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# Behavioral Analytics

FOR  
**DUMMIES<sup>®</sup>**

## **Learn to:**

- Turn customer data into action
- Find profits in customer patterns
- Apply behavioral insights today

**Jennifer LeClaire**  
**Jason Rushin**





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We hope you find *Behavioral Analytics For Dummies* enlightening, and that this book increases your excitement around the promise of Behavioral Analytics.

For more information, visit [www.quantivo.com](http://www.quantivo.com).

# ***Behavioral Analytics*** FOR **DUMMIES®**

**by Jennifer LeClaire  
and Jason Rushin**



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# Introduction

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**I**f you've ever wondered why your customers do what they do, then you're going to love the world of Behavioral Analytics. You'll also love the insights this book offers about the principles and tools you can use to discover behaviors among various customer groups. And you'll be intrigued by the reasons we believe Behavioral Analytics will revolutionize Business Intelligence.

Behavioral Analytics may sound “big brotherish,” but it really isn't. Behavioral Analytics relies on the data your company collects to uncover behavior patterns that help you get more customers, keep the customers you have — and keep them spending — and grow your revenues and profits. In this book, you find out how Behavioral Analytics can offer up information that you can't easily or quickly obtain any other way. Welcome to *Behavioral Analytics For Dummies*.

## Conventions Used in This Book

*Italic* type indicates a defined term or something we want to emphasize. **Boldface** highlights the key word in a bulleted list and the action in a set of steps.

You see text in gray boxes occasionally. These *sidebars* contain information you may find interesting, but you don't need to master it to understand the topic at hand.

## Icons Used in This Book

No *For Dummies* book would be complete without icons in the margins to call attention to certain text. Here are the icons we use in this book.



Points to keep in mind as you immerse yourself in the world of Behavioral Analytics are highlighted with this icon.



We're Behavioral Analytics aficionados, but we realize that you don't necessarily need to know everything we do. This icon tells you that the text here is pretty detailed, and you can skip it if you like.



Right-on-target information you can use to help you make the most of any investment in Behavioral Analytics is next to this bull's-eye.



The Warning icon does just that in an effort to help you avoid common mistakes, misconceptions, myths, and pitfalls. Be sure to look for it so you don't do more harm than good as you wade through the world of Behavioral Analytics.

## *How This Book Is Organized*

The six chapters in this book lead you into the world of Behavioral Analytics. Here's what we cover.

- ✓ **Chapter 1, Understanding Behavioral Analytics**, explains Behavioral Analytics, its benefits, and how to get started.
- ✓ **Chapter 2, Comparing Different Analytical Approaches**, looks at various data analysis techniques and compares them to this emerging field.
- ✓ **Chapter 3, Driving Action with Behavioral Analytics**, explores the unique benefits of Behavioral Analytics, how to get actionable answers, and how to focus on behavior patterns.
- ✓ **Chapter 4, Applying Behavioral Analytics to Real Business Challenges**, explains how to put Behavioral Analytics to work across your company, from Web Analytics to customer support programs.
- ✓ **Chapter 5, Choosing a Behavioral Analytics Solution**, helps you understand the Behavioral Analytics landscape and what features and capabilities you should look for.
- ✓ **Chapter 6, Ten Revolutionary Benefits of Behavioral Analytics**, gives you plenty of reasons to start using Behavioral Analytics today.

The chapters are designed to stand alone, so if you're dying to know about how to apply Behavioral Analytics, head straight to Chapter 4; if you want to choose a Behavioral Analytics solution, turn to Chapter 5; or just turn the page and keep on going.



# Chapter 1

---

# Understanding Behavioral Analytics

.....

## *In This Chapter*

- ▶ Understanding what Behavioral Analytics is
  - ▶ Taking a look at who can benefit from Behavioral Analytics
  - ▶ Using analytics to ratchet up your business
  - ▶ Jumping in
- .....

**H**uman behavior is dynamic. Some people are creatures of habit and cautious. Others are spontaneous risk-takers. Some lead, others follow. And, to add to that, any random event can completely change people's actions. What you don't know about human behavior could be hurting your business.

But don't worry. You don't need to be a psychologist to take actions that drive more revenue to the bottom line. You just need to unleash the power of Behavioral Analytics. When you do, you'll get insights into customer behaviors that help you get more of the right customers, keep the customers you have (and keep them spending), and grow your revenues.

In this chapter, we explore the concept of Behavioral Analytics, how companies like yours are using it to make better, more profitable business decisions, and how to get started down the road to valuable behavioral insights. What you discover is that, unlike other analytics tools that require hours of training, Behavioral Analytics is easy enough for anyone in your organization to begin picking up on actionable insights that result in true business value.

# *What Is Behavioral Analytics?*

Behavioral Analytics holds the key to unlocking meaningful patterns of behavior in human interaction data. Put another way, Behavioral Analytics identifies clusters of people that demonstrate a tendency to take similar actions such as clicking certain pages on your Web site, making purchases online or in your bricks-and-mortar store, responding to marketing offers, and so on.

Typical analytics offers a view into the past. That's helpful for drawing up operational reports, gathering metrics, and tracking Key Performance Indicators (KPIs). But Behavioral Analytics kicks it up a notch by drawing from the past to give you insights into the future. Behavioral Analytics examines patterns in customer actions, and more importantly, determines the relationship between those actions. These tools can pinpoint what actions lead to other actions, which makes your focus crystal clear. For example, Behavioral Analytics can suggest which actions lead to a sale — a valuable insight for companies looking to increase conversion rates. If you know what led to a sale, you can make adjustments to optimize around that experience.

## *All about affinities*

Behavioral Analytics doesn't stop there. It drills down even deeper to combine behaviors with affinities so that you can see how customers who take certain actions have a positive or negative tendency to take specific subsequent actions. For example, if you determine that most customers who call your 800 number after visiting your Web site make a purchase, you can then optimize your Web site to drive calls to your customer service agents and potentially increase sales.

The magic behind affinities is pinpointing the strength of patterns. (To find out more about patterns, see Chapter 3.) Another good example is found in your local grocery store.

Behavioral Analytics data reveals that shoppers who have cookies in their cart are highly likely to also have milk. In Behavioral Analytics terms, that means that cookie buyers have a high affinity to milk. But it doesn't work the other way around. Data reveals nearly every grocery cart in the store contains a carton of milk but not necessarily cookies, so milk sales don't drive

cookie sales. In other words, with milk as the focus, there isn't a high affinity to cookies. The measurement of that affinity's strength is only one example of what separates Behavioral Analytics from just "analytics."

Imagine how long it would take a grocery store chain to come to that conclusion by manually wading through sales reports in search of this pattern. This insight might be forever buried, and opportunities to sell more cookies through strategic promotions could be missed. Behavioral Analytics combs through billions of records in a flash to offer these types of valuable insights.

## *Powering up with Behavioral Analytics tools*

Behavioral Analytics tools are especially critical for companies wading through the realities of a down economy — but they are just as valuable when business is booming. That's because these tools not only offer keen insights into what's happening in your businesses, but they also predict potential market risks so that you're prepared to move rapidly as markets change. That speed becomes even more important as social media and mobile computing continue to collapse trend development times from months to minutes.

By tapping into Behavioral Analytics, you can spot problems in your product mix and business processes before they arise, identify where new customers are emerging, why existing ones are leaving, what products they want to buy, what content they want to consume, how they make decisions, what prices they are willing to pay — and much more.



Behavioral Analytics tools drive real revenue growth because they show companies in no uncertain terms where to act, where to adjust strategies, and where to change engrained business processes to maximize profitability. Behavioral Analytics is the action hero of the analytics world, getting the job done when nothing else can.

