

Geo-Behavioral Consumer Tracking

By

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Trade is an activity involving at least two parties. In today's over-saturated consumer product market, many trades would take place only after a series of complex actions. With the evolution of 3G networking and wide adaptation of smart phones, geo-behavioral consumer tracking became a real possibility and can create micro-segmentation in retail spaces.

Geo-Behavioral consumer tracking, in essence, is to track customer's behavior based on their location and time spent in the location. Factoring in other dimensions such as day of week, month, economy level, etc, we can paint a much more accurate picture of consumer behavior at both micro and macro levels. Data analysis of geo-behavioral consumer tracking would be more accurate than the traditional marketing research because human's actions are the only indicator of their thoughts, not the other way around.

If an analogy of geo-behavioral consumer tracking has to be made, I would compare it to e-commerce data analysis. Today, a large number of consumers leave electronic footprints when they shop online and go to different websites. Many marketing companies or products suppliers, distributors and retailers capture the footprints and try to analyze consumer's buying behavior and shopping habits. While these analyses are very efficient, effective and create a wealth of information for the supply side, they do not cover most of the consumer's offline shopping behavior.

As much as consumers shop online, the majority of shopping activities take place offline. When people go to movie theatre, restaurants, grocery, there is very little way to track their activities and use them in a meaningful way.

Through geo-behavioral consumer tracking though, we could analyze the consumer's activities much like how we would trace their online behavior.

Here is how geo-behavioral consumer tracking would work:

1. Today, there are much wider arrays of devices that can help suppliers to track the location of the consumers. The most prominent devices are GPS and 3G/4G cell phones. Through continuous tracking, a large number of consumers can be tracked if they drive with GPS or use their cell phones GPS function.
2. Through "geo" database, suppliers can easily map specific interest points of concern with consumers. For example, a grocery supplier could map all grocery

stores of interests in regions it wants to supply. Then it could monitor through GPS or cell phones and see how many and how frequently consumers would go to certain groceries. Through pulling of data and statistical analysis, they could easily understand which grocery stores have better popularities and shopping densities. This information gives the supplier a macro lens to understand its market better than before.

3. Point 2 really just demonstrated a simple use of geo-behavioral consumer tracking. A marketing research company and advertising company could advance the concept in a much more sophisticated and complex manner. Let's say that a marketing firm needs to understand the link among a consumer's income, shopping activities, and frequent shopping places, they can track the consumer's location and discover with a number of interesting analysis.

For example, the marketing company could see which shopping Mall the consumers frequent. Based on factors such as how long the consumers stayed at the location, what kind of stores are in the Mall, if the Mall has movie theatre and/or food court, and when the consumers go there, the marketing company could find out how long consumers stay at the Mall, estimate how much they spend there, and why consumers go there. Advertising company could send specific ads or promotions based on consumer's shopping behavior, time and location.

With enough information on a single consumer, the marketing research company could link and paint an entire picture of the consumer's shopping habits. With enough information on a large number of consumers, they could micro segment consumers by using dimensions such as location and time.

In this example, we could see how geo-behavioral consumer tracking can give companies a micro lens and provide a deep understanding of a single consumer's entire shopping behavior. At the same time, geo-behavioral consumer tracking can give companies a large macro lens to understand the correlations among variety of consumer behaviors.

4. There are even more sophisticated methods to use geo-behavioral consumer tracking and gathering. For example, with mobile applications projected to exceed more than 40 billion dollars, companies could develop or partner with popular websites and/or mobile applications and get even more information

about their targeted consumers. As a matter of fact, Facebook is trying to implement a mobile Facebook application that track consumer's geo information for the exact purpose.

At the moment, my partner and I are also developing a geo polling website that allow customers to vote online. It will track and present data based on location and time dimension. Through the use of internet IP triangulation and mobile GPS, we can determine where each individual user comes from and how the opinions will trend and change over location and time. Combine the location, time, and opinions, companies can see market trend through simple observation and gather market primary research data through reporting. All of these activities fall under the concept of geo-behavioral consumer tracking. The power of such tool can be observed through the following scenario:

Marketing department of PepsiCo conducts a simple poll about Pepsi VS Coke. When enough people (enough is defined as statistically meaningful) vote on the vote, PepsiCo would know how each location prefer Pepsi product or Coke product. The accuracy of the location can reach household level, but due to privacy concern, we limit it to street level. From street, to zipcode, to town, city, county and country, each level will present data in a statistically meaningful and intuitive way. Let's say that Pepsi then decided to do some target leaflet campaign to target a weak market in Eden Prairie. In order to gauge the effectiveness of the campaign, it could continue to monitor the poll overtime, and see how the popularity shifts with time. Combine these data and promotion activities and put them under microscope, the power of geo-behavioral consumer tracking becomes clear again. It allows supplier side to clearly see market trends that they could not see before.

If we let our imagination wonders a big wild and look into the future, not 3-5 years but 10-20 years span, we can only predict that geo-behavioral consumer tracking will become even more important. With enough advancement in optical science and digital signage, we can easily envision the following scenario:

Consumer A is walking on the street. When he passes by a McDonald store, the digital signage is showing him a \$1 discount in Big Mac. Six feet behind him, consumer B is walking by as well, instead of discount on Big Mac, he sees a discount in Toy meal. How could McDonald achieve this?

It turns out that each consumer has a cell phone that continuously broadcasts his location. Consumer A has frequented McDonald, and the store's POS system knows that he likes meaty combos. When he walks by the store, the digital signage receives his identification through his cell phone and asks the centralized POS system, what promotion should I play for this potential customer? The POS says, meaty combo!

Six feet behind was customer B. He has almost never gone to McDonald before. However, through geo-behavioral consumer tracking, the central POS database knows that customer B has gone to Toy'R US at least twice a month. What does that mean? It probably means he has kids. So the POS tells the digital signage to play a kids meal promotion.

But how can both customers only see their own promotion on the same digital signage (or digital menu board)? It turns out that the digital signage can track their location through either camera or GPS, and use multi-dimensional display technology to display different commercials for viewers from different angle.

Although the display technology described above is almost bordering to science fiction, it actually already exists today. Sony has been a big mover in 3D TV, and how 3D TV works is that a single TV can display two different pictures toward two locations (humans' right eye and left eye). Sony recently applied for a patent where instead using this technology to create a 3D illusion for users, it could also creates two complete different set of pictures for each individual user. So person sitting at the left side of the TV sees a complete different movie than the person sitting at the right side of the TV. If the TV can track person's movement, then it's not inconceivable to see that no matter where the person moves to, the picture can follow.

This brief detour really outlines the future for us. Through geo tracking and a myriad of technology advancement, consumers will no longer just be a number on the balance sheet or market segmentation. Consumers will become a living, breathing moving target that business could track and respond to. Through geo-behavioral consumer tracking, Micro-segmentation and micro campaign will become a tremendous movement and heavily influence how trade will take place in the near and not too distant future.