Chapter 5

Marketing Analytics: Welcome to the Era of Big Data!

Lisa Arthur
\textbf{\large A Decision Maker at Teradata Corporation}

As Teradata’s chief marketing officer (CMO), Lisa Arthur drives global market and demand strategy, product and solutions marketing, and customer-centric initiatives and serves as global industry thought leader around data-driven marketing and Teradata’s Integrated Marketing Cloud solutions. A 30-year marketing veteran, she has also served as CMO for Internet leader Akamai Technologies, B2B2C application provider Mindjet, and, most recently, Aprimo (now Teradata). She is the author of \textit{Big Data Marketing: Engage Your Customers More Effectively to Drive Value} (2013).

Lisa spent nearly seven years at Oracle, where as a vice president of marketing she managed the market entry and growth for Oracle CRM and E-Business Suite On-Demand. Also, as the founder of Cinterim, she applied her market-centric processes and insight to provide strategic counsel for Silicon Valley start-ups and Fortune 50 technology companies.

A seasoned keynote speaker, Lisa has addressed diverse topics at Web 2.0, Office 2.0, the Direct Marketing Association, the Australian Direct Marketing Association, the American Marketing Association (AMA) Strategy Conference, Stanford University, and the MIT Sloan CMO Summit and various CMO Executive Forums. She is frequently quoted in industry media, has a syndicated blog in B2C Community, and has appeared on Asia’s Wall Street Journal broadcast and published numerous papers with the AMA. Her industry thought-leadership blogs have appeared on the Forbes.com CMO Network, and she is a contributor to \textit{Lean back}, a marketing blog of The Economist Group. Lisa’s recent honors include the Direct Marketing News 2013 “Marketing Hall of Femme,” honoring today’s top women marketers, and the American Business Association’s 2012 Gold “Stevie Award” for Marketing Executive of the Year. And, in 2014, 2012, and 2011, she was named a “Woman to Watch” by the Sales and Lead Management Association. She is also a trustee with the Marketing Sciences Institute. She earned a BA degree from Ohio State University.

What I do when I’m not working?
Writing, cooking, and photography.

First job out of school?
I had school loans, and it was a tough job market, so I began my professional career as a temporary employment recruiter and placement professional. Needless to say, I’m thrilled I switched to marketing.

Career high?

A job-related mistake I wish I hadn’t made?
Not listening to my intuition. I’ve made this mistake a couple of times, and while data is essential for decision making, so is gut instinct.

Business book I’m reading now?
The \textit{Singularity Is Near} by Ray Kurzweil.

My hero?
My husband. Every day, he is the “superman” in my life, and I couldn’t do what I do without his love and support.

My motto to live by?
It’s never too late.

What drives me?
I’m on a quest along with my company, Teradata, to make marketing a more valued function through the use of data to innovate and transform customer engagement and experiences.

My management style?
Collaborative coach.

My pet peeve?
The word \textit{can’t}.
When Lisa joined Aprimo in 2009 (now part of Teradata Corporation, a public company listed on the New York Stock Exchange) as its CMO, the company had been in business for 11 years and had enjoyed strong success in the marketing resource management (MRM), the multichannel campaign management, and in the enterprise marketing management space. It boasted a blue-chip client list of more than 200 companies that used its marketing software and services to improve their marketing results and effectiveness. Acquired in 2011 by Teradata, the applications have expanded to also include Big Data discovery and marketing attribution through its TeradataAster solutions. Marketers are both the consumers and the generators of Big Data and can gain insight and then take action with consumers and buyers to engage in real time to provide next-best offer or next-best message. Since Teradata is the leader in data and analytic platforms as well as its own leading multichannel campaign management solution, the combination of marketing applications along with Big Data and advanced analytics adds value to the company’s already robust marketing solution.

Prior to the Teradata acquisition, Lisa was recruited to be a change agent—to reposition Aprimo, the company, and its brand as the platform for marketers. There had been branding and positioning work that had created a great logo, but the company still was missing a clear connection between what it could offer to marketing executives and their teams. The company was growing quickly and needed to broaden its appeal to a wider market. At the same time, it was launching a next-generation cloud offering comprised of marketing operations, campaign management, and digital messaging solutions, along with associated analytics to help make real-time sense of customer data. The cloud analytics category was an emerging market with all the hallmarks of a sector ready to explode. But the Aprimo brand was not well known, and most people in the marketing analytics industry perceived that the firm was only an MRM technology solutions provider. In reality, the company offered a lot more—a marketing software platform to enable global companies to communicate online or offline and accelerate the delivery of e-mails and Short Message Service. Furthermore, the company was gearing up for the launch of Aprimo Marketing Studio On Demand, a cloud-based platform but Lisa was unsure of the best timing.

Lisa considered her Options 1 2 3

Option 1: Continue on the current course and pace and focus only on the launch of the product for the short term in order to provide more time and resources to relaunch the brand. Wait 9 to 12 months to do the more extensive brand work that would do a better job of communicating the company’s abilities. This choice would allow Lisa and her team to focus on a “big-bang” product launch that would generate a lot of interest among potential clients in the short term. Since the marketing department was understaffed, this choice would allow the team to focus on getting the product launch right. On the other hand, the new cloud product was going to spearhead a major repositioning for Aprimo, and Lisa feared that the impact of the launch would get lost without a more full-scale, integrated approach.

Option 2: Launch the product and the brand in a “two-prong” release. Aprimo could use the revenue it would earn from the new cloud product to fund aggressive growth plans it had for the following year. This choice would allow the company to meet its revenue goals and also provide two (rather than one) anchor points for the relaunch of the company—there would be some buzz generated by the new cloud product, and then the brand relaunch a few months later could build on that. This decision would also give the company time to tweak its cloud product among early adopter clients so it could be confident that it was rolling on all cylinders when the entire Aprimo brand relaunched. Still, it wasn’t clear if the team’s minimal staff could pull off two separate launches within a fairly short period of time. And, this was a fairly unusual strategy, so it was a high-risk move for a brand-new CMO.

Option 3: Delay the cloud product launch, accelerate efforts to rebrand Aprimo, and then launch both the cloud product and the new brand together. This option was a big-bang approach that would energize the company. The relaunch would be even more impactful because it would be accompanied by the release of an innovative product to signal the company’s arrival in the cloud. All of the company’s event planning resources could focus on one truly integrated plan. On the other hand, this delay would probably result in a loss of revenue for Aprimo. The time lag might give competitors an opportunity to bring out similar products beforehand and steal Aprimo’s thunder. Also, the delay would force Teradata to miss the industry’s big autumn trade show, DreamForce, where people in the industry traditionally expected to see new launches announced.

You Choose

Which Option would you choose, and why?
1. YES  NO 2. YES  NO 3. YES  NO

See what option Lisa chose on page 144
customer relationship management (CRM)
A systematic tracking of consumers’ preferences and behaviors over time in order to tailor the value proposition as closely as possible to each individual’s unique wants and needs.

one-to-one marketing
Facilitated by CRM, one-to-one marketing allows for customization of some aspect of the goods or services that are offered to each customer.

touchpoint
Any point of direct interface between customers and a company (online, by phone, or in person).

Chapter 5

1. **OBJECTIVE**
   Explain how marketers increase long-term success and profits by practicing customer relationship management.

Customer Relationship Management (CRM): A Key Decision Tool for Marketers

In Chapter 1, you learned that a *consumer orientation* is a business approach that prioritizes the satisfaction of customers’ needs and wants. Now it’s time to drill down a bit more on how firms actually accomplish this prioritization. Toward this end, most highly successful firms embrace customer relationship management (CRM) programs that involve systematically tracking consumers’ preferences and behaviors over time in order to tailor the value proposition as closely as possible to each individual’s unique wants and needs. CRM allows firms to talk to individual customers and to adjust elements of their marketing programs in light of how each customer reacts. The CRM trend facilitates one-to-one marketing, which includes several steps:

1. Identify customers and get to know them in as much detail as possible.
2. Differentiate among these customers in terms of both their needs and their value to the company.
3. Interact with customers and find ways to improve cost efficiency and the effectiveness of the interaction.
4. Customize some aspect of the goods or services that you offer to each customer. This means treating each customer differently based on what the organization has learned about him or her through prior interactions.

Table 5.1 suggests some specific activities to implement these four steps of one-to-one marketing. Remember, successful one-to-one marketing depends on CRM, which allows a company to identify its best customers, stay on top of their needs, and increase their satisfaction.

At its core, CRM is about communicating with customers and about customers being able to communicate with a company “up close and personal.” CRM systems are applications that use computers, specialized computer software, databases, and often the Internet to capture information at each touchpoint, which is any point of direct interface between customers and a company (online, by phone, or in person).

These systems include everything from websites that let you check on the status of a bill or package to call centers that solicit your business. When you log on to the FedEx website to track a lost package, that’s part of a CRM system. When you get a phone message from the dentist reminding you about your appointment tomorrow to get a root canal, that’s CRM (sorry about that). And when you get a call from the car dealer asking how you like your new vehicle, that’s also CRM. Remember how we said in Chapter 4 that information is the fuel that runs the marketing engine? It is through CRM that companies act on and manage the information they gather from their customers.