Behavioral Analytics can help you spot patterns in customer behavior and customer-facing processes that traditional Business Intelligence (BI) tools could never surface — and show you which business paths to take toward improvements.

## Who Should Use Behavioral Analytics?

Behavioral Analytics is revolutionizing how companies study and act on customer behavior. If you want to uncover key factors that drive sales, identify tactics that increase customer lifetime value, discover patterns in *clickstreams* (the recorded path a visitor takes through your Web site), and otherwise drive more value from your customer data, it's time to jump on the Behavioral Analytics bandwagon.



No two industries are exactly alike, but Behavioral Analytics can discover profit-driving insights in any customer-focused business, whether it's business-to-consumer (B2C), business-to-business (B2B), brick-and-mortar, or online.

## How Can Behavioral Analytics Help My Company?

Behavioral Analytics can arm you with the information you need to take intelligent actions that drive positive results for your company. Behavioral Analytics offers your company the big picture. You can connect once-segregated data across multiple systems to identify customer interactions and behaviors across multiple departments.

For example, a customer may view your Web site, receive marketing materials, call customer support, interact with sales, and use a loyalty card to gather points — all over many weeks. Behavioral Analytics lets you merge all of these disparate datasets to discover holistic customer behaviors by using a customer ID, login, order number, or credit card number to track the customer through this process — even if the customer didn't make it all the way through. Through these connections, you can then determine, for example, that customers who download a third white paper and have spoken to a customer service rep tend to make a purchase within 20 days. In the following sections, we take a look at the ways Behavioral Analytics can help your company.

## The future of Behavioral Analytics

Behavioral Analytics is emerging as a must-have technology for customer-focused businesses. But that's just the beginning. Behavioral Analytics companies are poised to enter new areas of data analysis, especially as the volumes of collected customer data continue to explode. Indeed, there are yet-to-

be-discovered Behavioral Analytics applications. With its ability to quickly uncover patterns across billions of data points, it's easy to see how biotechnology companies, scientists, social services, and many others who handle massive amounts of data can find value in Behavioral Analytics.

### *CRM analysis*

Customer Relationship Management (CRM) is a critical component of your company's success. Behavioral Analytics helps you discover which interactions and channels drive conversions, purchases, returns, and support calls. With this information, you can learn to predict and guide your customers toward the desired behavior or the most cost-effective channel.

### *Loyalty analysis*

It's easier and cheaper to keep a customer than to get a new one. Behavioral Analytics reveals the attributes that make customers loyal, how their affinities differ, and what strategies are most effective at acquiring, retaining, and keeping those customers active.

### *Marketing effectiveness*

Stretching your marketing budget allows you to reach more customers with your message. Behavioral Analytics offers insights that help you optimize marketing strategies and tactics by segmenting customers by behaviors, identifying the most effective campaigns, and better targeting various messages, offers, and channels.

## *Merchandising planning*

Merchandising is half art and half science. Behavioral Analytics helps you understand what products are selling in combination with other products, who is buying your products, and other insights that help you improve stocking, layouts, and buying strategies.

## *Promotion effectiveness*

You've already learned from experience that some promotions are more effective than others — but do you know why? You can focus your promotions with laser precision by understanding customer response behaviors across segments, channels, and categories, and exploiting that impact on transaction size, sales, and margins.



Here's a key point of differentiation: Most companies segment on standard demographic data, such as age, gender, company size, region, and so on. The truth is those demographics may not have any correlation with the behavior you desire. Behavioral Analytics allows you to segment on any combination of aspects across both demographics *and* behavior.

## *Purchase analysis*

Your sales reports show you how much of any given product or service your customers are purchasing. Behavioral Analytics helps you discover the patterns within those purchases, from market basket analysis to purchases over time to the most profitable geographies and store layouts so you can leverage their relationships to different customer segments.

## *Web Analytics*

Web Analytics collects valuable information about what visitors are doing on your Web site. But when you combine the insights of Web Analytics with Behavioral Analytics, you uncover factors that impact online behavior, traffic patterns, and *monetization*, or making money. You also identify which content drives more traffic, more clicks, and more sales.

## Getting Started

With so many benefits to Behavioral Analytics, you are probably eager to see these tools in action. Before you can run an analysis, though, you need to prepare your data and your team for what lies ahead. Here are three simple steps to get your company on the road to business insight success.

### *Step 1: Start with a straightforward project*

For companies selling to customers, a market basket analysis is usually simple, yet valuable. A *market basket analysis* evaluates the attachments among items purchased or viewed by the same person — regardless of channel — giving you an accurate picture of which items are related and how promotions impact margins. You can also get insight into which products are important to whom, and if an item drives sales or views of any related items. Analyzed against demographic, transactional, and market data, market basket analytics are the cornerstone of any affinity analytics program.

On the Web, you can look at visitor value and analyze sessions or users, giving you deep insights into how your visitors behave on a single visit to your site, or how their behavior changes over multiple visits.



For a B2B company, a good place to start is lead analysis. Behavioral Analytics allow a B2B company to spot the leads that are closing the fastest and see which offers sent to which customers at which time generated the highest close rates. (You know you have 100 leads in the pipeline. Your first Behavioral Analytics project can tell you which to focus on and which tactics to use.) Later, you can get more sophisticated by analyzing the effectiveness of individual marketing campaigns, close rates in different regions and industries, and so on.

### *Step 2: Involve business managers*

From the get-go, include the business managers and executives in the Behavioral Analytics project. Ask for their pain points to determine what insights they are lacking. Once the

Behavioral Analytics program is launched, disseminate key customer behavior analysis results to the right people — those who make business decisions based on the findings.



Make sure your Behavioral Analytics software has an easy-to-use interface and simple analysis tools so non-expert users can ask questions (not code query languages), understand (not interpret), and quickly act upon (not wait for) timely customer behavior and corporate process patterns. (We discuss how to select a Behavioral Analytics vendor in Chapter 5.)

## *Step 3: Gather your data*

Determine which of your customer and corporate data is of high quality and ready to be analyzed. Your data warehouse is always a great choice. Another easy-to-access source of data is a Web Analytics system. These systems offer mountains of data that is frequently difficult to analyze with traditional tools, and your Web site is a dynamic channel that can be quickly adjusted and will quickly show results.

If you are planning to pull together multiple data sets from multiple systems, be sure that the data connections exist, such as customer IDs or credit card numbers.

REMEMBER



### **For analysts only? Hardly!**

You've probably noticed all the seminars, workshops, and even college courses dedicated to Web Analytics and Business Intelligence tools. In order to drive real value with these tools, you almost need a college degree! Sure, you can drive simple insights from programs like Google Analytics, but to get real value from advanced analytics tools, you need a keen understanding of computer logic and statistics.

Not so with Behavioral Analytics!

Behavioral Analytics is not just for highly trained business analysts with university pedigrees. Anybody in your organization — from your marketing guru to your business development manager to your Web editor, heck, even to your sales people — can use Behavioral Analytics to drive actionable insights immediately. As a matter of fact, these “front-line workers” should be expected to pick up the cause. It's just that important to your business.



## Chapter 2

# Comparing Different Analytical Approaches

### *In This Chapter*

- ▶ Counting on Business Intelligence
- ▶ Relying on Predictive Analytics
- ▶ Looking at Web Analytics
- ▶ Understanding the value of Behavioral Analytics
- ▶ Seeing how Behavioral Analytics works with other analytics
- ▶ Mapping out how you use Behavioral Analytics

**D**ata analytics is nothing new. Data mining has been around as long as statistics, but the concept started to gain widespread momentum in Corporate America in the 1990s. That's when software companies began developing sophisticated technologies to sift through what they then considered mountains of data with much more depth than ever before possible.

