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IBM Limited Edition

Business Analytics in Retail

FOR
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Learn to:

- Put knowledge into action to drive higher sales
- Use predictive analytics for better response
- Improve consumer shopping experiences



Jennifer LeClaire

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DUMMIES®

IBM LIMITED EDITION

by Jennifer LeClaire



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Introduction



Data is the key that unlocks greater sales potential — but retailers are overwhelmed with so much data that it can seem impossible to make sense (much less money) out of continuous information streams. This book offers principles and tools you can use to discover how your customers behave — and how to put that knowledge into action to drive more sales.

Business analytics isn't a new concept, but new technologies have emerged that make it possible for average business users — from finance to marketing staff and beyond — to analyze and understand the data. If you're looking to find out how to tap into the power of those technologies to discover insights that, when acted on, drive revenue growth and improve customer relations, this book is for you. If you work for a consumer product manufacturer that wants to improve the go-to-market strategy by better understanding consumer behavior or simply wants to achieve great efficiencies, this book is also for you. Welcome to *Business Analytics in Retail For Dummies*, IBM Limited Edition!

How This Book Is Organized

The seven chapters in this book lead you into the world of business analytics and help you get the insights you need to get new customers, keep the customers you have, and grow your profits. Here are the chapters in this book:

- ✓ Chapter 1 introduces the concept of retail analytics, including who should use these tools and what you can discover.
- ✓ Chapter 2 helps you meet the demands of your consumers.
- ✓ Chapter 3 dispels business intelligence myths, shows you how to assess the “why” behind sales performance, and helps you uncover consumer and market trends.

- ✓ Chapter 4 explains how to assess your decision making and how to set up scorecards and dashboards.
- ✓ Chapter 5 introduces you to predictive analytics, explains the concept of decision management, and offers best practices in understanding customer sales patterns.
- ✓ Chapter 6 explores the world of content analytics and the power of measuring consumer sentiment in social media.
- ✓ Chapter 7 offers you best practices for pinpointing consumer buying and behavior trends and much more.

Icons Used in This Book

Every *For Dummies* book has small illustrations, called *icons*, sprinkled throughout the margins. These tiny images call attention to text worth special attention for one reason or another. Following are the icons used in this book.



The Remember icon highlights points to keep in mind as you immerse yourself in the world of business analytics.



I'm a business analytics guru, and I really like sharing my knowledge with you. But, I realize that you don't necessarily need to know everything I do, so this icon tells you a little more detail than is absolutely necessary, so you can skip it if you like.



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



The Warning icon does just that — warns. It helps 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 business analytics.

Where to Go from Here

The chapters in this book are designed to stand alone, so if you're dying to know about how to use predictive analytics, head straight to Chapter 5; if you want to understand how social media marketing fits in with business intelligence, head to Chapter 6; or just turn the page from here and keep on going.

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Chapter 1

Understanding Business Analytics

In This Chapter

- ▶ Defining business analytics
- ▶ Assessing the impacts of retail analytics
- ▶ Seeing retail analytics in action

Do you *really* know your customers? Do you know who they are? How likely they are to buy your products or services? Where they shop? Would you like to know?

Retailers that know their customers — and apply what they know about their customers' preferences — are finding a competitive advantage in the marketplace. Customers leave footprints — whether they actually make a purchase or not. Those footprints come in the form of browsing your Web site, questioning your staff, and, of course, making purchases. Those footprints leave clues about who your customers are, what they're buying, how often they shop, and much more.

Much like a detective relies on his trusted evidence collection kit to solve a case, you can use *business analytics* — to gather customer clues that demystify retail operations. Business analytics are technologies and applications that allow organizations to mine data to glean insights that improve decision-making.

Indeed, with a clear picture of your customers you can develop and deliver a complete offering that consistently reflects back to them — as they engage with your business — what they’ve “told” you.

In this chapter, you become familiar with the world of business analytics, who should use it, and the many benefits it offers retailers.

What Is Business Analytics?

Data is being captured at a rate never before seen in history. The retailer’s goal is to translate that data into bottom line profits. Business analytics makes that possible.