To fully appreciate the value of a CRM strategy, consider the experience of USAA, which began as an insurance company catering to the military market and today is a leading global financial services powerhouse. In 1922, when 25 army officers met in San Antonio and decided to insure each other’s vehicles, they could not have imagined that their tiny organization would one day serve 6 million members and become the only fully integrated financial services company in America. Unlike State Farm, Allstate, and other traditional insurance providers, USAA does not provide field agents with an office you can go to, sit down, and shoot the breeze about your latest fishing trip. In fact, USAA’s employees conduct business almost entirely over the phone. But just ask any USAA member how they feel about the service, and you’ll get a glowing report.
The secret sauce in USAA’s success is largely its state-of-the-art CRM system. No matter where on the globe you are, no matter what time of day or night, a USAA representative will pull up your profile, and you’ll feel that he or she knows you. Of course, it takes a good dose of employee training to enable those folks to use the system to its potential. But USAA does a great job of building and maintaining long-term customer relationships and, more important, getting customers to move many or all of their business over to USAA, including banking, credit cards, money management, investments, and financial planning. To further build loyalty, USAA even runs an online company store that sells all sorts of popular product lines and brands for which members get purchase discounts.5

USAA’s success helps illustrate and explain why CRM has become a driving philosophy in many successful firms. Gartner, a leading information technology (I.T.) research firm, notes that the CRM market grew from $16 billion to $18 billion between 2011 and 2012.6 In addition, the firm forecasts that the global market for CRM systems will grow to $36.5 billion by 2017.7 Clearly, CRM is increasingly becoming an important part of how businesses operate, and there does not seem to be any signs of that trend slowing down. Here are some recent examples of CRM at work:

- Amazon.com is the world champion master of the happy customer approach to CRM. For loyal users, Amazon tracks visits so that it can customize advertisements, product promotions, and discounts for each shopper. This helps keep customers engaged during each of their visits and helps ensure that they continue to come back for more. For instance, if you happen to have a passion for, say, grunge bands of the 1990s, the website is quick to recommend that new retrospective on Pearl Jam the next time you visit.8

### Table 5.1: The Four Steps of One-to-One Marketing

<table>
<thead>
<tr>
<th>Step</th>
<th>Suggested Activities</th>
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<tbody>
<tr>
<td>Identify</td>
<td>Collect and enter names and additional information about your customers.</td>
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<tr>
<td></td>
<td>Verify and update, deleting outdated information.</td>
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<td>Differentiate</td>
<td>Identify top customers.</td>
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<td></td>
<td>Determine which customers cost the company money.</td>
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<td>Find higher-value customers who have complained about your product more than once.</td>
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<td>Find customers who buy only one or two products from your company but a lot from other companies.</td>
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<td></td>
<td>Rank customers into A, B, and C categories based on their value to your company.</td>
</tr>
<tr>
<td>Interact</td>
<td>Call the top three people in the top 5 percent of dealers, distributors, and retailers that carry your product and make sure they’re happy.</td>
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<td></td>
<td>Call your own company and ask questions; see how hard it is to get through and get answers.</td>
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<td></td>
<td>Call your competitors and compare their customer service with yours.</td>
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<tr>
<td></td>
<td>Use incoming calls as selling opportunities.</td>
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<tr>
<td></td>
<td>Initiate more dialogue with valuable customers.</td>
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<tr>
<td></td>
<td>Improve complaint handling.</td>
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<tr>
<td>Customize</td>
<td>Find out what your customers want.</td>
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<td></td>
<td>Personalize your direct mail.</td>
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<td></td>
<td>Ask customers how and how often they want to hear from you.</td>
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<td></td>
<td>Ask your top 10 customers what you can do differently to improve your product.</td>
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<td></td>
<td>Involve top management in customer relations.</td>
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- Coca-Cola launched its My Coke Rewards online program, the multiyear customer loyalty marketing blitz into which it poured millions of dollars. The organization is now in the process of developing a new version of My Coke Rewards that is in its beta version. This new version is oriented toward providing a more social and interactive experience that connects users to the things that they love (and because it is online, the company can track the activity of users for valuable data).9

- In 2014, Disney launched MyMagic+, a new system that allows Disney World visitors to more efficiently plan out their vacation experience and reduce the need to carry around tickets and other items previously necessary to tour the park. Visitors can book events in advance, reserve times on rides, and review the park activities that they have experienced in the past, to name a few of the main features. MyMagic+ is designed to be partnered with a wearable computer called the Disney Magic Band, which enables users to verify all of the actions they have taken through the MyMagic+ system without carrying around receipts or other forms of proof. In addition, they can use the wearable Magic Band to make transactions while in the park. The benefits and convenience for visitors is obvious, but for Disney another big advantage is the amount of data it can collect on visitors’ behavior and actions. These data better enable the firm to understand how to communicate with each customer and manage each relationship more effectively.10 Yep—one-to-one marketing even within a massive theme park!

**Characteristics of CRM**

In addition to having a different mind-set, companies that successfully practice CRM have different goals, use different measures of success, and look at customers in some different ways from firms that do not. Followers of CRM look at four critical elements (see Figure 5.1): share of customer, lifetime value of a customer, customer equity, and customer prioritization. Let’s have a look at each of these ideas now.
Share of Customer

Because it is always easier and less expensive to keep an existing customer than to get a new one, CRM firms try to increase their share of customer, not share of market; this is the percentage of an individual customer’s purchase of a product over time that is the same brand. Let’s say that a consumer buys six pairs of shoes a year—two pairs from each of three different manufacturers. Assume that one shoemaker has a CRM system that allows it to send letters to its current customers inviting them to receive a special price discount or a gift if they buy more of the firm’s shoes during the year. If the firm can get the consumer to buy three or four or perhaps all six pairs from it, it has increased its share of customer. And that may not be too difficult because the customer already likes the firm’s shoes. Without the CRM system, the shoe company would probably use traditional advertising to increase sales, which would be far more costly than the customer-only direct mail campaign. So the company can increase sales and profits at a much lower cost than it would spend to get one, two, or three new customers.

Lifetime Value of a Customer

As you’ll recall from Chapter 1, the lifetime value of a customer represents how much profit a firm expects to make from a particular customer, including each and every purchase he or she will make from them now and in the future. Thus, this metric describes the potential profit that a single customer’s purchase of a firm’s products generates over the customer’s lifetime. It just makes sense that a firm’s profitability and long-term success will be far greater if it develops long-term relationships with its customers so that those customers buy from it again and again. Costs will be far higher and profits lower if each customer’s purchase is a first-time sale. That’s why we keep repeating this mantra: It’s much more profitable to retain an existing customer than to acquire a new one.

How do marketers calculate the lifetime value of a customer? Using data from the CRM system, they first estimate a customer’s future purchases across all products from the firm over the next 20 or 30 years. The goal is to try to figure out what profit the company could make from the customer in the future (obviously this will just be an estimate). For example, an auto dealer might calculate the lifetime value of a single customer by first calculating the total revenue the customer will generate for the company during his or her life. This figure includes the number of automobiles he will probably buy times their average price plus the service the dealership would provide over the years and even possibly the income from auto loan financing. The lifetime value of the customer would be the total profit the revenue stream generates.

Customer Equity

Today, an increasing number of companies consider their relationships with customers as financial assets. These firms measure success by calculating the value of their customer equity—the financial value of a customer throughout the lifetime of the relationship. To do this, they compare the investments they make to acquire customers and then to retain them to the financial return they’ll get on those investments.

Customer Prioritization

Using a CRM approach, the organization prioritizes its customers and customizes its communications to them accordingly. For example, any banker will tell you that not all customers are equal when it comes to profitability. Some generate a lot of revenue because they pay interest on loans or credit cards, while others simply use the bank as a convenient place to store a small amount of money and take out a little bit each week to buy beer. Banks use CRM systems to generate a profile of each customer based on factors such as value, risk, attrition, and interest in buying new
Big Data

A popular term to describe the exponential growth of data—both structured and unstructured—in massive amounts that are hard or impossible to process using traditional database techniques.

**OBJECTIVE**

Understand Big Data, data mining, and how marketers can put these techniques to good use. (pp. 130–138)

Big Data: Terabytes Rule

CRM systems provide a great internal organizational data repository. But as more consumer experiences shift into the digital space and new means of connecting and interacting with both individuals and corporations becomes possible and widely accepted, it is no surprise that Big Data is becoming an increasingly important concept. You were briefly introduced to Big Data in Chapter 1, learning that it is the popular term to describe the exponential growth of data—both structured and unstructured—in massive amounts that are hard or impossible to process using traditional database techniques.