Since then, we've seen the rise of Business Intelligence (BI), specific types of BI such as Predictive Analytics, and specific BI applications such as Web Analytics — all steps toward the advent of Behavioral Analytics. Plus, we've seen the amount of data collected increase exponentially. Indeed, there are many different approaches to data analytics, and each one offers valuable insights. But, Behavioral Analytics goes a few steps beyond reporting statistics to analyzing behaviors and even the drivers of those behaviors.

In order to fully understand the benefits of Behavioral Analytics, it's important to get the big picture of the overall data analytics landscape — and where Behavioral Analytics fits into that picture. Behavioral Analytics doesn't do away with BI, Predictive Analytics, or Web Analytics, rather it works with

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those tools to provide insights that help you get more customers, keep them happy and spending, and grow your profits, clicks, or any other behaviors.

In this chapter, we give you a quick overview of the opportunities and limitations of the prevalent types of data analytics companies use today, and show you how they fit together. We also give you the different approaches to Behavioral Analytics so that you can decide which one is right for your business.

# *Relying On Business Intelligence*

Many companies are relying on BI tools to glean insights into business performance. BI tools aim to simplify information discovery and analysis so decision-makers can access, understand, analyze, collaborate, and act on information. BI software deals with measuring, managing, and improving the performance of everything from individuals and processes to teams and business units.

## *Understanding the value of Business Intelligence*

While many companies are still struggling with simple reporting requirements, leading organizations use BI software to identify unprofitable products so they can phase them out, unprofitable customers so they can target their marketing efforts to the spenders, and unproductive employees so they can take the proper remedial actions.



BI is especially valuable for creating operational reports, managing key performance indicators, and understanding other measures of how your business is performing. It gives you a great snapshot of your business today. BI is a must-have for financial models, operations, and logistics. But BI has its limits.

## *Taking a broad-brush approach to customer insights*

BI software tools take a broad-brush approach to customer insights. In other words, this software looks at the overall

population and general volumes. That makes BI a powerful tool for seeing what happened, but far less helpful in understanding what to do next.



Advanced BI tools require monolithic, proprietary, massive applications that require PhDs and statisticians to code complex models to answer even relatively simple questions. Larger companies require you to submit formal analysis requests that take days to filter through the queue. Even then, you've just answered one question. By that time, the opportunity to grow revenue may be long gone!

## *Pursuing Predictive Analytics*

Predictive Analytics is BI technology that yields a predictive score for each customer, prospect, or scenario. Predictive models assign these scores based on what has already been learned about your organization.

Predictive models are perfectly suited to predicting recurring patterns in customer behavior. These models help businesses better manage supply chains, inventories, and workloads by offering relatively precise forecasts of customer demand for seasonal and other cyclical items. By the same token, they help retailers forecast returns for a new product, and they help merchandisers forecast how many mittens they will need this January.

## *Eyeballing the evolution of Predictive Analytics*

Over the years, predictive models have become more and more accurate. Large companies have teams of highly trained, well-paid PhDs and statisticians using expensive software applications that require huge amounts of time, money, and expertise, yet offer clear forecasts of customer demand around repeatable behaviors — with *repeatable* being the key benefit, or limitation, depending upon your viewpoint.



The value of some business-focused predictive models will drop drastically in the coming years. The impact of social media and the viral nature of the Web have made customer behavior much less predictable. As more and more people

around the globe become connected to the Web, trends, fads, and interests quickly spike and then, in most cases, diminish just as fast. Add to this the prevalence of Web-connected mobile phones, and the time it takes for a trend (or a viral marketing campaign or news about your company) to spread is measured in minutes, not days.

## *Predicting the unpredictable*

The shrinking world allows businesses to effectively cater to a global customer base, making it difficult to predict what, when, and where something might become popular. As customers become more dynamic and diverse, predictive models become less reliable. And, since so much time, effort, and money are put into creating one, changing a predictive model can take months of discussions and debate. Capitalizing on a trend that may only last one day, one week, or one month isn't plausible with predictive analytics. Smart companies are quickly realizing they must be able to capitalize on customer behavior that spikes, evolves, and vanishes in completely unpredictable ways.

## *Wading Into Web Analytics*

Web Analytics is a specific application of BI that focuses on clickstreams, content views or downloads, and visitor activity, such as ad clicks or purchases. Web Analytics is a good example of how application-specific BI tools are used in practice.

Web Analytics software makes it easy to collect data even from millions of unique visitors a month and report on that data in any number of ways. Every click can be captured and used to generate detailed reports.

## *Learning from Web Analytics*

You can learn a lot from Web Analytics. For an in-depth look at the practice, read *Web Analytics For Dummies* by Jennifer LeClaire (Wiley). In a nutshell, Web Analytics offers insights into how many people visited a page, how long they stayed on that page, which site they came from, how many accepted the call to action, where they exited the site, and so on.

From this data, companies can optimize their Web sites in an effort to guide visitors to desired destinations. For example, if a specific landing page is getting lots of traffic but not many registrations, the page may need a more compelling offer or a better design. If most visitors are entering the site from a specific referring site, the page can be dressed up to cater to that site's demographics.

## *Recognizing the limits of Web Analytics*

For all the virtues of Web Analytics — and there are many — the software also has its limits. Most Web analytics tools today were designed for Web 1.0, a world in which visitor behavior didn't change in a flash. As such, most analytics tools rely on inflexible segmentation definitions, predictive models that take a long time to build and roll out, and narrow analytics capabilities that fail to provide in-depth insight into behaviors.

Web Analytics is geared towards dashboards and simple statistics that are, while important, only a historical view of what happened. There are no insights to determine *why* something happened. What's more, given the millions to billions of data points collected, Web Analytics software typically takes a tiny sample (usually two percent) of the overall data on which to base its analysis in order to generate insights more quickly. But you may also be losing part of the picture by sacrificing accuracy for speed. On the modern Web, getting reaction time within the window of opportunity dictated by these fast-paced changes without losing part of the picture demands a new approach. That approach is Behavioral Analytics.

## *Betting On Behavioral Analytics*

Quickly uncovering valuable interaction patterns spread over time and multiple sessions by tens, thousands, or even millions of customers or visitors is a daunting task. When you add the need for short reaction times, the problem seems overwhelming. That's why many companies are betting on Behavioral Analytics.

## How Behavioral Analytics works

Nearly every database and analytics technology on the market today is based on a table structure made up of rows and columns, like an Excel spreadsheet.



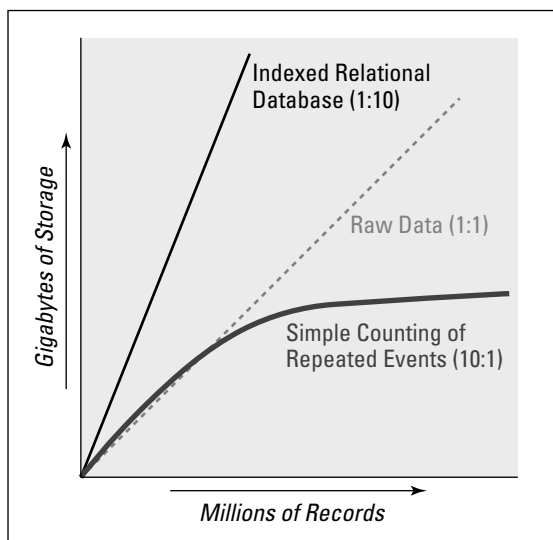
Today's technology further nests tables as a relational database, where different tables are related to each other, such as a table of customer purchase data that is associated with a table of product descriptions. This is decades-old technology that was not designed to handle today's volumes of data. By some estimates, there are 45 gigabytes of data for every single person on the planet. That's a lot of data to crunch!