The data you capture about your customers — or even consumers who interact with your retail operation and don’t make a purchase — is more revealing than you may have thought possible. Your customer data can reveal everything from large and systemic patterns of global markets, workflows, national infrastructures, and natural systems to the location, temperature, security, and condition of every item in your supply chain.



Business analytics offers you access to reliable, timely information that drives better decisions. To stay ahead in a competitive marketplace, you need to spot trends, understand your customers, and make informed decisions — and you need to do all of this quickly. Although you may have many different decisions to make monthly, weekly, daily — sometimes even hourly — making the right decisions often depends on knowing the answers to three fundamental questions.

How are we doing?

Business analytics tools help you stay on track to meet targets with visibility into any aspect of your business performance. Business analytics lets you know how you’re doing on the labor costs front, for example, or reveals clogs in your supply chain that lead to product shortages that send customers to your competitors. Armed with information on how you’re doing, you can make improvements that lead to a more profitable tomorrow.

Why are we doing what we're doing?

Business analytics tools help you put results and decisions into context by analyzing trends and patterns. You can better understand why you need to increase inventory of certain products at certain times of the year, for example, or what leads to excess store labor costs in some stores.

What should we be doing in the future?

Business analytics tools let you allocate staff, optimize inventory, launch marketing campaigns, and manage cash, as well as capital investments, more effectively by using driver-based plans and rolling forecasts. In other words, it maps out what you should do the next time around.

Identifying Business Analytics Pillars

Business analytics relies on four technological and informational pillars on which retailers can build a strong decision support system. These pillars are covered in this section.

Business intelligence

The idea of business intelligence (BI) is not new. *BI* includes the concepts, methods, and technologies that gather and analyze data to drive better decision-making. BI has been around since 1958, when IBM researcher Hans Peter Luhn first used the term.

Decades later, technologies are available that have made BI a mainstream business function. In short, BI uses querying, reporting, analysis, scorecards, and dashboards to make it easier for business users across the organization to find, analyze, and share the information they need to improve decision-making.

BI has come a long way over the past five decades — and BI capabilities continue to evolve, offering deeper insights that can be applied across the chain by any business user. Find out more about BI in Chapter 2.

Analytic applications

A new trend in BI and reporting, *analytic applications* include software that measures operational performance — and sets the stage for better results. Analytic applications rely on historical data, along with software tools that crunch numbers and slice and dice data from different perspectives, to offer results that give decision makers the actionable insights they need to improve retail functions.

Analytic applications package business analytics capabilities, data models, process workflows, and reports to address a particular domain or business problem. Examples of these areas include

- ✔ Buying behavior during the holiday shopping season
- ✔ Which stores or channels are the most productive
- ✔ Which suppliers are slow to deliver product
- ✔ Which lines are driving the greatest profits

Financial performance and strategy management

Financial performance and strategy management tools and disciplines aim to drive greater profit and growth across the retail operation. These business analytics tools accomplish this task by simplifying, structuring, and automating dynamic and sustainable financial performance and strategy management practices. This area of business analytics deals with

- ✔ Budgeting and planning
- ✔ Financial consolidation
- ✔ Scorecarding and strategy management
- ✔ Financial analytics
- ✔ Related reporting capabilities

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Financial performance and strategy management solutions allow you to link financial and operational plans through driver-based models. Part of the value of these solutions is that they guarantee the quality and accuracy of financial numbers for timely, sustainable compliance and scenario modeling and create flexible rolling forecasts — this ensures consistency between corporate strategy and field execution.



Looking for more flexibility in your retail budgeting? Financial performance and strategy management solutions help you track operational performance against strategic objectives, perform “what-if” scenarios, and replace rigid budgets with continuous planning — daily, weekly, or monthly.

Advanced analytics

Advanced analytics are applications and technologies that leverage historical, current, and predictive data to help you make decisions that optimize operations. Advanced analytics are vital to delivering high-value, decision-oriented insights that lead to a competitive advantage.

Advanced analytics include data mining, predictive modeling, “what if” simulation, statistics, and text analytics to identify meaningful patterns and correlations in data sets to predict future events and assess the attractiveness of various courses of action. Predictive analytics is an advanced analytics application. Head over to Chapter 5 to find out more about predictive analytics.

