Five Approaches for Making Sense

of the Data Kaleidoscope

By: Laura Patterson, President

I still fondly recall the first time my mother took out her heirloom kaleidoscope. As she made small turns of the tube, we'd peer inside and marvel at the amazingly intricate patterns produced by the bits and pieces of colored glass at each turn.
As marketers, we can take the nearly infinite amount of data at our disposal, and with a slight turn of analysis produce intriguing patterns. However, unlike my mother's kaleidoscope, in which every pattern was beautiful, we need to apply a more discerning eye on the patterns produced from the millions or billions of bits and pieces of data we can now collect.

Today we can gather far more data than we can easily digest—because nearly every transaction or interaction creates a data element we can capture and store. How do you know which patterns are meaningful and worth action? The sheer scale of data can make for extremely complex data relationships and subtle patterns.

That is why data mining has become an essential part of pattern detection. Data mining is used to simplify and summarize data. The next step is to apply various techniques to tease out the meaningful patterns.

There are five common types of pattern detection every marketer should be familiar with:

1. Anomaly detection
2. Association learning
3. Classification
4. Cluster detection
5. Regression

Anomaly detection is useful when you are trying to determine whether something is significantly different from the expected picture. You might use this approach to monitor customers at risk.

Association learning can be used to reveal customer purchasing patterns. For example, you might learn that customers who purchased product A and Product B also purchased Service X. Then you can create offers to target those specific customers.

Classification allows us to use data mining to classify new data into pre-determined categories, allowing marketers to create and apply rules. You might use this approach for opportunity scoring and qualification. Once the opportunity scoring model and categories are established, new opportunities can be appropriately classified and actions planned.

Cluster detection is a good approach when you have a primary category and need to create subcategories. Let's say we have a particular group of power users of a product. It's possible that there are actually relevant and distinct subgroups of power users. Cluster detection reveals the subgroup patterns.

Regression is a type of data mining that helps with constructing predictive models. For example, being able to predict the future engagement of a customer based on past behavior requires regression. By understanding regression, marketers can use the

models to determine which content elements, channel, and touchpoints lead to increased conversion for a particular set of prospects.

Hopefully you've come to an important conclusion—knowing which approach to use starts with asking the right question. The power of patterns begins with knowing what you want to know. And here is where the randomness of the kaleidoscope parts ways from the purpose of data mining.

As marketers it is our responsibility to frame the question. Questions such as these (and many more) fall within our domain:

- What data sets match with which customer segments, and how can these distinctions be used to create customer buying and usage personas?
- What products are most preferred by a particular customer segment?
- Which opportunities convert faster and under what conditions? And the flip side of this question: Which opportunities remain "stuck" and what do these "stuck" opportunities have in common with those that convert and, more important, how are they different from the opportunities that convert?
- What product segments have the fastest traction and adoption, and what is unique about those segments compared with where the traction and adoption is lagging?
- How can the "usage" rates, renewal rates, and upsell/cross-sell opportunities be categorized by customer segment?
- Which touchpoints and channels resonate with that customer segment or persona?

Marketers need to proactively frame the question, gather and analyze the data, decipher the patterns, and—most important—come to the table with a recommended plan of action.

Marketers who are able to distill patterns into something meaningful and actionable are the ones who will succeed in today's data-driven business environment.