## Row/column tables versus affinity databases

In order to analyze data in a row/column table, analytics software needs to search through every single row of the database and look at each column in every row. As data volumes increase, the time it takes to analyze the database becomes longer in a linear manner. In other words, if it takes one second to analyze one row, then it takes 10 seconds or more to analyze 10 rows. By contrast, an affinity database runs through all of the data one time and then logs the actual patterns in the data.

Here's an example: If a grocery store had a row/column database and wanted to know if anyone ever purchased mustard and cereal together, traditional database software would still need to look through *every single purchase*, which would take hours. An affinity database, which is what Behavioral Analytics is based upon, would already know that only three people out of 200,000 ever purchased mustard and cereal together, and the results would be returned almost instantly. The speed comes because only the patterns that *actually* occur are searched. Even with unpredictable human behavior, there are always a small number of "observed" patterns compared with the astronomical number of "possible" patterns. See Figure 2-1.

Although people may occasionally purchase mustard and cereal together, there are millions of other combinations from the tens of thousands of available grocery products that never occur.



**Figure 2-1:** A behavioral database only counts actual patterns, requiring far less storage than other database types as the size of the data increases.

## Understanding Why Behavioral Analytics Is a Must-Have

With the explosion of business applications — point of sale, Web Analytics, Customer Relationship Management (CRM), marketing automation — customer data is being captured everywhere. The data warehousing industry is growing by leaps and bounds as a result. But that data is not always being analyzed by or integrated with Predictive Analytics, Web Analytics, and other BI tools.

Behavioral Analytics uncovers meaningful patterns of behavior in customer data, such as identifying which customer segments have a propensity to make a transaction, when they will do it, and what led them to that outcome. The value is obvious: You can use these insights to influence customer behavior and better drive the actions that you care about.



Anyone in your organization can use these tools. They're not just for business analysts.

## Complementing Existing Analytics Solutions

Behavioral Analytics complements other analytics solutions. It's a method for analyzing data, not for collecting data. Behavioral Analytics will not replace your reporting tools, and it won't create a predictive model. Behavioral Analytics takes the data that you already have, digs for insightful nuggets, and tells you exactly what to do next. It complements your existing tools and increases the value of the data that you already collect.



Take first-time visitors to an e-commerce Web site. They arrive, perform a search, look at a few pages, and then leave. On a later return, they purchase something. A Web Analytics report details which pages were viewed, which search terms were used, the referring sites, and so on. But by itself, this information doesn't tell you how to drive more purchases.

Add Behavioral Analytics, and you're not only looking at this one visitor interaction, but you're also looking at millions of others for patterns related to the transaction. To further the example, you might discover that "visit number" is the best predictor of a purchase, finding that visitors first come to do research, continue their research elsewhere, and then come back once they've made a decision. With that information, you can now optimize your Web site to focus on first-time visitors and entice them with a discount to purchase now instead of betting on a repeat visit.

You might also dig deeper to discover that, based on the search terms and pages viewed, you can place visitors into one of three segments: researching, ready to purchase, or just looking. As before, you can now use this information to optimize your Web site even further.



You can see how Behavioral Analytics helps you get more of the right customers, keep the customers you have while keeping them spending, and grow your profits.



## *Choosing the Right Approach to Behavioral Analytics*

The BI market has expanded tremendously during the last ten years, driven by companies' needs to optimize their operations through data analysis. Recently, this market has seen massive consolidation around four large vendors — Oracle, SAP, IBM, and Microsoft — all with wide application stacks covering a number of features in data warehousing and BI.

Contrary to many markets that have been reshaped in the last ten years by fundamental technology changes, there has been no such innovation in BI. The cost of large-scale customer analysis has remained prohibitively high, analytics projects still require months to get up and running, and decisions continue to be held up by long “times to answer,” typically hours to days.

### *The analytics action gap*

The lack of BI innovation combined with a solution void from leading vendors has lead to an *analytics action gap*, an ever-growing disconnect between analytics technologies trying to manage mountains of data and the frustrated business managers who require in-depth understanding of current business trends and clear direction on the actions that will impact revenues and profits.

At the core of the analytics action gap lies layer upon layer of database and data-warehousing tools that were created for a relational world; a world in which information is stored row after row and indexed; a world where analysis is about counting parts of these rows, summarizing that information, and creating dashboards and reports.

Two fundamental trends are causing this gap to grow quickly. First, there is an overwhelming amount of data being captured, stemming from the buildup of point-of-sale, inventory, marketing, CRM, Web, and other systems. With each new piece of data collected, traditional BI technologies become

exponentially burdened with trying to analyze that data due to the lack of flexibility in their column/row structure.

Second, more and more businesses require not only summary-like reports but behavioral analysis to make smart marketing, sales, and operational decisions. Unfortunately, traditional column/row database technologies are extremely inefficient at answering these new analytics questions.

### *Software-as-a-Service solutions*

With massive amounts of data to be analyzed, you need a scalable, highly-flexible infrastructure. Cloud computing is ideally suited! *Cloud computing* is a style of computing that relies on dynamically scalable and typically virtualized resources provided as a service over the Internet. It allows the scalability to handle billions of records — terabytes of data — and you only pay for what you use. For processing power, you can turn processors on or off at will, enabling you to run Monday morning or end of quarter reports quickly and easily, but then not pay for that processing power when it isn't being used.



TIP

Software-as-a-Service (SaaS) has many advantages over traditional “on-premise” software, and most companies are actively involved with SaaS or considering SaaS solutions. In the BI and analytics market where expensive and hard-to-use solutions are frustrating managers and business analysts alike, SaaS solutions offer alternatives that are cheaper, easier to deploy, and easier to use.



WARNING!

Beware of the SaaS BI vendors who are just moving decades-old relational technologies into the cloud. While they may take some cost out of the equation, their motive is to apply more and cheaper storage and computing power to an old solution. Think of it as putting a new engine in your 1984 Chevy Chevette. It may get a little bit faster, but it's still not going to win any races. In other words, SaaS BI tools that aren't specifically built to embrace the cloud may offer slightly faster results than traditional BI, but the old underlying technology still limits the speed.

## Chapter 3

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# Driving Action with Behavioral Analytics

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### *In This Chapter*

- ▶ Taking in the uniqueness of Behavioral Analytics
  - ▶ Working with Behavioral Analytics
  - ▶ Gaining insight into behaviors
  - ▶ Getting strategic
- .....

**W**hen you enter the world of Behavioral Analytics, you're confronted with new concepts, new opportunities, and new ways to realize new possibilities with your customer data.

By interacting with the data directly, you can discover, explore, and share insights with others in ways that were never possible before. That's the value proposition of Behavioral Analytics. Driving value and Return on Investment (ROI) with these tools depends on first realizing the unique value of the technology itself.

As you wade deeper into Behavioral Analytics waters, you'll begin to not only realize the value of these Business Intelligence (BI) tools, but you'll also be amazed at the types of actionable insights you will get about your customers' behaviors — insights that will guide you toward decisions that help you optimize the relationship between your customers and your company.

In this chapter, you discover the power of affinities, or associations, between transactions, how to look into the future through the lens of Behavioral Analytics, and how you — and anyone in your organization — can begin putting these tools to work.

# *Realizing the Unique Value of Behavioral Analytics*

Behavioral Analytics offers a value unique among its BI peers. Using traditional analysis tools, if you don't know precisely what you are looking for, finding meaningful insight can be like looking for a needle in a haystack.

Best-of-breed Behavioral Analytics tools track the relationships between attributes in your data and provide easy-to-use tools for exploring this information. You can use these capabilities to discover affinities, relationships, patterns and trends in large volumes of data. You can also explore at a general level or target specific areas to pursue a hunch or a hypothesis.