The Case for Business Analytics

Business analytics software is user-friendly enough for any decision maker in your organization to drive valuable insights with a minimal learning curve. Although the short-term return on investment (ROI) on business analytics tools can be exponential, you need buy-in from your organization’s key stakeholders to drive the most value from these tools.

In other words, you need to make the case for business analytics with executives and business users in your organization. Decision makers need to wholeheartedly adopt these technologies and practices in order to drive positive impacts on your top line sales and your bottom line profits.

In this section, you get some key points to help you attain the buy-in you need from vital decision makers in your retail organization, including stakeholders in operations, merchandising, marketing, finance, and supply chain.

Avoid data overwhelm

Data by itself isn't useful. In fact, it can be overwhelming — unless you can extract value from it. Retail organizations are grappling with three key data challenges:

- ✓ **Lack of insight:** Business analytics answers the fundamental question “What’s happening?” accurately to offer strategic insights into your organization’s performance. Many managers frequently make critical decisions without the information they need about what’s happening in the organization right then and there. They follow their instincts, which, although keen, aren’t always accurate.
- ✓ **Inefficient access:** Business analytics can answer the key question, “Why is this happening?” Many managers don’t have access to the information they need to do their jobs. They may see what’s happening, but without access to data that goes deeper, they’re left to their keen, yet not-always-accurate instincts to figure out what factors are driving current results.
- ✓ **Inability to predict:** Business analytics offers the answers to questions, such as “What’s likely to happen in the future?” Predictive information drives better decisions. Without such information, keen instincts can make predictions that are sometimes accurate and sometimes costly.



Business analytics holds the key to optimized performance, informed decisions, actionable insights, and trusted information. The goal is to bring together all relevant information in an organization to answer questions that will help drive your retail organization toward its goals.

Avoid unnecessary promotions

Business analytics gives you the accurate information you need to deliver targeted offers that customers want and value while at the same time implicitly making smart investments. Think about it for a minute. If you can offer the products customers want, when they want them — and at a price they're willing to pay — you can avoid unnecessary promotional spend. Likewise, you can mark down a product before it loses its attraction or withdraw resources from less successful business areas and reinvest in more profitable lines. As a result, your retail organization becomes more efficient and your margin improves.

Capitalize on your data mines

To maintain a relevant and differentiated product mix while simultaneously keeping costs down, you need data mining and data processing capabilities. Historically, the challenge has been making sense of the mountains of data. Few organizations can afford the number of analysts needed to understand it.

Business analytics helps organizations capitalize on the vast amounts of data they hold, whether sourced internally or externally, structured or unstructured. Put another way, business analytics does the heavy lifting for you by combining and analyzing relevant data for analysis and giving your business users clear insights to determine profitable decisions.

Predict future outcomes

Advanced and predictive analytics apply algorithms to automatically find significant patterns. Models “learn” from past data and make predictions for current or new cases. Business analytics technologies deliver the insight and foresight needed to make better business decisions and allow you to fully understand your customers — and use that insight to develop and retain your competitive edge.

Improve customer shopping experiences

Providing an outstanding shopping experience while increasing sales and protecting profits is always a balancing act for retailers. Nowhere is this more critical than at the store-front — the place where an organization's planning and preparation come into play. After the focused hard work of everyone from corporate to the field, it all comes down to the customer shopping experience across channels. Business analytics takes into account data streams from various areas of the retail operation to help decision makers improve the customer shopping experience.

Chapter 2

Meeting the Demands of the Smarter Consumer

In This Chapter

- ▶ Characterizing customers
- ▶ Seeing business analytics in action

Marketplace rules are changing dramatically — and quickly. New technologies empower consumers to share more information more quickly with one another — even strangers are making product recommendations on social networks, instant messaging applications, and e-mail. These same technologies allow retailers more chances to communicate directly with consumers than in previous generations. As a result, consumers have access to more information about retailers and their products than ever before.



Comparison shopping, for example, is an earmark of today's Internet-connected consumer. Armed with knowledge they pick up from television ads, online research, word of mouth, and other sources, consumers make decisions on how best to spend their money on the products and services they value most. Add to this, major demographic and socioeconomic shifts, and the need for business analytics is vital.

