



Make proactive decisions

Use this seven-step process to gain a competitive advantage

DO YOU react to situations all the time? With customer and business data at hand, and by turning it into insights, you can now make proactive decisions and switch from reacting to situations to anticipating them.

The 7-Step Business Analytics Process can help you and your organisation gain a competitive advantage in the marketplace.

The process can be illustrated through the use of a bank example. Currently, ABC bank feels it is losing too much money to bad six-month personal loans. About 30 per cent of its customers are defaulting on their loan repayments.

Imagine you are the bank loan manager. You are interested in building a tool that will assist the bank in reducing the amount of money lost due to bad debts. To do this, you use the 7-Step Business Analytics Process:

1 Define the business needs

First, you must understand what the business would like to improve on or the problem it wants solved. The goal should be specific and measurable. In the bank's case, it can be: "We want to reduce our rate of bad loans by at least 10 per cent, using a model that predicts which loan applicants are likely to default."

Once the business goal is set, you can focus on collecting the data that meets this goal. This is usually defined by the business stakeholders, business users and the business analyst. At this stage, key questions such as, "What data is available?" "How can we use it?" and "Do we have sufficient data?" must be answered.

2 Explore the data

This stage involves conducting data samples and data cleansing, when the analyst is already looking for general patterns and actionable insights that can be derived to achieve the business goal. Before moving to the next stage, you must be confident that the data is of good quality. As the saying goes: Garbage in, garbage out.

Back to the bank illustration. You (the bank loan manager) and your team collect a sample of representative loans from the past five years, where some of the loans have defaulted (about 30 per cent), most of them not (about 70 per cent).

You will collect a variety of attributes about each loan application such as credit history, credit amount, savings balance, number of years employed, marital status, gender, age and so on.

Scrutinise customer and business data to come up with the best solutions.

3 Analyse the data

At this stage, you will look to see which attributes are related (correlated) to a bad loan by performing correlation analysis. Often, this is when the data is cut, sliced and diced, and different comparisons are made while trying to derive actionable insights from the data.

4 Predict what is likely to happen

To predict which loan applicants are likely to default, you would use a classification model to decide whether the loan applicant is likely to be good or bad. Models such as decision trees and logistic regression are some examples of classification models. Once the model has classified the loan applicants, you need to check whether the rules of the model make sense.

5 Find the best solution

The analyst will run "what-if" scenarios, using the

predictive model targets set by managers to determine the best solution, with the given constraints and limitations. The analyst will then select the optimal model solution based on the lowest error, management targets and management intuitive recognition of the model coefficients that are most aligned to the organisation's strategic goal.

6 Make a decision and measure the outcome

The model will then be tested on a sample of new loan applicants and after an appropriate period of time, the analyst will measure whether the business goal was met: Has the bad loan rate been reduced by at least 10 per cent? Is the model accurate enough to deploy on a larger scale?

7 Update the system with the results of the decision

In the final stage, the database is updated with the new bad loan rate and the return on investment.

Steps 1 to 7 result in an evolving database that is continuously updated as soon as knowledge and new insights are derived. Business Analytics Processes, such as the one illustrated above, enable business users to make proactive data-driven decisions in almost real time, providing a competitive advantage to the organisation.

Article by Dr Carol Anne Hargreaves, chief of Enterprise Business Analytics (EBAC) at the Institute of Systems Science, National University of Singapore. She currently teaches the EBAC professional courses and her team is preparing the launch of the Master of Technology in EBAC degree in January next year. For more information, e-mail isscah@iss.edu.sg or visit www.iss.nus.edu.sg

To send article contributions, comments, views and story ideas, e-mail recruit3@sph.com.sg

When you contribute to CATS Recruit in The Straits Times, we take it that you agree, at no charge, to allow us to use, archive, resell or reproduce the letters and contributions in any way and in any medium.