According to SAS, a leading provider of data analytics software, “Big Data refers to the ever-increasing volume, velocity, variety, variability and complexity of information.”12 Think about the amount of time that you spend online looking up information through search engines such as Google, connecting with friends through social media sites such as Facebook, listening to music on sites such as Pandora, or myriad other online activities that all of us engage in, and you’ll begin to comprehend the sheer volume of data that we are (perhaps unwittingly) creating each and every day. Each action you take online leaves a digital imprint, and all of those imprints have the potential to yield valuable insights for a wide range of stakeholders within society. We see a successful application of Big Data when we look at the Oakland Athletics, a Major League Baseball team that used the analysis of large data sets to help identify undervalued players and make strategic decisions in games. In 2002, the Oakland Athletics won a record 20 games in a row thanks in part to their Big Data–driven strategy. You can even read about the team’s Big Data–enabled exploits in the best-selling book *Moneyball* (also adapted into a major motion picture starring Brad Pitt).13

For marketers, Big Data has potential to provide competitive advantages in three main areas:

1. Identifying new opportunities through analytics that yield greater return on investment (ROI) on marketing efforts
2. Turning insights they gain into products and services that are better aligned with the desires of consumers
3. Delivering communications on products and services to the marketplace more efficiently and effectively

The amount of data that all of us produce does not appear to be slowing down either, as new technologies continue to enhance the ways we connect to people, machines, and organizations. The Internet of Things is a term that is increasingly used in articles and stories on technology trends to describe a system in which everyday objects are connected to the Internet and in turn are able to communicate information throughout an interconnected system.14 Areas that would become part of this network include medical devices, cars, toys, video games—the list goes on and on. Within the context of

**Big Data**

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**Internet of Things**

Describes a system in which everyday objects are connected to the Internet and in turn are able to communicate information throughout an interconnected system.

Financial products. This automated system helps the bank decide which current or potential customers it will target with certain communications or how much effort it will expend to retain an account—all the while cutting its costs by as much as a third. It just makes sense to use different types of communication contacts based on the value of each individual customer. For example, personal selling (the most expensive form of marketing communication per contact) may constitute 75 percent of all contacts with high-volume customers, while direct mail or telemarketing is more often the best way to talk to low-volume customers.

Lisa knows that marketers are both consumers and generators of Big Data that allow them to gain insight and take action with consumers and buyers. She also recognized that offering Teradata’s customers a combination of the firm’s existing marketing applications along with Big Data and advanced analytics would provide greater value for customers and more success for Teradata.

"Smart refrigerators" that can scan product codes are part of the "Internet of Things." It may not be long before your fridge will compile a shopping list for you as you run out of staples and even e-mail the grocery store to arrange for a delivery.

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Big Data, this means that an even larger amount of data will be accessible, offering insight into the extent and ways in which everyday objects are being utilized and potentially allow for processes that were previously done manually to be automated.

For marketers, this interconnection of objects and collection of data could mean gaining insights into how we use products via data captured through sensors embedded in products that track a user’s interaction with the product. This information would then be transmitted via an Internet connection at or near real time. Not only would this enable greater knowledge to be gained on how a product is used (which could be used to develop products and messaging more closely aligned with how consumers use that product), but also it could be done on a scale that traditional market research could achieve only through astronomical financial investments—essentially tracking the actions of each and every product user! So it’s easy to begin to see how much data we would produce in a world where the Internet of Things has fully taken hold.

**Big Data Creation, Sources, and Usage**

The millions of pieces of information that make up Big Data originate from both direct and indirect paths. Here are two examples to illustrate how this works:

1. **Direct path:** You shop for a car online and see a model that you like. You submit a request for information form in which you supply personal information, including features of the car that appeal to you. That information is stored in the car dealership’s database, and a salesperson pulls it up later on before she contacts you about the car.

2. **Indirect path:** On the other hand, data creation can be a by-product of another action. A company that uses Big Data might know, for example, that consumers who purchase green detergent products, register as Democrats, and hold college degrees are more likely than average to purchase a hybrid vehicle. A person who fits this profile might receive a communication about a Honda Prius or other hybrid car even though he or she has not (yet) specifically requested information about these vehicles.
Some of the most important sources of Big Data for marketers are listed below and illustrated in Figure 5.2:

1. **Social media sources**: With an increasing array of social media sites that boast large number of consumers interacting with each other, with brands, and with other entities, a wealth of information is being produced about how individuals feel about products and just about everything else in their lives. It is not uncommon today for consumers to either praise or condemn a product online. That information can be very valuable to marketers not only in terms of what they’re saying but also in terms of the sorts of factors that triggered them to say it. Today, several companies engage in **Web scraping** (using computer software to extract large amounts of data from websites), **sentiment analysis** (a process of identifying a follower’s attitude toward a brand by assessing the context or emotion of comments provided), and other cutting-edge techniques that involve analyzing and mapping millions of posts on Facebook, Twitter, and other social media platforms to track what people say about their experiences with products and services. They depict the themes in these posts visually so that managers can easily see the kinds of words customers use in

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**Web scraping**
The process of using computer software to extract large amounts of data from websites.

**sentiment analysis**
The process of identifying a follower’s attitude toward a brand by assessing the context or emotion of her comments.

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Nielsen’s BAM (Brand Association Map) analyzes consumer conversations online and plots the words and phrases that most closely relate to a client’s brand. The closer a word appears to the map’s center, the stronger the association. And the proximity of words to each other also indicates the strength of their relationship in online posts.

**Source:** Courtesy of Nielsen
their posts. (Hint: If your brand’s name appears a lot of time with terms like “awful” or “sucks,” you probably have a problem.)

2. Corporate I.T. sources: Figure 5.3 provides a list of some of the different places and tools that are used to store corporate data. These sources that live within the organization might include CRM databases, back-end websites, Web analytic databases (e.g., Google Analytics), enterprise resource planning databases, and even accounting-related databases. Each of these and more can contain a treasure trove of information on an organization’s consumers. Unfortunately, too often these systems live in departmental “silos”; one group in the company may not share this information with others in the firm, so each group gets only an incomplete picture of its customers. Hence, marketing needs to be the function within the organization that cuts across these groups in order to mine these databases and connect the dots.

3. Government and nongovernmental organization sources: Provided by the government, these types of data could be most anything from extracted U.S. Census results to data on the economic conditions in developing countries that allow marketers to better understand the demographics of consumers at home and the opportunities for global expansion. Ever-increasing types and amounts of government-generated data that are accessible and machine readable will continue to provide new opportunities for enterprising marketers.17

4. Commercial entity sources: Many companies today collect data in large quantities to sell to organizations that can derive value from them. For some provider firms, this activity is their primary source of revenue; for others, it is a nice additional source of revenue over and above their principal business activities. For example (and this may or may not come as a surprise to you), many credit card companies, such as American Express and MasterCard, sell your purchase data to advertisers so that they can better target their ads. And supermarkets like Safeway for years have sold scanner data—data derived from all those items that are scanned at the cash register when you check out with your loyalty card (which just happens to have your demographic profile information in its record!). The data are sold in aggregated form so that it’s not possible to identify the actions of a specific consumer, but scanner data still provide extremely useful information to both manufacturers and retailers about how much shoppers buy in different categories and which brands they choose.18

5. Partner database sources: In Chapter 11, you will read about different members of a channel of distribution. Many firms today have adopted a channel partner model in which there is a two-way exchange of information between purchasing organizations and their vendors through shared I.T. systems (more on channel relationships in Chapter 11). If you’re the producer of a product that is sold by a large retailer such as Walmart, think about the information and insights you could gain from access to the consumer information that Walmart gathers from its interactions with shoppers in its stores.

Indeed, Walmart in particular is already well known for employing this approach through its vendor management system known as Retail Link, which provides real-time purchase data to suppliers, making it possible for them to track purchase data for their products in real time. Vendors are able manage the process of replenishment so that they can ensure that their products are available for consumers exactly when and where they need them. In addition, for marketers, this provides a valuable source of purchase data in real time that they can use to analyze purchase patterns within different Walmart locations. It also saves Walmart the costs of having to manage this process themselves.19
For organizations, being able to leverage large amounts of data to yield new insights and provide a clearer understanding of both consumers and internal business operations is a very attractive proposition and a potential source of competitive advantage. As we noted in the previous section, increased integration among organizations within supply chains that allows them to more efficiently track the movement of goods at every point in the supply chain all the way to the end user consumer helps to create a more efficient balance between supply and demand. Ultimately, this means cost savings that retailers can pass down to the consumer in the form of lower prices.

Marketers today have the tools at their disposal to develop complex automated correspondences with both current and potential customers via automated e-mail interactions using software that combines complex logic with data captured about the respective consumer. These communications can mirror the correspondences that a consumer might have with a salesperson or customer service representative by harnessing the data collected about the consumer prior to and even during the correspondence sequence. As more sources of data within an organization are integrated that contain different pieces of information, more complex interactions can be achieved that will even more closely mimic the interactions that a person might have with a knowledgeable “live” customer service representative or salesperson.

IBM’s Watson computer is well known for having competed against and outsmarted a number of former Jeopardy! champions (trivia point for your future Jeopardy! appearance—the computer was named “Watson” after IBM’s iconic founder Thomas J. Watson). The technology is capable of thinking in a way that is closer to how humans think by understanding the complexity of natural language, generating hypotheses based on evidence that Watson discovers, and continually learning over time. Although it was certainly enjoyable to watch Watson best some of the brightest minds on Jeopardy!, it is also worth knowing about some of the real-world applications that IBM is developing based on this intelligent agent approach to machine learning. For instance, The North Face partnered with IBM to explore the possibility of using the Watson technology to develop a site in which Watson functions as a sort of shopping concierge capable of helping consumers identify the right products to purchase based on continually asking them questions and observing their actions. The technology in a sense would develop a relationship with each consumer and be able to learn from past interactions and purchases in order to better understand individual needs and then make appropriate proactive suggestions each time. Who needs to hire a professional shopper when Watson is available 24/7?

