Modeling and Optimizing Your Marketing Mix

By Laura Patterson

Fifty years ago, optimizing the media mix was relatively easy. Companies could select from a mix of national and local magazines, newspapers, broadcast television networks, radio and large industry trade shows. By the '90s, channel options became a bit more complex; cable television was added to the mix along with segmented direct mail and a bevy of trade publications and trade shows.

Today, the media mix has expanded further to include new digital channels such as social networks, SEO, online advertising, virtual events, email, and mobile. All of these marketing vehicles reinforce and amplify the importance of being able to ascertain the effectiveness and efficiency of our marketing channel investments; hence the increased emphasis on marketing mix modeling and optimization.

What is a Marketing Mix Model?

Marketing Mix Models are used to quantify the sales impact of various marketing activities and determine effectiveness and ROI for each marketing activity. Most organizations set their models up to evaluate their various channels.

Marketing mix modeling uses statistical analysis such as multivariate regressions on sales and marketing time series data to estimate and forecast the impact of various marketing tactics on sales. Regression is the workhorse for mix models. Regression is based on a number of inputs (or independent variables) and how these relate to an outcome (or dependent variable) such as sales or profits or both. Once you have the statistics to create the model you can use these equations to figure out how to optimize your mix. This is known as Marketing Mix Optimization.

You will want your model to account for direct as well as indirect effects and take things outside of your contract (such as the time of year, interest rates, exchange rates, gas prices, elections, competition, etc.) into account. Developing a marketing mix optimization model requires good data and strong analytical skills. You may find it prudent to partner with your finance organization to co-author the model to as a well to generate buy-in from the sales and leadership team.

When does it make sense to use a marketing mix model? Marketing mix models makes sense when you are trying to answers questions such as:

• What happens if the economy changes by X?
• What happens if we reduce/increase the marketing budget by Y?
• What happens if the competition adds Z to their media spend or reduces their price?
• What if we have to hold our touch points to the current mix, what is the optimal mix of these?
• What is the optimal mix for our current budget?

However, the marketing mix model needs to support your overall organizational outcomes, marketing objectives, and metrics and performance targets. Optimizing a mix that will not enable you to achieve your outcomes and objectives may make your more efficient but will not make you more effective. If you are not meeting your performance targets or industry benchmarks, you may want to revisit your execution before you adjust your mix and spend.

So you want to build your model. What are the steps and what data will you need? Data is the key to being able to perform analytics. So the first step is to determine what data are going to go into your model. Common types of data include: monthly/weekly sales data with causal factors, competitive information, monthly/weekly marketing spend by touch point (channel, promotion, etc), customer demographic and other data, industry data, distribution data, product category data, economic and other data that impacts customer buying decisions. Once you have the data, you can construct a prototype.

The following steps are important to fine-tuning your model:

• Test the predictive ability of the model on a hold out sample
• Refit using all the data and predict the future- remember to account for indirect effects and things out of your control in the model
• Compare actual to forecast sale performance and determine incremental revenue
• Apply financial data and determine ROI
• Model the influence of individual factors
• Simulate the impact of different marketing activities
• Develop and deploy the optimal marketing mix

You will want to refresh your models quarterly and rebuild them at least annually. Things such as your data quality, the breath of internal and external data, the granularity of your data, the accuracy of your historical marketing data, the robustness of your statistical functionality, and the technical architecture to support the model construction all impact the quality of your model. This may be one of those tasks worth outsourcing to the experts if you don't have the analytical skills to develop your model or access to internal resources that can help.