IBM's Institute for Business Value has identified three characteristics of 21st-century consumers: instrumented, interconnected, and intelligent. I cover these in this chapter. You also, at the end of this chapter, discover how business analytics are applied in real life.

Instrumented Consumers

With the Internet, mobile phones, in-store kiosks, and similar technologies, many consumers now have instant access to a wealth of information about retailers and their products. They're using this information to decide what to buy and where to buy it. The younger generations, particularly Generation Y (20 to 30 years old) and Generation X (31 to 43 years old), embrace new technologies to enhance the shopping experience. Consumers living in the growth markets are even more enthusiastic about tapping technology for e-commerce.

Interconnected Consumers

Many consumers are also willing to use these technologies to interact with retailers and consumer products companies in new ways, but they want to use different technologies for different tasks. They want to use Web sites primarily to compare prices and print coupons, for example. They want to use in-store kiosks to review product features. And they want to use mobile phones to locate the nearest store.

Moreover, retailers aren't the interconnected consumer's only source of information. Millions of people are now interconnected via social networking sites. They listen to other consumers, which influences the purchasing decisions they make. One-third of the consumers IBM polled are likely to "follow" a retailer on a social network, chiefly to try new products and get preferred customer status.



The world's population is expected to grow 12.4 percent over the next decade. More people are now living in cities than rural areas, and half of the emerging world's population is considered middle class by their country's standards. The result: a larger pool of more prosperous, more diverse, smarter, and more demanding consumers.

Intelligent Consumers

Consumers are becoming not only more informed and more interconnected but also increasingly intelligent. Today's consumers have more clearly defined ideas about what they want from retailers than ever before.

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IBM used *Max Diff analysis* — where respondents compare different attributes, just as they do when shopping in real life — to identify what matters most to consumers when they're deciding where to shop and where they think retailers most need to improve.

IBM discovered that consumers believe retailers should focus first on offering better promotions and prices and making product improvements. More specifically, consumers want personalized discounts and consistently available products, followed by better value, quality, and variety. Nearly two-thirds of consumers also said that they would spend more money with their current retailer, if that retailer made the improvements they suggested.

Seeing Business Analytics In Action

Analytics aren't merely an esoteric theory executed by statistic geniuses — at least not any more. Managers are embracing modern analytics tools that decision-makers at any level of the company can employ to get answers — in minutes instead of days. Indeed, the knowledge power of business analytics is making direct impacts on chains of all sizes around the world.

In this section, you get an inside look at how smart retailers are putting business analytics to work for them — and driving impressive results.

Lumber wholesaler drives 3,600 percent ROI

An international lumber wholesaler sensed the housing boom was about to bust. To prepare for the expected downturn, the company needed to monitor primary drivers of its profitability and cash flow: sales, accounts receivables, and inventory. The solution was a user-friendly business analytics tool that made it easy for employees to quickly analyze specific areas of the business. The average annual benefit of using business analytics tools totals \$720,000.

Business analytics gives you access to interactive reports, such as dashboards and scorecards. A *dashboard* is an interface that provides critical information in a single display, often a single computer screen image. A *scorecard* includes a collection of your important metrics, each with an associated target, thresholds for good and poor performance, and a clearly identified owner. A scorecard lets decision-makers track *Key Performance Indicators* (KPIs) — a measure of performance of success factors — and perform end-user-driven investigations. All this helps you identify root causes of poor sales performance or slowing conversion of current assets. The lumber wholesaler reduced financing costs by lowering the levels of accounts receivables and inventory. (For more information on scorecards and dashboards, check out Chapter 4.)

Business analytics drove key improvements for the lumber retailer, including:

- ✓ **Better accounts receivables management:** Accounts receivables management also improved because financial analysts and line-of-business managers are better able to identify slow paying customers in order to better focus collections efforts. The lumber wholesaler now avoids extending credit to companies with weak credit records.
- ✓ **Greater productivity:** The lumber wholesaler also improved productivity. Analytical tasks that once required a labor-intensive combination of static reports and manually-built Microsoft Excel spreadsheets were completed far more rapidly by using a combination of ad-hoc queries, Java-based drill-downs, and derivations of standard reports built by end users. Productivity improved by an average of 13 percent for the 120 end users in various functions who use the business analytics tools.