### **Discover transactional affinities**

Behavioral Analytics helps you discover affinities between transactions and the customer groups that do (and even that don't) make them. For example, you can determine what events lead to specific actions for specific customers, such as content views that lead to conversions of industry A companies, or promotions that lead to purchases of product B for customers who have already purchased product C.

These tools also allow you to uncover buried relationships that link customer characteristics to behavior — even ones you never considered. For example, you can find attributes that are highly correlated with specific groups of online or offline transactions. All

you need to do is select a focus area and then let Behavioral Analytics tell you what's important. You can also examine trends, such as tracking how behaviors vary over time and under combinations of factors such as promotions, price changes, advertising, day of week, hour of day, and so on.

Behavioral Analytics also helps you spot anomalies by exposing hard-to-detect abnormal interactions that are indicative of emerging trends, fraud, or error. This software can also help you discover what you didn't even know to ask with an exhaustive list of all relevant affinities existing in your data — a true 360-degree view of your customers' behaviors.



When you understand what your customers tend to do in any given situation or after a given set of actions, you can predict what they will do next time and make changes as necessary to either facilitate or avoid those actions. Indeed, Behavioral Analytics yields nuggets of information that can drive your entire business strategy to more effective heights.

## Putting Behavioral Analytics to Work for You

Standard BI tools only tell you what happened. Behavioral Analytics tells you what to do next. By knowing that behaviors X and Y drive behavior Z for Group 1 ten times as often as Group 2, you know exactly what your next move should be.

With Behavioral Analytics, companies can see why people do things and what they do together and don't do together, and patterns in their behaviors that can point marketing, sales, support, advertising, real estate, product management, and other areas in the right direction.

For example, the insights you receive can uncover new product affinities across departments in specific stores or groups of stores, and based on this analysis, increase departmental cross-sells by modifying in-store layouts depending on store demographics.

With Behavioral Analytics, you can focus on the desired behavior (say a purchase) and find out what led up to that action. Then, you can immediately pinpoint the customers who take the first step towards that desired action and incent them — through recommendations, marketing campaigns, sales promotions, and so on — to take the next step, helping to drive them to the desired outcome.



Behavioral Analytics is great for determining *positive* affinities, but don't forget about the *negative* affinities as well. Understanding what drives customers *away* from a certain action can be just as important as knowing what drives them *toward* an action. For example, having a customer call your support staff is probably something you'd like to avoid. By realizing

what drives customers away from making that call, you can reduce expenses and increase customer satisfaction. In other words, a negative can sometimes actually be a positive!

## Focusing on Behavior Patterns

One of the key differentiators of Behavioral Analytics is the focus on patterns and the relevant affinities. You can uncover significant behavioral patterns that compare your focus to the overall population. Adding affinities avoids the bias created by size differences between the target population and the overall population and allows for quick segmentation of customers by value or action or behavior. Plus, the largest group isn't usually the one that exhibits the most valuable behaviors. Without the affinity score, you're just guessing.



The *affinity score* replaces your guesstimate with a quantitative measure of the correlation or relevance between two data points. The score is derived from past data that can be used as a predictor of future behavior and is inherent in the Behavioral Analytics tool — which gives you the score automatically.

Here are a few examples of when affinity defines relevance:

- ✓ Which Web page is more likely to be selected by visitors who view X (compared to all the available pages)?
- ✓ Which marketing campaigns are more likely to create high-value customers (compared to all the other campaigns and customers)?
- ✓ Which products are more likely to be purchased along with product A (and not with other products)?

Even with a focus on patterns, all of the underlying customer data is still contained within the Behavioral Analytics system, allowing for quick segmentation of customers, and then exporting of those customer names/IDs to your marketing system for a quick campaign.

Unlike traditional row and column databases, Behavioral Analytics stores data by tracking the associations between attributes, eliminating inherent redundancy. Any unique combination of attributes is stored only once, even though it

may appear thousands of times in the raw data. This same logic applies to more complex patterns, such as product, channel, and promotion.

## *Driving Strategy with Behavioral Analytics*

Behavioral Analytics is more than just another BI tool. This software reveals insights that can inform your business strategy with more clarity and stronger results. That's because Behavioral Analytics allows you to understand both customer behaviors and the changing trends and behaviors in the marketplace as they relate to any business initiative.

Armed with this information, you can drive branding, product direction, public relations, and other areas of your business. By better understanding what your customers do, you can better manage your overall business to stay ahead of today's quickly changing customers.

### *Understanding business drivers*

Mobile phones are allowing people to connect to the Internet wherever they are, and send text messages, photos, Web links, and more to their friends in near real-time. Meanwhile, social networks are changing the face of word-of-mouth marketing. News spreads in an instant and trends make it from one coast to another in a flash.

Behavioral Analytics helps you to understand customer behaviors on a day-to-day basis. With up-to-the-minute information about what's driving customers to — or away from — your business, you can make adjustments on the fly.

Put another way, knowing how many customers are coming and going (and how they got there and where they went to next) is helpful. But understanding customer behavior — for example, this combination of activities caused people to leave, but that combination caused people to buy — can help you better manage the direction of your business.

## *Breeding repeat customers*

Behavioral Analytics offers quick insights that can help you get new customers and more revenues in an instant. For example, some celebrity wears your product and your orders skyrocket. That's great news. But once you fulfill the orders, you need to quickly turn those new customers into repeat customers.

Behavioral Analytics will answer questions such as:

- ✔ Of the new customers who bought more, what else did they buy?
- ✔ Did they buy on the same day or the next week?
- ✔ What led them to the other purchases?
- ✔ Of the new customers who did not buy, what else did they look at?

## *Focusing on business customers*

On the business-to-business (B2B) front, Behavioral Analytics offers insights that can help you cut costs, drive product improvements, change marketing messages, and so on. For example, Behavioral Analytics helps you understand what potential customers do before they make a purchase. Such insights can be a boon for lead generation, sales pipeline development, and lead profiling and routing.

Here are a few types of insights for B2B:

- ✔ Find the affinities between marketing content types, time between downloads, and close rates by sales method.
- ✔ Identify which initial contact methods, followed by which other interactions over a time period have a higher likelihood to close.
- ✔ Uncover which sales tactic and marketing campaign combinations create a *negative* affinity to deal closures.

It's easy to see how Behavioral Analytics can inform your higher-level strategies by offering crystal clear insights into customer behaviors.



## Chapter 4

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# Applying Behavioral Analytics to Real Business Challenges

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### *In This Chapter*

- ▶ Impacting your business via Behavioral Analytics
  - ▶ Turning Web sites into profit drivers
  - ▶ Making the most of marketing online
  - ▶ Getting insight into promotion strategies
  - ▶ Taking a look at what retail and e-commerce can mean to you
  - ▶ Seeing what makes customers loyal
- .....

**W**hen it comes to any type of data analysis, you want actionable insights. You want to apply the statistics, comparisons, and patterns to get new customers, keep the customers you have, and grow profits. Behavioral Analytics positions you to accomplish all three goals.

Behavioral Analytics software does the heavy lifting for you, analyzing mountains of data that offer insights into areas about which you may not even have thought to inquire. Once you glean those insights, though, it's up to you to put them into action. The good news is anyone in your organization can wield these tools to look like an analytical superstar because Behavioral Analytics is the user-friendliest of BI tools.

In this chapter, you see how to put your Behavioral Analytics results into action. That may mean optimizing your online marketing, monetizing your Web site visitors, improving

business-to-business (B2B) sales effectiveness, or some other customer-focused task. By the end of this chapter, you're equipped to do all that and more.

