Centre for Operations Excellence

Patient Choice Analysis and Demand Prediction for A Health Care Diagnostics Company

Client Profile
The client is a private provider of health care diagnostics in the Lower Mainland area of British Columbia. The company has 45 service locations and more than 750 employees. It serves between 6,000 to 8,000 patients and performs 35,000 tests per day, totaling around 2 million patient visits every year.

Problem and Opportunity
The client has established a strategy of appropriately locating labs for both existing licenses and for expansion sites. They recognize an effective locator model will contribute to their lab location decision making process.

In 2009, the COE team built a model based on sound statistical methodology that allows the user to define a system of existing and proposed lab locations and predicts how many test requisitions each lab would receive in a year. The client had been using the model extensively to make decisions regarding opening and moving labs.

In order to make sure that the locator tool is able to reflect recent trends in patients’ choices, COE carried out this project with the client to bring the current locator tool up to date and to explore opportunities for further improvements.

Approach and Solution
The COE team updated the locator model with information including the most recent census data and factors that affect patients’ probability of choosing one lab over others, such as travel distance, capacity and location convenience of the lab. We compared the changes in importance of the decision factors from the 2009 project. The locator model was proven robust with new data. In addition, we developed new features for the model, including incorporating a projection of population growth specific to the client’s area of operation. The population growth information allows the user to compare scenarios in different years, so the model can show the long-term performance comparison of the proposed scenarios and therefore facilitate durable decision making.

Benefits to Client
The updated locator model predicts the number of test requisitions based on the most recent demographic information and various factors that affect patients’ choices.

The client can now use the tool to make long-term business plans (up to 15 years) regarding opening and moving labs.

The client can easily maintain and update the locator model with new demographic information.