Casual dining restaurant improves guest satisfaction

When a casual dining chain was planning a market expansion, management implemented a business analytics solution to focus on its key economic drivers and help drive performance management and profitable growth.

The restaurant faced a few challenges:

- ✓ The IT team needed to streamline reporting.
- ✓ Regional and store managers needed to spend less time analyzing numbers and more time taking care of associates and guests.
- ✓ Finance needed to align corporate strategy with operational metrics and measure performance to plan.

By deploying a user-friendly business analytics solution, the restaurant was able to standardize its reporting process and provide users with a single and complete view of the business. Analysis tools are used by marketing, payroll, and finance to manage labor, enforce quality and cleanliness standards, improve guest satisfaction, and manage financials.

Store managers can now judge the day-to-day health of their restaurants quickly and make better decisions. They also support their growth targets and corporate objectives. This support and check-in happens through dashboards that measure sales and check performance. Staff can now manage food, labor and other controllable costs, understand customer satisfaction based on third-party surveys, and increase speed of service to maintain and grow market share. And the IT department now has time to devote to other projects.

Furniture retailer increases top line sales

A national furniture retailer needed answers to questions like, “Which cocktail tables sell best with this sofa model?” and “Which living room packages sell most often with each bedroom package?” With each sale captured as an individual transaction and stored in one of several databases, however, identifying consumer buying patterns was nearly impossible for the marketing staff and store personnel. Business analytics came to the rescue.

The national furniture retailer consolidated its databases into a single enterprise data warehouse and then used business analytics tools to gain insight from the information. Merchants determined not only which packages were best sellers but also the sales trends by geography, category, customer type, and many other descriptors.

Business analytics software unlocked value for this chain, driving increased growth and greater profitability for the company within months. Merchants and operations managers can now see relationships between data sets that help them adjust floor planning based on customer buying patterns and target the most likely buyers for each promotion. What's more, the company is saving over \$100,000 a year because the software is user-friendly enough for its staff to develop reports rather than outsourcing data analysis to another firm.

Chapter 3

Harnessing the Power of Information

In This Chapter

- ▶ Looking at various challenges in retail data
 - ▶ Debunking old business intelligence myths
 - ▶ Understanding the “why” behind performance
 - ▶ Checking out reporting and analysis in action
-

Imagine harnessing the power of information to create a demand-driven merchandising and supply chain, reduce costs, and drive operational excellence to new heights to deliver a shopping experience that outdoes your competitors. In the fast-paced Information Age, the need to effectively manage retail information has never been more important. An explosion in business information is creating countless challenges for retailers. Consumers are more connected, more empowered, and more demanding. And they can choose where, how, and when they want to shop. More than ever, it's a buyer's market.

Forward-thinking organizations armed with actionable insights are turning these challenges into profitable opportunities. Call it an information-led transformation. The change gives retailers the ability to not only understand what's happening today but also to predict future trends.

In this chapter, I assess retail data challenges, dispel business intelligence (BI) complexity myths, assess the *why* behind performance, and look at reporting and analysis in action.

Assessing Retail Data Challenges

Before you can harness the power of information, you must understand the specific problems you need to deal with. The overarching challenge is to provide a seamless shopping experience — to provide the right product in the right place at the right time — but many smaller obstacles exist along the way.



When you drill down into this challenge, you face the task of understanding what consumers want and working the dynamics of supply and demand to deliver it. The bottom line: You need the best tools available to win customer and brand loyalty, while avoiding unnecessary costs. The answer lies in business analytics.

Extracting meaning from data

Understanding and winning customers is complicated in today's ultracompetitive retailing environment. But the problem isn't a lack of data about who your consumers are and what they're buying. Data pours in from multiple systems, channels, and regions around the clock.



The challenge, rather, is how to extract meaning from the data to inform decision making and enable productivity and agility in the face of multi-faceted market demands. Part of that challenge is consolidating the large data sets your organization amasses from a variety of sources. That's especially difficult given the many tools to analyze and report on the data, creating islands of information that may not offer the big picture or best decision-making insights.

