification tree; each split in the tree being accredited to a single variable (e.g. credit worthiness, income, age, etc).

### *Propensity models*

Propensity models – also known as predictive models – have proven to be very valuable in predicting which customers are most likely to purchase a certain product based on a set of current customers. The results of such a model can be directly used to develop more appropriately targeted marketing campaigns.

Other recognised techniques to extract information from datasets are database segmentation, neural networking, and wavelet analysis among others. It can be intimidating to choose which method will provide the best results. As shown above, analysis tools can differ greatly in their approach of the problem. It is therefore very important for a company to consult someone with extensive experience in data mining processes before going ahead with a business intelligence project. The best method to use will vary greatly depending on the time available to do the analysis, what the results will be used for, and the type of data that is available for the analysis.

An important point to consider is whether your analysis is guided by pre-defined questions or not. Predefined points of analysis are aimed at understanding certain types of behaviours by analysing relationships between various pre-decided influencing factors. For example, a predefined analysis of customer service Vs sales would illustrate the effect of good and bad customer service on sales, and would answer questions such as how important customer service is to customers and how much it influences future sales. On the contrary, the objective of an open-ended analysis is to discover trends that are not anticipated by ordinary immersion in the day-to-day business. Performing an open-ended analysis internally is often impaired by the expectations brought on by individuals working within the company.

The techniques used to analyse data are complex. In order for your company to be able to use the results of the data analysis, it is crucial that the results should not be clouded by the complexity of the calculations but are delivered in a straightforward manner.

## Intelligent Marketing

It is important for a company to recognise that a good understanding of its customers is useful only to the extent to which this knowledge can be translated into real business practices. Business intelligence refers not only to the data analysis in itself, but also to how you relate the results from the data analysis to every day business decisions and how you translate the recommended actions stemming from the analysis into live campaigns.

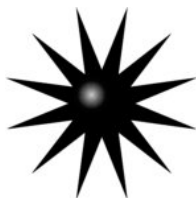
It is therefore important for you to ensure that the marketing department in your company interacts with the data analysts constantly throughout the process. That way, when the data analysis is complete, the marketing personnel will already be in tune with the issues the company is facing, and will be able to develop campaigns to capitalise on opportunities and strategies to mend weaknesses quickly and effectively.

Detailed analysis of your customer data will provide you insight into their needs and wants. The exercise will analyse and segment customers' buying patterns and identify potential services that are in demand. You can use this information to shorten response times to market changes, which then allows for better alignment of your products and services with your customers' needs.

An in-depth understanding of your customers, provided through comprehensive data-analysis, will also allow you to pick and target better prospects, achieve a higher response rate from marketing programs, and at the same time identify reasons for customer attrition and create or alter programs and services accordingly.

Understanding how external market conditions affect your business will enable you to react quickly to future changes in the market. Finally, understanding customer behaviour and the way they use your products and services will enable your company to improve its service to its current client base as well as to target new business more effectively.

## About AccuraCast



AccuraCast is an integrated marketing, business intelligence and data analysis agency, providing small and medium sized companies in the UK a more accurate picture of their business environment via comprehensive data analysis, business intelligence, and marketing consultancy services.

AccuraCast helps companies gain a better understanding of their customers and market their products and services more effectively. The company uses high-tech data analysis methodologies to investigate client databases smartly, and proven sales and marketing methods to reach the target markets. AccuraCast delivers customer specific marketing solutions and information based on tailor-made analysis of the databases, allowing companies to gain the necessary edge over the competition.

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