Case Study

HOW DOES TARGET KNOW SO MUCH ABOUT ITS CUSTOMERS? UTILIZING CUSTOMER ANALYTICS TO MAKE MARKETING DECISIONS

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Every time shoppers make a purchase at a store or browse a Web site, customer behavior is tracked, analyzed, and perhaps shared with other businesses. Target Corporation is a leader in analyzing vast amounts of data to identify buying patterns, improve customer satisfaction, predict future trends, select promotional strategies, and increase revenue. This case highlights a situation in which a teen girl unexpectedly received a maternity-specific mailer from Target and discusses the positive and negative aspects of this retailer's data mining program. The case focuses on the types of data needed to identify changes in consumer behavior, privacy issues that arise with data mining, and how customer analytics supports marketing decisions.

The ever-increasing competition in the retail industry puts pressure on retailers to be more customer-centric and provide a differentiated experience. That is, retailers must be more efficient in understanding their customers' expectations and preferences, and delivering services, merchandise, and promotions that fulfill these needs and wants. Target, among other retailers, has a proven system for collecting information about its guests and marketing to them in the most efficient way possible. Target not only monitors its guests' browsing and spending patterns to determine future habits, but also uses data to predict major life stages, such as when a woman is likely to be pregnant. An example of identifying a change in consumer buying behavior was featured in the 2012 *New York Times* article "How Companies Learn Your Secrets." In this story, an irate father visited a Target store right outside of Minneapolis demanding to meet with the manager because of a maternity-specific mailer that his teen daughter received. The father was livid, stating: "She's still in high school, and you're sending her coupons for baby clothes and cribs? Are you trying to encourage her to get pregnant?" What the father did not know at the time was that his teen daughter was, in fact, pregnant (Duhigg 2012).

How did Target figure out this teen girl was pregnant before she disclosed the information to her father and the company? Why did Target send this mailing to a teen girl and not another family member living at that address? Did other retailers or product manufacturers have access to this personal information about the teen? Many consumers may feel queasy about the privacy and security implications of this story. Target and other businesses may need to revisit the opportunities and challenges of data mining and select strategies that build accurate models but still preserve privacy at the individual level.

BRIEF COMPANY BACKGROUND

According to the company home page, Target is an upscale discount retailer that provides "high-quality, on-trend merchandise at attractive prices [online and] in clean, spacious and guest-friendly stores." In 2011, the retailer achieved an all-time high in sales of $69.87 billion, becoming the second-largest U.S. discount retailer and setting a new record of $4.28 in earnings per share (Hoover's 2012; Target 2012a, 2012b). The company currently serves guests at 1,763 stores across the United States and at Target.com (Target 2012b). During 2011, Target announced its first international bricks and mortar expansion into Canada, with stores to open in 2013 (Target 2012b).

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MORE COMPETITION, HIGHER CUSTOMER EXPECTATIONS

Company Perspective

A more crowded retail landscape and the proliferation of channels and devices (e.g., social media and the Internet) have forced retailers to reevaluate their marketing strategies and implement customer-centric solutions to be more competitive. Competition is more intense because comparison shopping has never been so easy for shoppers. The expectations of customer service are higher now that consumers are more demanding, sophisticated, price sensitive, time strapped, knowledgeable, and overwhelmed by the choices available. In addition to customer demographics, companies use transactional and online data to understand customers' needs and make well-informed decisions. Numerous businesses have been investing in data analysis to learn what customers want, understand historical trends, and improve the quality of marketing decisions, which is also increasing competitive pressure (Taylor 2012).

Consumer Perspective

Technology has had a tremendous impact on the way consumers interact with companies. Customers have both traditional and modern channels to acquire information from companies, including direct mail, television, Internet, e-mail, mobile phones, and social media. People want choices and they want information fast. Shoppers also expect seamless movement between channels. Although consumers have experienced enormous benefits because of advances in technology, these developments have led to an increase in concerns for privacy and security. Customers are often not fully aware of the extent to which companies collect, utilize, and share data, as illustrated by the Congressional Privacy Caucus information request on this topic. This bipartisan congressional committee is exploring how the leading data collection companies manage financial, retail, and other private consumer information for marketing purposes (Singer 2012).