# *Putting Behavioral Analytics into Action*

It's time to explore the unique insights Behavioral Analytics provides and how they can make a direct impact on your company. What you want to remember is that Behavioral Analytics doesn't offer results for the sake of results. Every insight leads to an action you can take to optimize some aspect of your business operations, from sales to customer loyalty to customer support and beyond.

For example, you may need to improve lead-to-close ratios and increase profitability. Or it could be that you need to analyze clickstream data to identify and profile leads by potential value early in the sales process and then route those leads to the most profitable and most effective channels, increasing both close rates and profit-per-deal.

# *Monetizing Web Sites*

Monetizing, or making money from, Web sites can be a challenge, even for the likes of some of the hottest properties online (read: Twitter and YouTube.) But Behavioral Analytics can help the cause. By understanding online behavior, you can better meet customer needs while improving the performance of your online channel. Behavioral Analytics helps you overcome the technical challenge of making sense of the mass of data Web Analytics collects.

Behavioral Analytics answers questions about your Web site, such as what factors are most likely and least likely to cause specific clicks and how conversion rates and campaign results are impacted by user demographics and other profile information. You can also discover which sequence of events almost certainly leads to successful online transactions, when your customers are most likely to abandon their shopping carts, what drives someone to your site, and what keeps the

person there. You can even find out what factors are increasing or decreasing conversion rates and what is driving customers away.

Behavioral Analytics also identifies patterns and trends in your Web Analytics data that reveal high-value behavioral information, such as identifying sequences of pages viewed by visitors who convert to customers and how those sequences vary over time, geography, and similar criteria so that you can increase conversion rates. You can also identify areas of stickiness and use those to drive traffic to other areas; optimize your ads and offers by understanding how placement, time of day, and customer profiles affect click-throughs; and increase session length and page views by discovering common traits of returning visitors and what keeps them on your site.

## *Optimizing Online Marketing*

Online marketers have huge amounts of customer data at their disposal and plenty of electronic marketing tools at the ready. Savvy marketers are digging into those mountains of data, mining the nuggets of customer behavior, and realizing that they have a gold mine of valuable insights to help increase marketing effectiveness and drive revenues.



The key to optimizing online marketing is looking across campaigns, events, channels, and data sources, and focusing on the behavioral patterns that different segments exhibit. Going further, marketers are challenging typical segmentation models — not limiting themselves to size/industry or gender/income buckets — and letting different behavioral patterns segment themselves into more valuable, more accurate, and more actionable buckets.

## *Analyzing marketing data*

In the absence of actionable information, many marketers rely on past experiences to make key decisions or use a brute force every-customer-gets-every-offer approach. However, the answers are in your customer behavior patterns. With Behavioral Analytics, you can make smart decisions about marketing campaigns and get answers to important questions in just a few seconds.

For example, you can discover the best ways to target your most profitable customers, which customer segments do and do not respond to different types of messaging, and how quickly campaign effectiveness erodes over time. You can also learn what actions indicate that a customer is ready for a particular promotion, how marketing touch points impact customer behavior over time, and which marketing channels are the most effective for which segments and which products. If that's not enough, you can even get information that helps you determine whether you should spend your budget online or buy print ads or radio airtime, whether you are reaching your most profitable customer segments, and what your most and least profitable campaigns are.

## *Discovering unexpected patterns*

With Behavioral Analytics, you are not limited to predefined reports and queries. Anyone can use the application to discover unexpected patterns that drive new opportunities.

For example, you can discover optimum channels for promoting specific products to specific customers; analyze how campaign effectiveness varies along any criteria (by region, customer segment, time, and so on); uncover preferences and behaviors over time that can predict revenue patterns; and fine-tune campaign spending in response to unusual response rates from customer segments.



Armed with this insight, you can fine-tune your marketing efforts for optimal results, experiment with new channels of advertising (such as social networks) and then analyze their effectiveness immediately, and spend your budget where it is most effective.

## *Building Pipelines and Improving Conversion Rates*

Here are three best practices with examples showing you how cutting-edge sales and marketing teams use behavioral analytics to build pipelines and improve conversion ratios.

## ***Look for behavioral clues pre- and post-sales***

A Software-as-a-Service firm relies heavily on the Web for marketing and sales. Behavioral Analytics provide the firm with insight into the behaviors of prospects before, during, and after the sale, enabling both marketers and salespeople to better segment, qualify, and route leads. This translates into more effective lead handling and increased profit per lead.

## ***Assign leads based on sales team expertise***

A services provider markets via the Web but depends on a large field sales team for closing deals. Behavioral Analytics enables the firm to analyze clickstream data and then segment leads by potential value based upon what they viewed and downloaded online, how often, and over what time span. Those leads are then routed to the most effective field sales teams for that particular profile, increasing close rates.

## ***Match customer profiles against appropriate support modes***

A software vendor sells a huge portfolio of products to both consumers and corporations, creating a wide variety of customer segments and potential lifetime values. Using behavioral analytics to analyze both Web and CRM data, the vendor better understands how customer satisfaction maps against support modes, success rates, and customer profiles.

# ***Analyzing Promotions Data***

The most successful promotions rely on a complete understanding of your past promotion results. You need to get beyond the standard report of how many people responded to a promotion and identify all the related effects — positive

as well as negative — in order to get an accurate picture of a promotion's effectiveness.

With Behavioral Analytics, you can discover what promotion strategies drive the largest and most profitable product attachments, how promotion strategies varying across stores should change based on local demographics, and the long-term impact of a given promotion. You can also get guidance on what you should forecast as your total revenue uplift if you run a specific promotion next week, and the most effective promotions to reach your most profitable customers. You can even discover whether your customers are switching their purchases to the promoted product, reducing your margins, and whether your customers would have bought anyway, regardless of the promotion.

Once you understand the direct and indirect impact of your promotions, you can increase margins by optimizing coupons, special packs, discounted prices, sampling, buy-one-get-one-free offers, special displays, feature ads, and other initiatives. You can also increase revenue by avoiding unnecessary markdowns and discounts and capitalize on the specific demographics of each store or group of stores with tailored promotions.



The ability to conduct effective promotions over and over can be an incredible competitive asset for any company. Complete, in-depth, and timely understanding of promotion effectiveness enables this ability.

## *Recognizing Retail and E-commerce Benefits*

Relying only on intuition for critical merchandising decisions is no longer good enough. In order to make informed decisions, you need to understand sales performance from all angles. Classic location or category reports are only a start. To be effective, you must follow the trails that your customers leave behind, get a complete picture of what happened and why, which locations are prominent for particular categories, and which products sold together.

Behavioral Analytics can get you answers to questions about which products sell together and how often; what top products are attached to promoted items, by frequency, count, basket size, and margin; and optimal product assortments and how they vary depending on the store location and demographics. You can also get insights into customer behavior when you are out of stock on some items in a set. Do customers switch to a different set, do they purchase online, or do you lose the sale? You can even uncover the key factors related to underperforming or overperforming stores in specific product categories and learn what new and emerging purchasing patterns you can capitalize on in your store layouts.

With Behavioral Analytics you can freely explore your point-of-sale transactional data, understand in detail the behavioral patterns of your customers and their impact on product category performance, and make decisions that increase revenue and margin by tailoring product assortments to local demand instead of using a one-size-fits-all approach. You can also optimize inventory levels by understanding how out-of-stock situations impact your bottom line, and quickly identify and replicate best practices across stores.



Arming your merchants at all levels with the ability to gain the insights they need in order to make smart decisions every day is not just a best practice, it is good business.

## Analyzing Customer Loyalty Data

The behavioral patterns from your loyalty database are rich in predictive information, waiting to be discovered and put to good use. With the right tools, you can discover emerging purchasing trends, get an in-depth understanding of your customer's lifetime value across segments, understand who your most profitable customers are and how they respond, and determine how to turn new customers into loyal customers.