Solving the massive data challenge

BI has the keys you need to unlock the mysteries hidden deep within your data. BI empowers your organization to spot trends and discover underlying causes and issues. Today's business analytics tools offer flexible, user-friendly reporting that makes it possible for everyone in your organization to tap

into the information they need to make informed decisions — across all departments, locations, functions, and roles.

Dispelling BI Complexity Myths

BI myths in the business world are abundant. For all the BI myths, though, one myth does perhaps the most harm to retailers — the myth that BI is too complex for the average business user.

Do I need a PhD to analyze the data?

It's true that BI functions were once reserved for analysts. But much has changed with technological innovations that breed increasingly user-friendly software. Your marketing executive can use BI with about the same ease as she uses office productivity software. Modern BI software interfaces are intuitive, offering easily navigable dashboards. So, you don't have to be a PhD to analyze the data.

Giving multiple departments access to actionable insights

BI can deliver actionable insights to critical departments within your organization, from operations to marketing to finance. These actionable insights can reduce costs, improve your business performance, and strengthen your overall retail operations.

Create a demand-driven merchandising and supply chain

You can learn what shoppers want — then create and supply the products they demand, when, where, and how they demand them — to set yourself apart from the competition while building trust, loyalty, and even brand advocacy.

BI enables this efficiency through financial and operational merchandising planning, merchandise reporting and analysis, supplier performance metrics, invoice processing insights, and contract management data. BI also streamlines demand-driven merchandising and the supply chain with unified product content management systems, enterprise-wide master data management, and trusted data for Enterprise Resource Planning and merchandising systems.

Drive operational excellence

You can optimize business performance and operational knowledge with BI by examining reports on financial management, store operations, store development, employee lifecycle management, asset management, and records management.



BI also lets you create, manage, govern, and deliver trusted information by extending your data warehouse, helping to ensure data warehouse compliance, and creating industry models for business insight.

Deliver a superior shopping experience

Today's customers use social and mobile technologies to make more informed decisions. BI helps you provide a relevant, informative, and cohesive customer experience across all channels and turn customers into loyal ones — and drive profitable growth — by empowering customers to shop however, whenever, and wherever they want.



BI helps you deliver a superior shopping experience through customer segmentation, analysis and retention tools, marketing and promotions analysis, and multi-channel performance measurements. With BI, you can achieve a single view of the product, improve e-commerce navigation and merchandising, and enjoy a single view of the customer.

Assessing the “Why” Behind Performance

It’s no longer enough to know what’s happening in your retail operation, make some gut-check changes based on experience, and then wait until the next quarter to see if your decisions panned out. BI offers you tools that help you assess the “why” behind performance with greater accuracy.

Every day, retailers are taking steps to increase their efficiency, improve their customer experiences, and develop smarter retail. Those that don’t are likely to be left behind. To find out if your organization is working smarter in retail, start by asking some critical questions:

- ✓ How many of your employees have access to the information they need at the time and place they need it?
- ✓ With which suppliers, stores, and customers have you moved beyond cooperation to constructive collaboration?
- ✓ Which of your operational processes are able to adapt and respond quickly to changing marketplace demands?
- ✓ How much value are you getting out of the information stored across your organization?
- ✓ How well do you know each of your customers?

With a single, standardized BI platform for reporting and analysis, you can accurately assess the “Why?” behind operational activity and performance. This provides the necessary context for making decisions.



Many of a retailer’s challenges are in the supply chain. BI can help you drill down into the chain to get the answers you need to streamline it so you can deliver a superior shopping experience. BI allows you to:

- ✓ Report on performance by channel, division, region, store or account, category, or product to maximize profits.
- ✓ Analyze sales transaction data to understand demand, optimize staffing levels, and improve in-stock position.

- ✓ Understand consumer and market trends, and react quickly to initiate targeted promotions and provide a more positive shopping experience.
- ✓ Consolidate, analyze, and report on market basket information.

Tapping into the Right Tools

Reporting and analysis are the heartbeat of BI. Retailers are deploying BI tools to arm decision makers with actionable insights in near real time. Business users from any department can tap into reporting and analysis tools to get the answers they need to drive stronger performance in their departments, and ultimately across the retail organization.