DATA MINING

Data mining is the computer-assisted process that digs through and analyzes massive sets of data, and then extracts the meaning of the figures. By using statistical algorithms to sift through warehoused information, companies can identify relationships, hidden patterns, exceptions, and anomalies that may otherwise be overlooked (Alexander 2012). Data mining has empowered companies to find new opportunities for growth, make better decisions for achieving business goals, and streamline processes to reduce costs. It also allows companies to identify valuable customers, predict future trends, and enable businesses to make proactive, well-informed decisions (Rygielski, Wang, and Yen 2002).

Based on an article by Sonya Donaldson (2007), data mining is useful during market segmentation and when identifying customers with common characteristics or those most likely to purchase products. It is also helpful when analyzing retention rates to prevent valuable customers from leaving a business and going to a competitor. This decision support tool also allows companies to uncover a number of different trends such as merchandise preference, promotional response rates, optimum distribution channels, and seasonal buying behavior. For example, Walmart learned through customer data mining that beer sales increase when a hurricane is predicted. This valuable connection allows the retailer to be prepared to meet the increase in demand by stocking up on an item well before this type of weather event occurs (Keating 2008).

HOW TARGET MEETS ITS GUESTS' EXPECTATIONS

Target has a proven system for collecting information about its guests and marketing to them in the most efficient way possible. Andrew Pole, Target's manager of guest marketing analytics, discussed the company's strategy for meeting its customers' needs at the 2010 Predictive Analytics conference. He presented how the company focuses on three primary sets of guest expectations: "understand her needs, deliver relevant messages and offers, and contact guest with the right vehicle(s)" (Pole 2010).

Target starts by analyzing its collected data to understand the needs of each customer. Target studies the demographics of each guest, such as marital status and family size and composition. The retailer also reviews the guest's occupation, household income, and average income for the neighborhood to obtain a better sense of the guest's spending potential. Target has the ability to buy this type of private information from data warehouses, but some of it is collected through completing Target's debit or credit card applications. The company analyzes the guest's browsing and shopping behaviors across multiple channels. Online lists, like baby and wedding registries, are also used for collecting unique guest data and learning customer needs. In addition, the location

of the guest's house in relation to the nearest store(s) is determined. If a guest lives far from a store, Target will focus its efforts on driving the customer to its Web site. If it can anticipate that a guest has recently moved or lives close to a competitor, Target sends them unique promotions to encourage them to shop at Target.com instead of a nearby competitor (Pole 2010).

Target uses a potential value model to forecast a given customer's likeliness to spend. This model examines a guest's actual spending patterns with Target versus disposable income to determine potential spending. Disposable income is established through analyzing a customer's demographic information and his or her prior years' spending behavior. If the gap between the two spending levels is greater than an established amount, then Target will focus its advertising efforts on those guests. Target can be more selective in whom they approach and better manage marketing costs by using this predictive model (Pole 2010).

Second, Target recognizes the importance of delivering relevant messages to customers in a timely manner. Therefore, Target looks at the purchase cycle for various categories of merchandise that the customer buys from the store. If a guest is browsing for a new electronic device on Target.com this morning, it is imperative that the retailer respond within hours with a follow-up promotion that corresponds to the purchase of this product. If a retailer waits days or weeks to act on the collected data, it runs the risk of losing the sale to another store (Pole 2010).