**Data Mining**

For organizations today, the challenge with data is not about having enough but rather about determining what to do with all of the data it collects. Big Data can easily exacerbate the problem of information overload, in which the marketer is buried in so much data that it becomes nearly paralyzing to decide which of the data provide useful information and which do not. Most marketing information systems include internal customer transaction databases, and many include acquired databases. Often, these databases are extremely large. To take advantage of the massive amount of data now available, a sophisticated analysis technique called data mining is now a priority for many firms. This refers to a process in which analysts sift through Big Data (often measured in terabytes—much larger than kilobytes or even gigabytes) to identify unique patterns of behavior among different customer groups. To give you a sense of the scale, 1 terabyte = 1,024 gigabytes!

In a marketing context, data mining uses computers that run sophisticated programs so that analysts can combine different databases to understand relationships among buying decisions, exposure to marketing messages, and in-store promotions. These operations are so complex that often companies need to build a data warehouse (which can cost more than $10 million) simply to store and process the data. As you’ve no doubt read in the news because it can be controversial, marketers at powerful consumer data generators Google,
Yahoo!, Facebook, and Twitter are into data mining big time. For example, Yahoo! collects between 12 and 15 terabytes of data each day, and Facebook has access to valuable information that its over 50 million users post. Both firms want to use the data to facilitate targeted advertising by clients who are willing to pay big bucks to get their online ads in front of people who are likely to buy.23

Even cellular providers are into the data mining act. Signals among phones and base stations can be detected by commercial sensing devices. Recent U.S. Supreme Court action has supported the position that the detailed records of who is calling whom belong entirely to the phone companies. Right now, they make little use of such data, in part because they fear alienating subscribers who worry about privacy infringement. But cellular operators have begun signing deals with business partners who are eager to market products based on specific phone users’ location and calling habits. Such reality mining is the collection and analysis of machine-sensed environmental data pertaining to human social behavior with the goal of identifying predictable patterns of behavior. It was declared to be one of the “10 technologies most likely to change the way we live” by Technology Review Magazine.24 If reality mining catches on, phone companies’ calling records will become precious assets. And these will only grow in value as customers use their phones to browse the Web, purchase products, and update their Facebook pages—and as marketers apply reality mining’s tool kit to these activities.25

Ripped from the Headlines

Ethical/Sustainable Decisions in the Real World

When you sign up for a loyalty card at your favorite retailer, you are giving away your personal information. When you like a product or company on Facebook, you are again giving up information about yourself. And when you make a purchase online—you guessed it. Meanwhile, data brokers are having a field day.

Data brokers are companies that collect and sell personal information about consumers, including their religion, ethnicity, user names, income, the medications they take, and more. And while companies and marketers have collected such information for years, with the popularity of the Internet, where you volunteer personal information on practically a daily basis, data brokers are able to collect more information about you than ever before. Have you downloaded the Angry Birds app or the Brightest Flashlight Free app? If so, you probably didn’t know these apps were tracking your movements and selling them to other companies. According to Federal Trade Commissioner Julie Brill, “Your smartphones are basically little mini tracking devices. And it’s collecting information about where you are traveling through the day.”26 Such information is a hot commodity to data brokers.

Data brokers then buy and sell such data from other data brokers to generate ever more detailed profiles of you, most often without your knowledge. Acxiom, the largest of the data brokers, acknowledges that it has, on average, 1,500 piece of information, or data points, on more than 200 million Americans. Want to get a glimpse into some of the things the company knows about you? Go to www.aboutthedata.com and prepare to be surprised.

In many cases, the collection of this information all boils down to a question of consumer privacy. For example, Target used data it had collected about female consumers to determine whether these customers were pregnant. In one case, the data were too accurate—a girl still in high school received coupons for baby clothes and cribs. Her father, who was initially outraged at the mailer and at Target, later found out from his teenage daughter that she was indeed pregnant.27

Other companies use such information to recruit for clinical trials. Blue Chip Marketing Worldwide found 9,000 patients whom its client needed to participate in a trial for a diet drug. By applying an algorithm to consumer profiles it had purchased, Blue Chip was able to flag clues about a person’s weight by identifying fast-food dining habits and a history of shopping online for clothes.28 (That’s one way to get around the Health Insurance Portability and Accountability Act, which prevents health care providers from sharing or selling personally identifiable information about patients.)

Still, the fact is that consumers leave clues about their health—and more—everywhere they go. But do others have a right to collect and profit from this information? What ethical issues arise in such cases?

Primary Data Types for Data Mining

As data mining techniques improve and software becomes more adept at understanding and analyzing information in its various formats, the ability to gain deeper insights about consumers from data is increasing. Data in electronic format can be considered either structured or unstructured. Structured data are what you might find in an Excel spreadsheet or in a statistics table on a sports website such as ESPN.com. Such data are typically either numeric or categorical; usually are organized and formatted in a way that is easy for computers...
Figure 5.4 | Structured and Unstructured Data Examples

Far more unstructured data than structured data are created on a daily basis through different business processes, but both have the potential to offer marketers greater insights into their customers and markets.

### Structured Data
- Date
- Time
- Census Data
- Facebook “Likes”

### Unstructured Data
- Body of Emails
- Tweets
- Facebook Status Update Messages
- Video Transcripts

Unstructured data
Nonnumeric information that is typically formatted in a way that is meant for human eyes and not easily understood by computers.

to read, organize, and understand; can be inserted into a database in a seamless fashion; and typically can be easily placed within rows and columns.

Unstructured data contain nonnumeric information that is typically formatted in a way that is meant for human eyes and not easily understood by computers. A good example of unstructured data is the body of an e-mail message. The e-mail carries a lot of meaning to a human but poses a greater challenge for a machine to understand or organize. Figure 5.4 lists other examples of different types of structured and unstructured data.

In the past, data mining and data analysis were focused on structured data because computers could easily analyze a large number of data points at one time. For instance, a baseball statistician can put into a computer all of the “at bats” that a player has had throughout the course of a season along with their outcomes and easily tell the computer to predict his batting average for the year (as well as a number of other useful measures). This output yields a better understanding of each player’s performance on the field.

It becomes more challenging—but also potentially more interesting—to derive meaning from large quantities of unstructured data. For instance, imagine that you are the social media manager for a company that sells candy bars and you spend a lot of time engaging with customers through Facebook and Twitter. You are lucky to have a lot of likes and followers and a high level of interaction as well, but you’re not satisfied with these data and believe that this is only the tip of the iceberg. In addition, you know that all of these comments from your customers could be a source of a lot of great information—the only problem is that there are thousands of them flooding in, and you’re only one person. How could you possibly find the time to effectively analyze their contents and discern valuable patterns from all of this information? Even a huge team would have significant challenges trying to cull through the vast amount of unstructured data customers create every day when they talk about different companies online.

Technology to the rescue! Significant advances in data-analytic technologies make the process of unstructured data analysis easier through the development of computer logic that can search through and extract patterns from large amounts of textual data. It also makes it more cost effective through the use of automated processes as opposed to manual intervention (imagine having to sift through every message by hand to pull out and record the information that you believed was meaningful). The other advantage is that these types of technologies give unstructured data a “structure,” enabling it to be shared and leveraged when combining it with data sources held elsewhere in an organization. Being able to leverage both structured and unstructured data in data mining efforts offers marketers the opportunity to gain a deeper understanding of their customers.

**Data Scientists: Transforming Big Data into Winning Information**

In Chapter 4, we talked about the important role of customer insights to marketing decision making. Being able to transform data into insights and leveraging data to enhance the way that organizations interact with consumers is a really challenging proposition. It is one that is executed by analysts with the help of powerful databases and complex
software. These analysts (also known as business intelligence developers or data scientists) are employed by the biggest names in technology. A **data scientist** is someone who searches through multiple, disparate data sources in order to discover hidden insights that will provide a competitive advantage.³¹ These individuals frequently have PhDs, often command six-figure starting salaries (according to Glassdoor.com, the median salary as of 2014 was $115,000), and are becoming an increasingly important source of competitive advantage for organizations that want to leverage Big Data. Traditional data analysts often looked at one data source, whereas data scientists typically look at multiple sources of data across the organization.³²

If you have ever used LinkedIn, you’ll be interested to learn that one of the most frequently used features on the site was developed through experimentation by one of the organization’s data scientists named Jonathan Goldman. Specifically, Goldman developed the “People You May Know” feature on the site, where LinkedIn users whom you may know in real life are shown three profiles at a time. Goldman accomplished this by developing a way to assess and score users based on common elements, such as shared tenures at educational institutions, and then sorting the profiles displayed through the feature from the highest to the lowest scores (to a limit). The idea was originally implemented as an advertisement on the site to generate interest in the message. Sure enough, the site’s managers discovered that this feature had a click rate that was 30 percent higher than average. Soon after that, top management within the organization signed off on adding “People You May Know” as a standard feature.³³

These and many other insights exemplify what data scientists are able to generate and the value they can yield for organizations. As more data become available from multiple sources, organizations will most likely continue to need people with the skill and curiosity to transform data into information (any interest on your part in being a data scientist?).