Behavioral Analytics allows you to get detailed and up-to-date insight from your loyalty data. For example, you can find out what makes a customer loyal? Prices? Products? Services? You can also study the behavior of your most loyal customers and

how it is evolving, what the segments are within your loyal customers and how they vary in profitability, and which products and offerings are driving purchases over time from loyal customers. You can even find out what interactions with casual customers turn them into loyal customers, what the early signs are that customers will drop off the loyalty program, what offers will most likely keep them active, and which marketing programs are most effective at attracting high value customers.

With Behavioral Analytics, you can focus on marketing activities that attract high value loyal customers, increase the ROI of your loyalty program by boosting the frequency and size of purchases from loyal customers, reduce the attrition of loyalty members and increase the conversions of casual customers to loyal members, and increase overall margins by predicting the actions of loyalty customers across the spectrum.

## *Improving B2B Sales and Support Functions*

Behavioral Analytics can help you understand the customer behavior patterns buried within the enterprise systems on which you've spent so many resources to deploy. Behavioral Analytics turns Customer Relationship Management (CRM), Sales Force Automation (SFA), marketing, and Web Analytics data into actionable insights that enable sales, marketing, and support teams to focus their efforts on the customers, segments, and programs that matter most — and to get more profitable customers, keep customers happy, and grow revenues.

*Support routing* and *sales lead routing* are two key areas in which Behavioral Analytics can improve B2B functions. Think of the power of understanding how to solve customer issues in the fastest, least expensive way possible. That makes customer sales and support a win-win.

Then, consider the value of Behavioral Analytics for lead generation. You can drive more leads and conversions by understanding that customers of a specific profile are ready to purchase after they've done X, Y, and Z — and then understanding that certain profile customers will be best handled by “sales method A” or “sales method B.”



## Chapter 5

# Choosing a Behavioral Analytics Solution

### *In This Chapter*

- ▶ Getting a panoramic view of Behavioral Analytics
- ▶ Ferreting out key features and capabilities

**I**n the world of Business Intelligence (BI), Behavioral Analytics is a relatively new segment. While industry experts predict an explosion in the years ahead with new start-ups emerging on the scene, the number of vendors to choose from is still relatively few. Still, not all vendors offer the same level of technology. Choosing the right vendor is vital to your success, which is what this chapter is all about.

## *Understanding the Behavioral Analytics Landscape*

Unlike many other software segments, choosing a Behavioral Analytics tool is not merely a matter of brand name or even price. Although these factors should certainly play a role in your decision, other important factors are also at play. For example, there are database technologies and cloud computing approaches to consider. For more information on technologies, see Chapter 2.

With traditional relational database technology, knowledge discovery relies on processing-intensive data mining techniques that typically allow only limited amounts of knowledge to be uncovered. Analysts must make educated guesses about the

kinds of knowledge they believe exists in their data sets or the kinds of questions they will be expected to answer, and then formulate computationally intensive queries to actually discover that knowledge.

By contrast, Behavioral Analytics tools use a fully indexed, intelligent database that stores not only all data as it would appear in a conventional database, but also recognizes and stores important statistics (counts, probabilities, correlations, and so on) and hierarchical associations between data elements.



Not all Behavioral Analytics tools use a fully-indexed, intelligent database. You should inquire about this feature as you shop for a solution for your business.



While some advanced analytics tools will say that they can do Behavioral Analytics, be wary of the time, cost, and limited scale of these solutions for this application. It's critical to be able to ferret out behaviors across all of your data, and do it right now.

## Identifying reputable Behavioral Analytics vendors

Before you set out on your journey to find reputable Behavioral Analytics vendors, take inventory of your supplies and outline a clear map of your specific needs. Consider the following factors as you begin to compare and contrast Behavioral Analytics vendors.



- ✓ **What's my budget?** You may be impressed with the bells and whistles a certain program class has to offer, but your budget might not let you make that much noise.

The good news is, you shouldn't expect to pay millions of dollars and spend months deploying your solution. Software-as-a-Service is the most cost-effective, most efficient model, and should start at just a few thousand dollars per month.

- ✓ **What client experience does this vendor have?** Look for strong case studies, references, and client lists.
- ✓ **What industry experience does this vendor have?** Different industries and different applications of

Behavioral Analytics are not cookie-cutter but require a different approach and understanding.

- ✓ **Is this a pure-bred Behavioral Analytics solution?** Look for technology designed to analyze behaviors, not just the same old technology trying to be applied to this new area.



There are tons of analytics vendors out there tucked into neat little niches. Be sure that you aren't trying to put a round problem into a square hole. In order to get the customer behavior insights you need, you need a vendor with insightful Behavioral Analytics tools. Not just any analytics vendor will do.

## ***Taking a Behavioral Analytics trial run***

As you look for a Behavioral Analytics vendor, don't get wowed by flashy sales presentations that promise results. Ask for a trial run and see some of those results for yourself. Reputable Behavioral Analytics firms will offer a trial run with no obligation. In this scenario, you can load a sample of your own data, even tens of millions of records, and have the opportunity to analyze that data for a limited time without risk.



Don't be lured into accepting a trial with generic sample data that isn't your own. Insist on using *your actual data*, and make it enough to give you a worthwhile trial. Ask to use one to three months of data, and ask to have a month to make up your mind. If they can't deliver on the trial, they probably won't meet your expectations later on.

## ***Determining Key Features and Capabilities***

You might not need the kitchen sink, but you may need the spigot and the drain. In other words, you may be able to live without some high-end Behavioral Analytics features and capabilities, but there are some you absolutely must have to deliver the insights you need about your business.

Here are some baseline must-have features and capabilities:

- ✔ You must have the ability to scale up/down as necessary. Having limited scalability can hinder your ability to glean the insights you need and having too much capacity can run up costs.
- ✔ You must have the ability to handle billions of records. Unless you are a small business, you need to be able to compare behaviors across your entire organization and over a relevant period of time to come away with insights that drive your overall business strategy.
- ✔ You must only pay for what you use. Behavioral Analytics vendors should not charge you a flat fee for capacity you *might* use. You should only pay for the resources you actually use, which may vary based upon your data.
- ✔ You must have a user-friendly experience. If you need a PhD in statistics to use the software, look for another solution. Typical marketing managers at your company should be able to analyze data with just a few hours of training.



Be sure to understand what you need before you head into discussions with a Behavioral Analytics vendor. If you aren't sure what you need, ask the vendors, take notes, and compare those notes against the information each vendor offers.

## ***Drawing analysis over time***

When it comes to Behavioral Analytics, you need a solution that will allow you to look at behaviors over time so that you can determine whether there's a lag between actions and why. A video game retailer, for example, might learn that customers who buy a video game console with two games in December will then purchased two new games within the next three weeks.



One of your goals with Behavioral Analytics is to figure out how time affects promotion response. If someone comes to your Web site today for the first time, how soon do you need to send that person a promotion to get him back or lose her forever? Make sure your Behavioral Analytics tool can draw analysis over time.

## *Analyzing multiple Web sessions*

Your Behavioral Analytics solution should also give you the ability to analyze across multiple Web sessions. It's important to know what happens over time through multiple visits versus what happens in a single visit alone, but it's good to have the flexibility to do both.



Knowing how many visits someone makes to your Web site before making a purchase is important to know. Take retail as an example. Does a certain segment of your customer base purchase jeans today, then a shirt within three weeks? If so, you need to send those customers an offer for a 10 percent discount on shirts within one week.

## *Culling comparative statistics*

As you search for Behavioral Analytics solutions, remember this: The affinity — also known as the association — is the key measurement in Behavioral Analytics! The affinity score compares your *target* (people who exhibit a specific behavior) with the overall population.