However, if a guest recently bought dishwashing soap, Target will not offer a coupon for this item during her next store visit, since the item was just purchased. Even though this coupon may be relevant to the guest in terms of brand and savings, the timing is not appropriate. When a coupon does not fulfill a guest's current need, it is less likely to be redeemed (Pole 2010) and represents a waste of marketing resources and customer time. A retailer would not want to send a coupon for diapers to a household with children over three years of age, nor would they want to send a back-to-school flyer to empty nesters.

As a third step to meeting its guests' expectations, Target makes sure to contact its guests using the right vehicle(s). Target recognizes that each guest is unique in how they prefer to be reached. Some guests prefer to receive offers by direct mail (coupons redeemed), while others respond to e-mails (open and click-through rates) or through their mobile phones (promotions utilized). Target is able to tie a guest's response rates to various promotional vehicles to in-store transactions, online shopping, loyalty program participation (Target REDcard with a 5 percent savings reward), and gift registries (baby and wedding) to customize advertisements and offers. In many cases, guests have more than one preferred method for receiving offers. It is not only important to determine the right communication vehicle; it is also necessary for all methods to be coordinated (Pole 2010).

HOW TARGET BRINGS IT ALL TOGETHER

Target's goal is to collect as much data as possible on every individual who shops at one of its brick-and-mortar stores or online at Target.com. These data help to build a guest portrait that Target uses to improve its marketing ROI (return on investment). The retailer assigns each shopper a unique code, known as the "Guest ID" number, which keeps track of every guest's shopping behaviors. This number is tied to the individual's credit card, name, address, and other demographic and geographic segmentation information.

Target has the ability to buy additional information, including the person's ethnicity, job history, credit rating, marital status, education level, and residence tenure. The unique "Guest ID" number is also linked to behavioral data, such as prior in-store and online transactions, Internet browsing, and responses to various promotions for effective analysis.

Due to the development of customer analytics, Target and other retailers can now design incentive programs based on consumer data provided by banks. Derived from customers' shopping habits (how much they spend, the stores they go to, and the items they purchase), retailers target customers with customized offers via the banks' communication channels (text messages, e-mails, or online bank statements). Retailers do not see the actual consumer information (name, Social Security number, purchase history, etc.), but they send banks their selection criteria (e.g., customers shopping at a specific store and spending more than a certain amount), and in exchange for a fee (about 10 to 15 percent of the purchase price of a product), banks send offers to customers who fit the specific profile (Ellis 2011). In a similar attempt, Target and other retailers try to reach their existing customers with promotional offers through Facebook. Sophisticated audience segmentation tools allow retailers to compare their customer databases against Facebook's subscriber records and target only those customers who match specific selection criteria. Intermediary data analytics companies are then able to track whether people who bought products in stores were influenced by ads seen on Facebook (Steel and Dembosky 2012).

Figure 1
Example of the Baby Coupon Mailer from Target

Source: www.totallytarget.com/2011/03/21/new-target-baby-mailer-over-77-in-coupons/, accessed July 29, 2012.

HOW TARGET LEVERAGES THE DATA TO DRIVE PERFORMANCE

Target has been successful in developing a number of data mining programs to improve its marketing efforts and drive performance. They have been able to create detailed portraits of individual customers, leading them to information that is considered to be very personal.

One of Target's most successful programs is its Mom and Baby Acquisition Mailer (for an example of this coupon mailer, see Figure 1) where they have been able to "acquire and convert prenatal mothers before they have their baby." Target found that prenatal mothers start nesting and buying specific items at regular intervals. Andrew Pole and his team developed a model that assigns each shopper a "pregnancy prediction" score based on about 25 products that are routinely purchased. This model not only identifies whether a woman is pregnant, but also estimates her due date to a small window, allowing the retailer to send coupons timed to the various stages of her pregnancy (Duhigg 2012). This is exactly what happened in the teen pregnancy case featured in the press. Based on the items this teen girl purchased from Target, her "pregnancy prediction" score was high enough to start receiving coupons for baby items. This article also provided a hypothetical example to further illustrate how Target's model works:

> Take a fictional Target shopper named Jenny Ward, who is 23, lives in Atlanta and in March bought cocoa-butter lotion, a purse large enough to double as a diaper bag, zinc and magnesium supplements and a bright blue rug. There's, say, an 87 percent chance that she's pregnant and that her delivery date is sometime in late August. (Duhigg 2012)

Retailers have learned that there are a few unique moments in a person's life where shopping patterns become flexible. Most consumers' shopping habits are fixed, so any chance of convincing a customer to change is very limited and extremely difficult. However, when people become new parents, graduate from college, or even move to a new town, they are traditionally less brand loyal and more willing to explore. Pregnancy is one of the most important life-changing events that retailers study. This is a period of time where the shopping preferences of expectant parent(s) most often change, and the right advertisement or coupon could shift the customer in their direction. Charles Duhigg said, "If companies can identify pregnant shoppers, they can earn millions" (2012).

Once the program was applied to all female shoppers in their national database, Target had a list of tens of thousands of women who were likely to be pregnant. They realized that if they could successfully reach these customers with the appropriate messaging and offers, they could convince them to start buying more than baby-related products and look to Target as their one-stop-shop solution (Duhigg 2012). In 2010, as a result of its analytics program, Target was able to identify 30 percent more prenatal mothers

as direct mail contacts for the profitable Mom and Baby Acquisition Mailer (Pole 2010).

Target has also improved its marketing efforts with the use of its Receipt Marketing Point-of-Sale (POS) Offers. In particular, Target has seen a significant increase in coupon redemption and guest-conversion rates through its successful Receipt Marketing (POS) Diaper Offer. Target was able to develop a model that identified guests likely to start buying or increasing their purchases of baby diapers at its stores. Target reviewed its guests' demographics, in-store and online shopping behaviors, and pulled data from its registries to help predict each guest's purchasing behavior. As a result, the selected guests have redeemed more coupons and made more purchases of diapers and other baby products at Target (Pole 2010).

Data mining has given Target insight into the relationship between product sales and online reviews. Results showed that products with online reviews, even when reviews were below average, sold better than products without reviews. As a result, Target launched an Online Review Request Email Program to increase the number of reviews for products that featured minimal to no reviews on its Web site. The retailer identified guests that would most likely write future product reviews by examining their past history for writing reviews combined with recent in-store and online purchases. Then Target invited these consumers (via e-mail) to write reviews about recently purchased products. The program was highly successful, leading Target to acquire tens of thousands of incremental reviews and increase sales of those key products (Pole 2010).

CONTROVERSY ON DATA MINING

There has been increased controversy around how retailers like Target Corporation run their predictive analytics programs. Not only are most companies not informing their customers of when and what data they are collecting, but they are not letting them know about their analysis policies. Consumers are quite often willing to share some personal data, but are unaware of how retailers are using the collected data to improve their marketing strategies.

People have mixed emotions when they learn how much a company knows about them, especially when the details are private. Target learned quickly that they upset prenatal mothers when the company found out about their pregnancies without consent. Pole stated, "If we send someone a catalog and say, 'Congratulations on your first child!' and they've never told us they're pregnant, that's going to make some people uncomfortable" (Duhigg 2012). After Target received negative publicity regarding its original data mining approach, the retailer determined a new strategy that allows expectant mothers to receive specific advertisements without revealing the direct marketing focus. A Target executive said:

> We started mixing in all these ads for things we knew pregnant woman would never buy, so the baby ads looked random. We'd put an ad for a lawn mower next to diapers. We'd put a coupon for wine glasses next to infant clothes. That way, it looked like all the products were chosen by chance. And we found out that as long as a pregnant woman thinks she hasn't been spied on, she'll use the coupons. She just assumes that everyone else on her block got the same mailer for diapers and cribs. As long as we don't spook her, it works. (Duhigg 2012)

This approach allows Target to continue to reap the benefits of data mining while making it less obvious to the customer that they have been identified as an expectant mother.