### Data Mining: Applications for Marketers

A key theme of this chapter and the previous chapter is that better understanding of both current and potential customers should be a central goal for all marketers. Every interaction the firm has with a consumer—every touchpoint, regardless of which department might facilitate the interaction—can provide valuable information for marketers to leverage. Data mining techniques that enhance the value of Big Data provide opportunities for marketers to increase organizational performance. To help identify the data needed for these efforts and bring them together, organizations often assemble teams of individuals from different functions, such as marketing, sales, in-store operations, and I.T. to help identify and gather the needed data sources for analysis.³⁴

As illustrated in Figure 5.5, data mining has four important applications for marketers:³⁵

1. **Customer acquisition:** Many firms include demographic and other information about customers in their database. For example, a number of supermarkets offer weekly special price discounts for store “members.” These stores’ membership application forms require that customers indicate their age, family size, address, and so on. With this information, the supermarket determines which of its current customers respond best to specific offers and then sends the same offers to noncustomers who share the same demographic characteristics.

2. **Customer retention and loyalty:** The firm identifies big-spending customers and then targets them for special offers and inducements other customers won’t receive. Keeping the most profitable customers coming back is a great way to build business success because—here we go again!—keeping good customers is less expensive than constantly finding new ones.³⁶

**data scientist**

An individual who searches through multiple, disparate data sources in order to discover hidden insights that will provide a competitive advantage.
3. **Customer abandonment:** Strange as it may sound, sometimes a firm wants customers to take their business elsewhere because servicing them actually costs the firm too much. Today, this is popularly called “firing a customer.” For example, a department store may use data mining to identify unprofitable customers—those who don’t spend enough or who return most of what they buy. Data mining has allowed Sprint to famously identify its customers as “the good, the bad, and the ugly.”

4. **Market basket analysis:** Develops focused promotional strategies based on the records of which customers have bought certain products. Hewlett-Packard, for example, carefully analyzes which of its customers recently bought new printers and targets them to receive e-mails about specials on ink cartridges and tips to get the most out of their machines.

### Marketing Analytics

Marketing analytics have become an increasingly important part of a marketer’s toolbox as technological advances enable consumers to engage in an increasing number of activities online that were previously possible only within the physical space. At its core, **marketing analytics** comprises a group of technologies and processes that enable marketers to collect, measure, analyze, and assess the effectiveness of marketing efforts. Marketing analytic solutions provide marketers with a holistic means of looking at the performance of different marketing initiatives. They are capable of providing a level of analysis and a degree of accuracy and speed that is crucial in our data-driven world. Put simply, then, marketing analytics takes the Big Data and makes sense out of it for use in marketing decision making! That is, the breadth and depth of information that today’s marketers have at their disposal require the ability to leverage technology that can move through massive and often disparate data sets to provide useful information that can power decisions and help marketers better understand the value of their investments.

There’s an old saying among marketers credited to John Wanamaker, a famous Philadelphia retailer of the late 1800s, that goes, “Half the money I spend on advertising is wasted; the trouble is, I don’t know which half.” The issue that this quote highlights—the need to be able to tie specific actions in advertising to measurable results (such as sales)—has been a long-standing challenge for marketers, and especially for those who have spent money on TV advertising, billboards, and other forms of traditional advertising, there is a real challenge in quantifying the value of those efforts. You may have seen a TV advertisement for...
McDonald’s featuring a Big Mac and chosen the next day to purchase one because of the advertisement, but how would anyone else know that it was that advertisement as opposed to any of the other marketing investments that McDonald’s has made? Enabling marketers to get a better sense through marketing analytics of what the ROI of each of their marketing channels is makes digital marketing an increasingly attractive option.

**Connect Digital Marketing Channels to Marketing Analytics**

One of the perennial primary challenges of marketers in the past (and still today) is being able to determine the effectiveness of different marketing campaigns and channels. This is because it is not always clear where a lead came from or what led to a purchase by a consumer without being able to track it from its origin. For instance, did a consumer learn about and ultimately purchase a product because of the commercial he or she saw on TV or because of the ad he or she viewed in a magazine, or perhaps both? For traditional media such as TV and magazines, it is still not always clear what actions yield the greatest impact for the marketer. However, with the proliferation of digital media and digital marketing channels, it has become more straightforward to understand what actions on the part of marketers drive consumers to ultimately make a decision that aligns with the interests of the organization.

For example, if a marketer places a banner ad on a website for a product and a user clicks on that ad (bringing up the product’s page on the website), where he or she ultimately purchases the product, marketers have the ability to trace that process directly back to the banner ad. All of those data can be captured digitally, and the marketer can gain assurance that his or her organization is getting satisfactory ROI for the ad. Better yet, the marketer can now measure that investment relative to its cost and identify how the company might make further improvements.

In order to understand the value that marketing analytics offers to organizations, it is important to recognize how much the way that we ingest information has changed over time. With more individuals having access to and spending time on the Internet, digital marketing has become an increasingly important element of the marketer’s toolbox. According to a survey conducted by Pew Research Center, 86 percent of Americans use the Internet (up from 14 percent in 1995), and 73 percent of Americans use at least one social networking site, with 42 using multiple social networking sites.39

Across the globe, more people use the Internet for an increasingly wider array of purposes. Who knows how many more functions will be made faster, easier, or more intuitive as developers continually introduce new apps. A survey by Gartner, a leading I.T. research and consulting firm, noted that in 2014, digital marketing budgets would increase by 10 percent, following up on a double-digit increase in digital marketing budgets for 2013. The data were compiled based on a survey conducted of respondents who answered for their organizations. Especially enlightening is the finding that 11 percent of those respondents noted that more than half of their budget was dedicated to digital marketing.40

The options for investment in digital marketing channels are diverse with consumers spending large amounts across a variety of options. Figure 5.6 illustrates the four major groupings of different digital marketing channels: social media, pay-per-click advertisements, search engines, and Email.

**Figure 5.6** Snapshot | Major Digital Marketing Channels

Digital marketing channels are typically broken up into four main categories. Within these, there are multiple types of marketing efforts and campaigns that marketers can develop and track.
Note that we will discuss digital advertising options that are available to marketers in detail in Chapter 13. For all of these entities, there is a lot of money to be made through the selling of advertising space to organizations. Facebook, which is used by over a billion people, offers users the ability to create a profile for free, but its business model relies heavily on being able to generate revenue through the selling of advertisements on the site. Increasingly, social networking sites are looking for creative ways to provide advertisements on their sites in a way that does not turn off users. The objective is to create a source of value for organizations that does not compromise the website’s user experience and relevance.

For marketers, investments in digital marketing are especially attractive because their cost is often directly tied to specific actions users take. For instance, Google’s paid search ads can be purchased or bid on based on a cost-per-click in which the cost of the advertisement is charged only each time an individual clicks on the advertisement and is directed to the Web page that the marketer placed within the advertisement. This method of charging for advertisements is common for online vendors of advertisement space. Other methods of purchasing advertisements digitally include cost-per-impression, in which the cost of the advertisement is charged each time the advertisement shows up on a page that the user views.

Companies that sell online advertising space commonly use both of these methods of charging for advertisements. Cost-per-click purchases of advertisements are typically more expensive, as they demand a higher level of interaction from the user (i.e., the users have actually visited the page on which the ad appears and hence are one step closer to becoming a customer). Cost-per-impression purchases of advertisements can provide a good value. However, advertisements that are purchased with a cost-per-impression structure typically require a greater leap of faith because it’s not so easy to measure the value of an impression (or view of an advertisement). For instance, if a marketer knew (or had a good idea) that a certain number of impressions from an advertisement translated into a specific number of clicks, then he or she would be able more accurately estimate the cost of the ad in terms of clicks even while using a cost-per-impression structure to price advertisements. In this way, the marketer would be able to obtain a better value through cost-per-impression pricing as opposed to cost-per-click pricing.

One advantage of digital marketing is that data come in at the speed at which data travel, which is almost instantaneous. This means that marketers can track the performance of digital marketing initiatives and determine their performance both in the very short term and over the long term. Marketing analytics enable them to capture these data across all of the channels in which they have invested and present the data in a way that provides valuable insights into the performance of each channel.

**Determine the Value of Digital Marketing Investments across Channels**

Imagine you have an e-commerce website selling specialty headphones and you have begun to invest in attracting new customers to your website. You’ve purchased some online banner advertisements that are being strategically shown to individuals who visit different music websites, and you’ve also purchased some ads on Facebook that are showing up as sponsored posts in people’s feeds who frequently “like” different indie rock bands’ pages. You’ve even looked into search engine optimization (SEO), which is a systematic process of ensuring that your firm comes up at or near the top of lists of typical search phrases related to your business. As a result, you’ve hired a SEO specialist to help ensure that your website ranks highly on search engines such as Google and Bing when people type in search phrases such as “high-quality headphones” and “best way to listen to music.”

