FORECASTING NEW ACQUISITION CALLS

This project aimed to deliver comprehensible sales forecasting models for BSkyB in broadcasting and broadband markets. It explores the relation between the service calls and the sales numbers, since the causal information is potentially valuable in forecasting future sales volume. Unlike forecasting inbound calls or sales directly, the project mines the relations between types of sales and types of service calls more deeply, using the number of calls to develop models to predict various sales volumes. The ideal model takes advantage when forecasting sales through the causal relation between service calls and sales, and should assist BSkyB in managing their marketing mix via the key performance indicators (of sales) revealed by these new models.

Challenge Overview
In order to provide a 26 week sales forecast via the number of service calls, one of the main challenges was to establish this relationship. Instead of only forecasting calls as inbound service, the project also investigates the relationship between types of sales and types of service calls. Besides that, the project also investigated the effect of lagged service calls. Since customers might not purchase BSkyB products every time they talk with a call centre agents a carry-over effect is possible.

Solving the Problem
Several forecasting models have been considered for solving the problem, including exponential smoothing and ARIMA models. That were applied to each of the five product categories. The model assessment was held on a hold-out sample of data not used in model construction with rolling-origin forecasting (using SPSS).

Results and Achievements
BSkyB was provided with several applicable models for each product category. This also included managerial information and recommendations, which allows BSkyB to better allocate their resources and reach their desired sales performance goals. Model interpretations are arrived at from correlation analysis between the target variables (types of sales) and the explanatory variable (total service calls). The recommendations consist of key performance indicator identification, marketing campaign efficacies and suggestions.

The results indicate that further forecasting improvements can be achieved when taking into account service call number data that is subdivided into product categories. Also, further data transformation may lead to an improvement in forecasting accuracy.