In this section, you see a couple of examples of how other companies have tapped this important knowledge.

Clothier stays in tune with consumer fashion demands

A global clothier needed to access more actionable information more quickly so it could make quicker decisions in a fast-changing fashion market. Manufacturers caught with too much of yesterday's styles — or not enough of what's popular today — run the risk of losing sales and profits, as well as the loyalty of customers to their brand.

To ensure that they have the right mix of products on the floor at any given time, high fashion apparel manufacturers have to not only sense changes in selling patterns, but quickly translate that intelligence into a series of coordinated decisions that go right up the supply chain. This means knowing when and how much to ramp up or cut back on the production of some styles, and for which sizes and colors. It means choosing the right mix of transport modes to balance the urgency of delivery against cost. It can even mean ordering scarce fabrics months in advance to ensure there's enough on hand when it counts.

Developing a reporting framework

The clothier turned to BI to develop a reporting framework that offered real-time insights on sell-through rates and inventory so it can optimize store-level merchandising decisions and make sure the most popular clothing was in the right store at the right time.

BI set the stage for the clothier to gather real-time information on sales, inventory, and shipments by connecting the BI software to the retailer's core transactional systems. The information from the retailer's five disparate core platforms was standardized and integrated into a single reporting framework. This led to real-time and granular visibility into store-level sell-through and inventory data, which ultimately allowed the retailer to optimize replenishment and merchandising practices, while supply chain transparency promoted lower-cost logistics.

Lowering cost, raising profits

In addition to ensuring that the hottest products are on the shelves when customers want them, such smart replenishment practices have a big impact on the bottom line. Stocking the right mix of products — right down to the size — reduces requests from retailers to discount slower moving products within the line, thereby maintaining margin strength. By the same token, lowering the volume of returns decreases the considerable costs associated with reverse logistics.

The clothing retailer is also making smarter decisions up the supply chain. With visibility into production, and inventory and location being more transparent and up-to-date, logistics managers have the information they need to optimize their shipping strategies. Using reporting and analysis tools, the retailer's share of shipments sent by air has fallen from 80 percent to under 50 percent — all without impacting its ability to fulfill its on-time delivery commitments to retailers.

Casual dining operator satisfies hunger for information

A casual dining operator with three brands needed to introduce technology that would analyze the performance of each location and assess sales trends across all restaurants. The

company also needed to use the data to manage staffing levels and analyze the success of promotions to continue to drive its business forward.

In addition to bringing together information from different data sources in one reporting location, the casual dining operator also wanted one point of access for all business users and a simple reporting tool for operations managers with the capacity to drill down to appropriate reports quickly and easily.

Betting on BI tools

By applying BI tools to the challenge, the dining group's managers can now access all the data required to understand the performance of individual restaurants within their territory and how their area is performing compared to others. This also helps drive accountability through to the area managers.

Depending on dashboard displays

The dashboard-style data displays provide information to the dining operator quickly and allow business users to analyze performance over a number of areas, including sales and wages, top five and bottom five performing bars, and sales trends graphs. The sales per square foot reports are color-coded by session and day for each restaurant so management can assess performance quickly.

Creating ad-hoc reports

Using BI technology, the dining group can create ad-hoc reports, particularly to monitor sales data. Operations managers can analyze sales by session over a period of time so they can compare performance for sessions in the bars and restaurants that they're managing.

For example, the restaurant can monitor performance by measuring the effectiveness of special offers through a specifically designed promotions model. Sales can be monitored both pre- and post-promotions, and their performance can also be analyzed against non-promotion products. This allows managers to identify the level of customer interest quickly and decide whether to extend the promotion to other areas or change it to achieve better results.

Candy retailer finds new opportunities with BI

A candy retailer needed to react more quickly to changing market conditions, but a lack of quality and timely information, such as regular production, sales, and profitability reporting, and key market intelligence data, was slowing its decision-making process. The result was a disadvantage in capitalizing on new market opportunities. What little information management did receive — a manual download onto spreadsheets — was incomplete and consumed valuable time and expense, better spent on analysis and evaluation.