Now that you have invested in your different marketing channels, you start to see that sales are increasing. It seems as though your investment in all of these different digital
marketing channels is paying off, but what if some are paying off more than others because their efforts are engaging more effectively with your target audience and in turn helping to create more sales? How would you determine this? Answer: Marketing analytics would enable you to analyze the performance of all of these channels to help you make the best investment of your marketing dollars moving forward. To understand what’s really working on your e-commerce site, you might look to see whether more sales come from your customers who arrive at your site because they typed a search term into Google or whether those who come there because they clicked on a Facebook ad spend more. Or you might find that the banner advertisements bring in relatively few customers and that the transactions they make are relatively small. If you compare the average cost per customer transaction from each of these channels against the average value of the customer transaction from each channel, it would become clear which channel provides your e-commerce site with the most value. You might even discover that one of these channels costs more than it wins in sales!

Without marketing analytics and data produced by digital marketing initiatives, this would have been more challenging to determine, and as a result there would have been more waste within your e-commerce site’s marketing mix. These are the types of challenging questions that companies such as Zappos.com and Overstock.com deal with every day as they look to ensure that their marketing investments provide a healthy ROI. Marketing analytics help them to better understand how their different marketing channels are performing.

It is worth noting that some caution can be beneficial when we examine marketing analytics data. For example, suppose an individual sees a TV advertisement for a product and decides to go online to learn more about it. At that point, he comes across a banner advertisement online that includes a coupon for the product. Then he clicks on the banner advertisement to redeem the coupon and buy the product. On the surface, to a marketer it might look as though all of the credit for the sale should go to the banner advertisement because the marketer has no awareness of the influence that the TV advertisement has had on the consumer, but, as we can see, that is not entirely accurate. The risk illustrated here is the misappropriation of the value that one particular effort has had in delivering a specific result.

Being able to determine the effectiveness of digital marketing depends on having clear goals that can be tracked and measured. In the case of an e-commerce site, the defined goal would most likely be a transaction with a consumer. However, for a business consulting company’s website, it might be getting a prospective client to submit a request for information about what the consulting company can do to help with their particular problem. And being able to tie these data into a CRM system that tracks the individual from the point of filling out a request for information to when he or she ultimately becomes a customer enables the company to look back at the specific digital marketing initiative that motivated that customer to come to the website in the first place, providing greater insight into what particular channels and factors help create new business.

This example serves to illustrate how different pieces of Big Data—in the form of the comprehensive information about a customer that resides in different parts of the organization (in this case, in the CRM system along with what is currently captured in the marketing analytics system for Web-based interactions)—can be brought together. Through the use of marketing analytics, these data can be transformed into a more complete picture of each customer as well as each marketing channel in order to better understand where future investments should be made or how current marketing campaigns should be adjusted. Understanding each customer’s full story enables marketers to better understand how to weave their own actions and communications into the fabric of that story in a way that is meaningful and compelling.
Predictive Analytics

Up to this point, we’ve looked how marketing analytics can be leveraged to better understand how current marketing channels and initiatives are performing—in other words, to understand how to validate the value of what decisions have already been made and potentially create fact-based triggers that will enable a marketer to better determine how to make future investments. Another intriguing area for any marketer is the ability to actually predict the future and thus better understand the value of their marketing campaigns even before they implement them. A harbinger of such clairvoyance came in the form of a highly publicized patent application by Amazon for a process it calls “anticipatory package shipping.” The idea is to develop a data driven system that will allow for starting delivery of packages even before customers click “buy.” Essentially, Amazon will be able to box and ship products it expects customers in a specific area will want but for which a specific customer order has not actually yet been placed. Getting the right goods moving like this could cut delivery time and thus dissuade customers from visiting brick-and-mortar retailers instead of shopping online.41

This crystal-ball scenario is where predictive analytics can increasingly provide significant value to marketers. These techniques use large quantities of data and variables that the analysts know relate to one another to more accurately predict specific future outcomes (the key with “predictive” analytics is this focus on the future, not just the present).42 To return to our earlier example, we may be able to make a very highly educated guess that a consumer will strongly consider the purchase of a hybrid vehicle. We can estimate this event even though we know nothing about his or her prior history of car buying—if we know enough about other things he or she buys and we can establish a pattern.

Now, organizations have used these techniques for decades in order to help forecast sales and other important measures of business performance and outcomes, but don’t fool yourself into thinking there’s nothing new or exciting within this area. Thanks to Big Data and the new-age data mining capabilities we’ve discussed, the types of future outcomes that can be predicted and the level of accuracy possible with those predictions now enables marketers to obtain more accuracy than ever before when they forecast successful future marketing investments.

Vodafone Netherlands is the second-largest mobile carrier in the Netherlands, and predictive analytics solutions seemed to be a strong choice to better understand the behavior of their customers and better predict future behaviors. As the organization’s senior information architect for business intelligence noted, “We have a reasonably large number of customers, a limited marketing budget, and the need to understand how to apply the money effectively and get the best results.”43 Vodafone had a wealth of information and wanted to have the capabilities to identify opportunities in order to more effectively predict consumer behavior and better tailor service offerings to consumers based on the information. One way that Vodafone was able to create value from predictive analytics was through the understanding of winter roaming patterns and, in particular, which of their customers were most likely to go skiing. Through the firm’s analysis, they were better able to identify and predict which customers would fall within the category of going skiing in the winter and target them exclusively with a campaign that was tailored to offer great value for winter roamers. What if they had they reached out with this offering to customers within their base who did not fall within this group? Most likely, it would have been a disaster, including not only additional costs but also potentially aggravated customers who felt they were being unnecessarily bothered (Marketing Rule #1: Never upset your current profitable customers). For phone carriers such as Vodafone, as well as most all marketers, finding that sweet spot of providing valuable services to customers when they are needed by those particular customers who would most appreciate them is mission critical in today’s global competitive marketplace. Predictive analytics and marketing analytics in general enable great execution of marketing strategies.
4

OBJECTIVE
Identify how organizations can use marketing metrics to measure performance and achieve marketing control.
(p. 143–144)

CHAPTER 5  MARKETING ANALYTICS: WELCOME TO THE ERA OF BIG DATA!  143

Metrics for Marketing Control

Throughout this chapter and also at different points throughout the text, we touch on different types of metrics and the benefit they provide to marketers (e.g., the “Metrics Moment” features in each chapter and the “Apply the Metrics” exercises at the end of each chapter). In a data-rich and data-driven world, organizations have the ability to gain a more detailed understanding than ever before of what’s going on both inside and outside their operations. For marketers, this means having the ability to show more clearly a return on their various investments and to use this knowledge to develop and execute marketing plans and strategies. Marketing metrics are specific measures that help marketers keep an eye on the performance of their marketing campaigns, initiatives, and channels and, when appropriate, serve as a control mechanism for when corrective action is necessary. Marketing control means the ability to identify deviations in expected performance, both positive and negative, as soon as they occur, thus enabling marketers to adjust their actions before greater losses or inefficiencies are realized. Another marketing control

Three Examples of Metrics

Here are three great examples of metrics that are relevant to a chapter on Big Data and marketing analytics. In them, the following symbols are used: $ = a monetary figure, % = a percentage figure, and # = a figure in units. Table 5.2 provides a summary of the metrics listed below as a point of reference.

Click-Through Rate

Within digital marketing, the click-through rate is a metric that indicates the percentage of users (viewers of the advertisement or the page that the link is on) who have decided to click on the advertisement in order to visit the website or Web page associated with the advertisement.34

\[
\text{Click-through rate} \, (\%) = \frac{\text{Click-throughs (#)}}{\text{Impressions (#)}} \times 100
\]

Most digital marketing campaigns or initiatives use click-through rates as a means of determining marketing effectiveness. Specifically, they indicate what percentage of users who viewed the ad found it relevant and interesting enough to click on it in order to be redirected to another Web page. However, from that point of landing on the Web page or website, the visitor could have chosen to immediately leave the Web page due to a lack of interest in the content on the page or for some other reason. Other metrics taken in tandem with click-through rates can provide a more complete picture.

Conversion Rate

A popular metric used to look at the effectiveness of digital marketing is the conversion rate, which is expressed as a percentage. A conversion is a result more resources are directed toward Facebook.

Conversion rate can be tracked on a day-to-day basis or provided as a cumulative value tied back to different marketing campaigns or channels in order to measure the impact of those activities and to answer questions, such as what is bringing customer to your site. It can also alert marketers to opportunities to take corrective action in order to improve the performance of their marketing efforts.

Cost-per-Order

Cost-per-order indicates the cost of gaining an order in terms of the marketing investment made to turn a website visitor into a customer who has chosen to make a transaction.44 Within digital marketing, this metric can be broken down by specific campaigns or marketing channels to help marketers get a more precise idea of how effective their marketing investments are:

\[
\text{Cost-per-order} \, ($) = \frac{\text{Advertising costs ($)}}{\text{Orders (#)}}
\]

For marketers, it provides a clearer idea of what the average cost in advertising dollars is to generate an order. For instance, one might learn that Facebook ads have a lower cost per order than YouTube video ads, and as a result more resources are directed toward Facebook.