You must always compare your target with the overall population to see the relevance or strength of the association. If the association is weak, you won't benefit from it. Strong associations demand action and help you to prioritize what to do first in order to maximize your resources. For example, if you find a strong association between male customers and perfume purchases in February, you should optimize your sales and marketing function to boost perfume sales while the market is hot. The same is true in reverse, where some behaviors may drive customers away from a specific activity.

## *Diving into dynamic segmentation*

*Dynamic segmentation* is an important capability of Behavioral Analytics tools. By segmenting the data, you can determine the best targets for your business. That may be men over 50 who live in rural areas, or it may be people who have purchased something within the last six months, are not loyalty club members, and have watched one online video.



You need the ability to change your segmentation as trends change, as your initiatives change, as customers change, and as your desired outcome changes. With traditional BI applications and predictive models, to change an assumption or segmentation may take weeks of meetings, analysis, discussion, and statistical investigation. With the right Behavioral Analytics solution, you can make these changes on the fly.

## *Leveraging the train of thought*

Leveraging Train-of-Thought analytics is a powerful, fast way to ask questions of your data and get answers back within minutes — repeatedly.

With traditional BI, it may take days or even weeks to get the answer back for a single question, and by then you have lost your train of thought. We also call this “follow your nose” analysis, where you ask one question, and then say, “Hmm, that’s interesting . . .” and then ask another. The answer to one question sparks other questions that you never would have considered if you had to wait hours or days for the answers to come in.



It’s no longer practical to wait days for your software to analyze a single question, then wait days or weeks longer to get the answers to follow-up questions. You need the ability to do the analysis yourself — and do it quickly so that you can follow your hunches to find the best action today. That’s the promise of Behavioral Analytics.

## Chapter 6

# Ten Revolutionary Benefits of Behavioral Analytics

### *In This Chapter*

- ▶ Betting on on-demand analytics
- ▶ Building business strategies and tactics
- ▶ Leveraging low-cost and user-friendly tools

**B**ehavioral Analytics is poised to revolutionize Business Intelligence (BI). In fact, the revolution is already brewing in the boardrooms of companies looking for deeper insights into customer behavior.

No longer is it enough to merely understand what a customer did — or try to predict what he might do. In order to walk customers down the path to your desired action, you need to understand their behavior patterns — and fast.

In this chapter, we've put together ten reasons why Behavioral Analytics is revolutionizing BI. If that's not enough to convince you, read some case studies from reputable companies in the Behavioral Analytics space, and you'll see these reasons come to life in practical applications.

## *Keeping Up with Customers*

The high-tech world of always-on Internet and Web-enabled smartphones makes communication instant. These technologies are creating a customer base that changes behaviors faster than any predictive model can keep up with. You need to focus on customer behavior in order to understand rapidly changing habits, spending patterns, trends, and fads that impact your revenues.

## *Maintaining Speed with So Much Data*

With practically everyone spending more time surfing online, talking on mobile phones, commenting on social networks, and using other technologies that allow you to track a customer's every move, the volume of data you're collecting is exploding. That explosion is straining the capabilities of traditional BI.

Behavioral Analytics, on the other hand, is designed for large-scale datasets, making it possible to quickly analyze even tens of billions of records. By using a pattern-based affinity database technology, Behavioral Analytics can answer questions in a fraction of the time required by other BI tools. This translates directly into faster response and faster time-to-market for businesses.

## *Combining Different Data with Ease*

With decades of IT expansion, most companies have different systems that collect purchase, sales, support, call center, Web, marketing, and other data. Customers constantly interact across all of these systems. Since the customer is the common element, Behavioral Analytics offers an easy, fast method for enabling a 360-degree view of customer behavior across this data so that you're making your decisions based on the whole picture.



## ***Building Business Strategies***

Behavioral Analytics helps you develop even the high-level business strategies, not just frontline tactics. For example, understanding customer behaviors and changing trends drives product direction, marketing messages, public relations, and so on. By better understanding what your customers do, you can better drive your overall business to stay ahead of today's quickly changing customers. That's strategic.

## ***Defining Business Tactics***

From a tactical perspective, behavioral analytics can be applied to many areas across a company, from marketing and promotion to sales and support. How customers respond to a marketing campaign can help you better structure the next campaign. How customers navigate your Web site can point to Web site redesigns. How customers purchase can help define store layouts, inventories, and ordering. The results of Behavioral Analytics discoveries can be quickly and easily exported to other systems, such as creating a behavior-based campaign by pushing customer IDs directly into a marketing automation system. That's tactical.

## ***Segmenting Customer Data***

Behavioral Analytics allows you to segment any combination of aspects — demographic and behavioral. The old age-gender-location groups alone are no longer relevant in today's hyper-connected, fast-paced, multi-mode world. Behavior-based segmentations tell you exactly what triggers the desired action so you can take steps to optimize around those triggers.

## ***Using User-Friendly Analytics***

If you can ask a question, you can use Behavioral Analytics. By eliminating query languages and putting complex statistical computations behind the scenes, Behavioral Analytics allows business users, from executives to data analysts, to

interactively drill down into data in a “train of thought” or “as you think” fashion. This puts actionable answers into the hands of the workers, democratizing analytics and increasing business success at every level.

## ***Getting Low-Cost, In-Depth Insights***

While traditional BI has conditioned businesses to expect multi-million dollar projects, Behavioral Analytics leverages the most advanced tools and technologies to deliver in-depth analytics at a small fraction of the typical cost. Users only pay for what they need, be it storage or processing power. It’s like a BI utility! Now there’s a novel concept.

## ***Taking Advantage (Truly) of Cloud Computing***

Cloud computing is part of the Behavioral Analytics magic. *Cloud computing* is a style of computing that relies on dynamically scalable and typically virtualized resources provided as a service over the Internet. Behavioral Analytics was designed from scratch to take full advantage of a cloud-based infrastructure, enabling a BI utility at a fraction of traditional BI’s costs. Most other cloud-based offerings are just the same old thing moved to a virtual server.

## ***Expanding Data Enrichment Capabilities***

Businesses can extend their analytic capabilities with sophisticated customer information calculated from a broad examination of historical behavior. For example, Web Analytics systems generally don’t log “visits per month” as a distinct value. Since Behavioral Analytics provides virtually limitless data storage and processing power, companies can easily add newly calculated data that expands the value of their customer insights.

# Find out how to use Behavioral Analytics to drive profits today

What you don't know about customer behaviors could be hurting your business. Behavioral Analytics offers you the insights you need into your customers' behaviors so that you can get more customers, keep them coming back, and grow your profits. This book helps you to get a handle on exactly how to apply Behavioral Analytics to your business.

- **Who should use Behavioral Analytics** — and how your company can benefit by doing so
- **How Behavioral Analytics is different from other analytics tools** — and the insights you can glean from this advanced analytics software
- **How to choose a reputable Behavioral Analytics vendor** — and the features and capabilities you need to drive the most value from your data
- **How to apply Behavioral Analytics to your business strategy** — by understanding what drives your customers and getting a clear picture of what you should do next
- **Discover the power of affinities** — and understand how customer behavior patterns can help you optimize your marketing, increase sales and support effectiveness, better monetize Web site visitors, and more



**Open the book and find:**

- Examples of real-world uses of Behavioral Analytics
- How Behavioral Analytics stands apart from other solutions
- How to choose the best solution for your business
- How Behavioral Analytics can revolutionize your entire business
- How affinities can tell you what to do next
- Ways to bridge the analytics action gap
- Why Cloud computing is changing the analytics paradigm
- How to get started on a Behavioral Analytics project

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