**Modelling consumer complaints in FMCG**

**Executive summary**

This project successfully analysed and proposed improvements to the current practice of detecting increases in consumer complaints at FMCG producer Beiersdorf. Consumer complaints contain feedback from the market, and detection of possible product issues through increases in complaints is crucial for long-term consumer satisfaction.

**Challenge overview**

Beiersdorf has consumers in all continents of the world. Being the leader in skin care, feedback from consumers can help the company retain and strengthen its position. In collecting consumer complaints for all products, Beiersdorf has a repository of information that can help signalling product issues and improvement opportunities. The Product Quality Improvement team wanted to improve their detection of product issues through a robust model. In addition, the current approach needed to be assessed.

**The problem**

The objective was to learn from sales and complaint data, in order to develop a diagnostic for product issue detection. Beiersdorf sells more than a thousand different varieties of its products in countries worldwide. Though strict quality control is used in the manufacturing, sometimes products that do not live up to the standards end up at the consumer's table. The reason can stem from various sources; transportation handling, change in the production or product composition, consumers using the product inappropriately or simply a new design that is not appreciated. Regardless of cause, it is important that customer dissatisfaction is reduced and product quality is maintained. Consumer complaints form a second stage (after production control) of feedback to Beiersdorf. Products that, for one reason or another, do not live up to the consumer expectations need attention. An increase in the number of complaints for a product is an indication that there may be a product issue. However, there is a natural variation in the number of complaints, and there are almost always a few complaints even for products that have no problem. The task therefore lies in detecting increases that do not simply stem from chance. Clearly, monthly manual analysis of hundreds of time series for many countries is simply not feasible. Therefore an analysis was carried out on a sample using regression and methods traditionally used in manufacturing: statistical process control charts.

**Results and achievements**

Results are to be presented at the HQ in Germany. Though there still remains some final work on the model, implementation is scheduled to be finished by the end of 2010. Key findings include:

- Dividing complaints by average past sales is problematic. This is because the time from the unit is sold until a consumer complains tends to vary. Sometimes the relationship between sales and complaints is very hard to determine.
- The complaint data is seasonal to a large extent. This means that models or data need to be adapted in order for detection to work properly.
- In visualising the complaint data through time, the analyst gets much more insight than with the current practice which only involves year-to-year comparisons of a specific month.