Apply the Metrics

Consider the information generated by calculating click-through rate, conversion rate, and cost per order.

1. How does knowledge of the results of calculating these three aid marketers in making better investment decisions in Web strategies?

2. Do you think one of these metrics is more useful than the others? If so, what leads you to this opinion?
reason digital marketing is seeing increased growth in investment from marketers is the speed at which they can modify their investments in different media channels. For example, a charitable organization that detects an unusually high flow of donations from a Facebook campaign can almost instantly shift more resources to that channel to capitalize on the sudden interest.

Before we dive into marketing metrics, one point worth making is that it is typically not practical to use too many metrics at once to measure marketing effectiveness. Identifying the right metrics that are aligned with the desired outcomes of your marketing strategies ensures that the right controls are in place and that the organization focuses on aligning the most important outcomes with its marketing decisions.

For instance, imagine you’re the CMO for a laundry detergent producer. In order to bring in more business, you have decided to give your team full latitude to use the department’s resources to ramp up sales. You tell them that they are going to be judged by their ability to increase the number of detergent bottles sold. In the following few weeks, you’re pleased to see that the detergent seems to be flying off of supermarket shelves. But on further inspection, you also learn that despite the surge in sales, profits have not increased. As it turns out, your marketing team has been saturating the market with coupons for half-off detergent bottles, and this price promotion is what drove the influx of business. You console yourself that, although profits may not have been positively impacted due to the reduced prices people are paying for the brand, surely this effort will bring in more business over the long run as new customers try the brand because they received a coupon. Unfortunately, the marketing team did not do an effective job of targeting new customers. It turns out that the shoppers who redeemed the coupons were primarily regulars (existing users) of the product who just bought as they normally would but at a reduced price. As a result, sales actually decline over the next month. The reason: Customers who stocked up on laundry detergent in the past month continue to use their reserves of the product they purchased at a promotional price! Had the goals of the effort been more clearly defined and the right metrics selected related to both gaining market share and increasing sales, then perhaps a more targeted approach with better controls could have been implemented.
which included internal brand experts and an agency, analyzed category competitors’ brands and offerings to determine where best to position the cloud product. This analysis resulted in a brand promise the team labeled “change navigators.” As she interacted with people in the industry, Lisa also realized that the traditional term enterprise marketing management wasn’t a good label to convey what the new product would offer to the target audience. This term conveyed the idea of “big and heavy,” highly complex software, which was the opposite of the simplicity marketers wanted from the cloud. The company’s researchers discovered that if Teradata simply substituted the word integrated for enterprise, customers would feel much better about the offering. This insight led Lisa’s team to develop a new category it called integrated marketing management (IMM) that Teradata could offer to clients. The revised description encouraged CMOs and their terms who truly wanted to integrate marketing—its processes, its technology data, and its people—to think about Aprimo’s services in terms of a forward-looking cloud-based technology option for all of their organization’s marketing needs.

Lisa’s team launched the cloud product at a major industry trade show, even as they continued to apply the data from their research to the creative development of the Teradata brand. The team followed the show with a media and analyst tour to communicate the new direction the brand was heading and to solicit feedback from industry thought leaders. This groundwork allowed the team to relaunch the Teradata brand at the Aprimo Marketing Summit, which is the company’s major customer conference. The relaunch took the form of a visually impactful, emotion-based branding and repositioning campaign known as “The Marketing Revolution.”

The market took notice. Analysts described the visuals as “arresting” and “visceral,” and the launch captured the market’s attention. A major analyst firm welcomed the new approach so much that it renamed its annual category research report “Integrated Marketing Management.” Teradata was well positioned as the thought leader in this emerging IMM space within 10 months of the relaunch.

**How Teradata Measures Success**

Lisa developed a six-prong scorecard to measure the following:

- **Demand generation:** Based on marketing qualified leads.
- **Customer satisfaction:** Based on a NetPromoterScore (as an aside, everyone in the company had their compensation tied to this metric, not just marketing).
- **Sales productivity:** Based on conversions, that is, moving from identified opportunities to closed business wins.
- **Market leadership:** The team benchmarked brand awareness (aided and unaided) in the industry.
- **Marketing effectiveness:** This metric was measured on the health of the outcomes of the four categories and on measuring the return on marketing investment.
- **Return on marketing investment:** The team tracked the demand generation spend and then the value it brought in from revenue.

Refer back to page 124 for Lisa’s story.

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Objective Summary ➔ Key Terms ➔ Apply

CHAPTER 5

1. Objective Summary (pp. 126–130)

Explain how marketers increase long-term success and profits by practicing customer relationship management.

Companies using CRM programs establish relationships and differentiate their behavior toward individual customers on a one-to-one basis through dialogue and feedback. Success is often measured one customer at a time using the concepts of share of customer, lifetime value of the customer, and customer equity. In CRM strategies, customers are prioritized according to their value to the firm, and communication is customized accordingly. CRM also provides marketers with the means to better tailor their communications to customers based on the wealth of data that is being effectively captured and organized within the system.

Key Terms

- customer relationship management (CRM), p. 126
- one-to-one marketing, p. 126
- touchpoint, p. 126
- share of customer, p. 129
- customer equity, p. 129

2. Objective Summary (pp. 130–138)

Understand Big Data, data mining, and how marketers can put these techniques to good use.

Big Data refers to data that are growing in terms of both volume and velocity. It comes from a wider range of sources within different functions within organizations as well as society at large. Big Data offers marketers the ability to gain a deeper understanding of their customers when properly leveraged through methods such as data mining. When marketers utilize data mining, they methodically sift through large data sets using computers that run sophisticated programs to understand relationships among things like consumer buying decisions, exposure to marketing messages, and in-store promotions. Data mining leads to the ability to make important decisions about which customers to invest in further, which to abandon, and where the greatest opportunities for new investments lie.

Key Terms

- Big Data, p. 130
- Internet of Things, p. 130
- Web scraping, p. 132
- sentiment analysis, p. 132

3. Objective Summary (pp. 138–142)

Describe what marketing analytics include and how organizations can leverage both marketing analytics and predictive analytics to improve marketing performance.

Marketing analytics offer marketers the means of better understanding and analyzing the wealth of data that are now at their disposal. With the proliferation of digital marketing and the speed at which data can be captured and analyzed, marketers are able to gain insights at or near real time in regard to the performance of their marketing investments. This capability to analyze across channels the performance of their different marketing initiatives provides a means through which to more precisely identify where value is being created. Predictive analytics have the potential to help marketers identify outcomes before they occur and in turn make smarter decisions as they plan marketing campaigns and investments.

Key Terms

- marketing analytics, p. 138
- cost-per-click, p. 140
- cost-per-impression, p. 140
- search engine optimization (SEO), p. 140
- predictive analytics, p. 142

4. Objective Summary (pp. 143–144)

Identify how organizations can use marketing metrics to measure performance and achieve marketing control.

Marketing metrics provide marketers with the means to further understand the performance of their marketing campaigns and channels and a means of identifying potential red flags or opportunities as they arise. Increases in the popularity of digital marketing as well as tools that are able to easily capture...
data online have enabled marketers to track marketing performance at a level of detail that was either not possible or not cost effective in the past. The marketing metrics provided in this section were just a small sampling, but they do provide some examples of what kinds of metrics can be used to help ensure that marketing control is achieved. Through the selection of the right metrics, marketers are better able to understand the performance of their marketing activities, identify opportunities for improvement, and take corrective actions at a point where greater benefits can be realized.

Key Terms

marketing metrics, p. 143
marketing control, p. 143
click-through, p. 143
conversion, p. 143
cost-per-order, p. 143

Chapter Questions and Activities

Concepts: Test Your Knowledge

5-1. What is CRM? How do firms practice CRM?
5-2. Explain the concepts of share of customer, lifetime value of a customer, customer equity, and customer prioritization.
5-3. How would you describe Big Data? What are some of the most significant sources of competitive advantage that Big Data offers?
5-4. Describe the various sources of Big Data for marketers.
5-5. What is data mining? For marketers, what are some of the most important applications?
5-6. What is the difference between structured and unstructured data? What are some examples of each?
5-7. What are marketing analytics, and what kinds of insights are enabled by today’s marketing analytics solutions? What are predictive analytics?
5-8. What is the difference between purchasing digital advertisements with a cost-per-impression structure versus a cost-per-click structure? Is one better than the other?
5-9. Define marketing metrics. How can marketing metrics help marketers understand the performance of different marketing initiatives and provide greater control?
5-10. What is a click-through rate, and how is it calculated?
5-11. What is a conversion? What are some examples of conversions on an e-commerce website?
5-12. What is a cost-per-order? What kind of information do marketers gain from this metric?

Activities: Apply What You’ve Learned

5-13. Creative Homework/Short Project Assume that you are in charge of developing and opening a new restaurant concept for a large national restaurant company. The concept will be opened for a test-pilot run in a city that your boss has picked out. Not being familiar with the city or its inhabitants, you are hesitant to proceed without collecting some data first.

a. Outline the sources of data that you would use to help determine what the concept should be in terms of food, appearance, service, and where the test pilot location should be placed.

b. For each source of data, list specific information that you would try to look for and explain how it would enable you to make a better decision in regard to all the previously mentioned considerations.