One of the only ways to learn about a company's analytics program is to research the company's Web site to review their privacy policy. Many companies like Target have implemented loyalty schemes to capture valuable customer data. Target has a loyalty card, which offers participating customers a 5 percent discount on all purchases. Signing up for this card gives Target another opportunity to inform its guests about the customer privacy policy. The policy is usually disclosed in fine print or is only found after many clicks on the Web page, and "few consumers take the time to read the dense legalese before sending in the application form" (Krishnamurthy 2012).

Another issue regarding data mining is that there are no clear policies around how companies use the data once they have collected the information. In some cases, retailers are buying or sharing information with other companies to better understand customer behaviors. Described in Target's privacy policy section, "Sharing with Other Companies (for their marketing purposes)," the company states:

> We may share information with vendors, business partners and other organizations which are not part of the Target family. These companies and organizations may use the information we share to provide special offers and opportunities to you. (Target 2012c)

Many critics have expressed how inappropriate this practice is for retailers like Target, which sell such a wide range of products, from food to vitamins to clothes. A lawyer and

member of Foley Hoag's Corporate Social Responsibility Practice explained:

> If an individual's purchases of these kinds of products can be used to determine whether she is pregnant, it is not difficult to see how a predictive analytics program could be used to determine whether a customer is overweight, diabetic, or sexually active—to name just three kinds of intimate details that can be revealed by the things we buy. Nor does it take a particularly fertile imagination to see how such information could be used by potential employers, insurance companies, and others in ways that no consumers would ever have dreamt about while waiting in the checkout line. (Krishnamurthy 2012)

As effective as data mining can be, there are some instances where this strategy could have a negative impact on the brand. Statistics from the American Pregnancy Association found that 10 percent to 25 percent of all clinically recognized pregnancies will end in miscarriages (2012). The last thing this woman wants to see is a flyer or e-mail focusing on cribs and diapers after this type of loss. If retailers like Target identify this information early on, they can avoid sending prenatal promotions to women who have experienced a miscarriage. If the company is not careful, customers could unsubscribe from mailings, or worse yet, stop shopping at their stores.

CONCLUSIONS

The retail industry is just one of many that utilize data mining and customer analytics to support marketing decisions. Exploring how collected data can be manipulated to identify customer buying patterns and increase profitability is a growing business trend. As customer analytics continues to gain attention, companies can study the potential financial gains versus the negative impact in terms of customer privacy when considering the use of a data mining program.

QUESTIONS

1. The case describes the data mining approach used by Target Corporation to predict when a woman is likely to be pregnant. What types of data/indicators would be helpful for Target to track for identifying changes in consumer buying behavior during other life stage events such as getting a divorce, leaving for college, or preparing for marriage?
2. What considerations should a corporate executive in industries such as banking, health care, or higher education investigate when deciding on implementing a data mining program?
3. Consider the pros and cons of data mining from the corporate perspective and the customer perspective for managerial decision making. Use the table below to format the response.

	Pros	Cons
Corporate Perspective		
Customer Perspective		

4. Privacy concerns and ethics are two controversial topics that have arisen because of data mining and customer analytics. If you are a manager at Target Corporation, what policies could you present that would make customers more comfortable with the idea of collecting and analyzing their data? Please visit the Target home page to read their current "Privacy Policy," www.target.com/spot/privacy-policy#?lnk=gfot_t_spc_2_2/.
5. How have other industries or companies been successful with tracking and analyzing consumer behaviors to deliver targeted messages and promotions? Describe how they are similar and/or different to Target's approach. Visit the home page for one of the following organizations to find an example for your response: Amazon, Netflix, Pandora radio, Google, Facebook, Visa, eHarmony, iTunes, Ticketmaster, or Kroger. Use library databases or Web browsers to search for credible sources and include a citation.

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