5-14. Creative Homework/Short Project Imagine that you are building your own e-commerce site. Having a keen understanding of the importance of defining and putting in place a set of conversions and metrics in advance of launching the site, you have incorporated the definitions and development of specific conversions for tracking into the planning of the website. List which actions on the site would indicate a conversion for tracking purposes and how they would align with the goals of your business. Since this is your website, feel free to assume the inclusion of any sorts of features or elements (conventional or unconventional) that you believe would be valuable in terms of the website’s look and feel that would enable better tracking and analysis of marketing performance.

5-15. Creative Homework/Short Project Consider that you are in charge of all paid search advertising through Google for your company. One of your colleagues is in charge of Instagram advertising. Your boss is in the process of putting together the marketing budget and has asked you to weigh in on how much should be allotted for Facebook advertising. He tells you that he feels that the organization’s funds would be better put toward increasing spending on Instagram as opposed to Google paid search advertisements. He says, “Pictures on Instagram are just more compelling than little blocks of text in a search engine’s results.” You couldn’t agree less with that sentiment, and you have the data to back it up.

a. How would you go about making the argument that Google paid search advertisements should receive more of the marketing budget compared to Instagram advertisements? What factors in your boss’s statement above are potentially not taking this into consideration?

b. What metrics would you use to help make your case, and how would you explain their relevance and importance?

5-16. In Class, 10–25 Minutes for Teams As a brand manager, you are interested in exploring predictive analytics. With another student who is acting as your marketing manager, discuss the reasons that predictive analytics might be of value to your marketing campaigns. Be sure to discuss any areas where you might need to proceed with caution.
Apply Marketing Metrics

In the chapter discussion about CRM, you read about four key characteristics of CRM: share of customer, lifetime value of a customer, customer equity, and customer prioritization. Each of these elements is discussed in the context of monitoring and assessing the effectiveness of a CRM initiative.

Consider J. C. Penney’s loyalty program, JCP Rewards. Go to their website (www.jcprewards.com) and review the information about their reward program.

5-17. In what ways could J. C. Penney expect to measure the four elements of CRM above within the context of a reward program such as this?

5-18. How would data be collected for each element, and how might management at J. C. Penney utilize that data to provide loyal customers with a very strong relationship with the firm?

Choices: What Do You Think?

5-19. Ethics CRM relies on data collected from customers to create customized or one-to-one experiences for those customers. Data are collected at various touchpoints—places in which the customer interfaces with the firm to provide information, such as at a checkout lane, on the phone, on the website, and so on. Do firms have an obligation to explain to customers that they are collecting information from them to populate and drive their CRM initiative, or is it inherently obvious in today’s world that such practices are routine? In general, what is your personal viewpoint of database-driven positioning strategies? What are the potential pros and cons to the company and to the customer?

5-20. Ethics The Internet of Things means the increased proliferation of devices that are connected to the Internet and that in turn can be connected to each other. While there are a number of benefits to this level of connectivity for both society and businesses, there are also a number of risks and ethical issues. What are some of the risks and ethical issues that stem from this? Do the benefits outweigh the costs? What physical objects would you consider not allowing to be connected through the Internet, and why?

5-21. Critical Thinking Spending on digital marketing has trended upward in recent years, and with so many individuals using the Internet for extended periods of time, it is easy to understand why. In some cases, some organizations spend more than half of their budget on digital marketing. How do you think they justify committing more than half of their budget to marketing to digital efforts? Do you believe that more companies should invest primarily in digital marketing? What groups or factors would indicate to you that digital marketing does not make sense as an investment?

5-22. Critical Thinking A study conducted by Adobe found that 77 percent of marketers surveyed believe that data on customer purchase histories can improve marketing performance, yet only 21 percent actually use it. Similarly, 88 percent believe that behavioral data can have a similar impact, but only 20 percent use it. These statistics highlight a contradiction between the perception of marketing analytics’ value and the actual frequency of execution of marketing analytics. Why do you think this is? If you were in charge of implementing marketing analytics into an organization, what hurdles would you expect to encounter and from whom, and how would you overcome them?

Miniproject: Learn by Doing

Different types of businesses use different approaches to engaging with both current and potential consumers online. A company’s website is usually a key source of information for potential and current customers. The purpose of this project is to gain a deeper understanding of how marketing analytics can be implemented in order to gain greater insights into and enable more effective control of marketing efforts.

a. Select three company websites. These should include one ecommerce site (e.g., Amazon), one consulting company (e.g., IBM), and one consumer packaged goods company (e.g., Tide).

b. For each company’s website, list what you believe the objectives of the organization are as communicated through the website and identify specific conversion actions on the website that would most closely align with these goals. For example, customer acquisition might be supported and ultimately achieved by getting users to sign up for an e-mail newsletter, which would be defined as a conversion action.

5-23. Rank the conversion actions in order of importance and include an explanation of why you have ordered them as such. Identify whether they are short-term oriented as they relate to the organization’s objectives or long-term-oriented (or, in some cases, both) and why.

5-24. If you could choose only two marketing metrics (remember metrics, not conversions) to track for each of these websites, identify which two you would select for each website and explain why.

5-25. Some of the websites visited should have a request-for-information form on them. Often, this is one of the ways that marketers begin to collect information on a customer to place within their CRM system. Locate this form and identify what information it is asking for. Write down the different potential uses of this information for the organization and in what ways it might be used by marketers to further engage with the customer. What are some creative ways that you would recommend leveraging these data for each website analyzed in terms of future communications?
Marketing in Action Case

Real Choices at State Farm

How safe is your driving? State Farm wants to use customers’ Big Data to find out. Some drivers are willing to have a small device installed into their cars to monitor, record, and analyze all of their driving habits. This assortment of information is at the center of State Farm’s “Drive Safe & Save” program. The program uses a vehicle’s communication system (i.e., OnStar) to collect basic information about the customer’s driving.

Drivers believe that the collection of their own Big Data will lead to substantial discounts. The phenomenon of collecting as much customer data as possible is sweeping through the $167 billion industry. The use of Big Data to improve insurance offerings by insurers may not be well received by privacy advocates. Some critics see this as an overreaching effort by Big Brother to infiltrate customers’ lives.

State Farm was founded in 1922 by retired farmer and insurance salesman George J. Mecherle. His original vision for the company was to operate fairly and do the right thing for its customers. The company is owned by its policyholders and has over 17,000 agent offices servicing 81 million policies and accounts throughout the U.S. and Canada. Since 1942, the company is the largest auto insurer in the U.S. About one of every five cars on the road in the U.S. is insured with State Farm. In this effort, State Farm handles nearly 35,000 claims per day.

Historically, the pricing of insurance rates relied primarily on customer characteristics such as driving record, age, gender, marital status, and residence. To a lesser extent, the make and model of car, credit-based insurance score, car usage, and prior insurance history are also used. The information is then correlated with potential losses. However, many insurers recognized that those factors do not always lead to the best rates. The “Drive Safe & Save” program is voluntary to customers. To a lesser extent, the make and model of car, credit-based insurance score, car usage, and prior insurance history are also used. The information is then correlated with potential losses. However, many insurers recognized that those factors do not always lead to the best rates. The “Drive Safe & Save” program is voluntary to customers. According to State Farm, each good driver is able to earn discounts, and bad drivers are charged only the rates they are currently paying. State Farm’s potential discounts can run as high as 50 percent. The company believes that the feedback from the data will alert poor drivers to their actual driving habits and thus make them better drivers. Better drivers lead to fewer claims. Fewer claims lead to more profits for State Farm.

The advent of Big Data has led to many privacy fears. For example, the Privacy Rights Clearinghouse, a nonprofit consumer education and advocacy project, suggests that insurers could easily track a customer’s driving routes, potentially leading to a log of a customer’s travels. How will these data be shared? For instance, will the data be shared with law enforcement? In response, State Farm says that it receives only data “about the broad geographic areas” of drivers, not exact vehicle locations.

State Farm is not the only insurance company implementing Big Data. Progressive is the pioneer in tracking driving data with its “Snapshot” program. It has over 10 years of experience with the process. Allstate has released its “Drivewise” program across the country and is gaining experience. How will State Farm get the “Drive Safe & Save” program to stand out in a crowded field? How will State Farm use these customer data to lead to the best prices for customers while growing profits?

You Make the Call

5-26. What is the decision facing State Farm?
5-27. What factors are important in understanding this decision situation?
5-28. What are the alternatives?
5-29. What decision(s) do you recommend?
5-30. What are some ways to implement your recommendation?


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Go to mymktlab.com for Auto-graded writing questions as well as the following Assisted-graded writing questions:

5-31. Creative Homework/Short Project. Assume that a firm hires you as marketing manager for a chain of retail bookstores. You believe that the firm should develop a CRM strategy. Outline the steps you would take in developing that strategy.

5-32. Creative Homework/Short Project. Your boss has been hearing about the importance of Big Data and data mining to marketers. Write a memo to your boss that describes the various applications that data mining has for marketers in order to convince him that the company should explore this topic.