The candy retailer turned to BI software to find the sweet spots that would drive a better response to changing market conditions. Using BI, the retailer set out to enhance its supply chain management, including the procurement of raw materials and determining the work-in-process and finished-goods inventory levels. The results of the BI implementation include:

- ✓ On-demand reporting of real-time data, allowing greater insight into customer behavior and facilitating well-informed and prompt decisions.
- ✓ Greater visibility into the candy retailer's key performance parameters, for the establishment of current levels of business success and planning of future targets.
- ✓ Corporate confidence that all data is drawn from one single-view source, and is comprehensive and accurate.
- ✓ One set of BI tools for significant time and cost savings, through a focus on one platform for operation and training.

The models and templates present information that allows the candy retailer to see the big picture — the critical business information in visual format — so management can make connections and spot trends, making business decisions in a timely and effective manner.

Chapter 4

Measuring the Impact of Decisions

In This Chapter

- ▶ Assessing the impact of business decisions
- ▶ Setting up winning scorecards
- ▶ Developing insightful dashboards

Business analytics offers strategic, user-friendly tools to help you measure the impact of decisions you've already made and the potential impact of decisions you're planning to make in the future. These are called scorecards and dashboards.

Scorecards include a collection of your important metrics, each with an associated target, thresholds for good and poor performance, and a clearly identified owner. *Dashboards* provide critical information in a single display, often a single computer screen image.

Why use scorecards and dashboards? For the same reason that car companies build cars with fuel gauges and speedometers. Retailers deploy scorecards and dashboards to give employees an easy-to-understand view of the performance metrics that matter most so they can make decisions to keep their operations running smoothly and provide a valued shopping experience.

In this chapter, you discover the deeper value of scorecards, the capabilities and limits of various types of scorecards, effective dashboard strategies, and more.

Five Types of Scorecards

Scorecarding software helps you align your teams and tactics with strategy, communicate goals consistently, and monitor performance against targets. What's more, scorecards allow managers to drill into supporting details in related reports, or conduct additional analysis to determine why a metric is performing a certain way. Not all scorecards are alike. There are five types:

- ✓ **Strategy management:** This type of scorecard is used to manage strategic objectives, not individual metrics. An indicator is used to highlight the performance of each objective.
- ✓ **Business process performance management:** In this case, key performance indicators (KPIs) — a measure of performance of success factors — are used to measure core business processes or customer value proposition(s). Less is more — the fewer the items, the more effectively they can be managed.
- ✓ **Performance monitoring:** A performance monitoring scorecard is used to track the larger number of metrics and respond if needed.
- ✓ **Red-yellow-green reporting (RYG):** RYG results when the scorecard environment becomes a repository for all the measures within an organization. Note, this is different than conditionally formatting reports.

Using a scorecard to house all the measures and metrics of an organization isn't a recommended practice. You aren't going to set targets for all measures, and any attempt to do so may result in poorly defined targets, misdirected efforts, and a watering down of communicating what is important to your organization.
- ✓ **Report cards:** These are reports similar to quarterly or annual reports. By definition they provide lagging indicators, which means they don't support proactive remediation. They explain what happened after the fact, and have a diminished value in driving strategy.





If you understand your goals and values and use an appropriate environment to manage them, you can set up your scorecard successfully. Mixing purposes causes confusion and can delay projects. Worse yet, a poorly designed scorecard can result in a very low — and declining — adoption rate, which wastes corporate resources.

Determining Business Drivers



Understanding how and when to measure the various elements of the organization is important. All information isn't equal. To understand the distinctions, keep the different measurement elements in mind:

- ✓ **Data:** These are business numbers that haven't been analyzed or tested. Publishing them only adds clutter and minimizes understanding of the items that matter to the business.
- ✓ **Measure:** This is a numerical expression of a component of the business. Measures have been tested and provide meaning through a number of dimensions — such as product line, sales region, or time.
- ✓ **Metric:** This is a measure with a target. For example, metrics could represent the components of core business processes. Defining metrics requires time to set well thought-out targets.
- ✓ **KPI:** This is a high-level, strategic metric that defines productivity or efficiency. For example, items such as comparable sales, sales per square foot, or average selling price help explain performance via ratio or percentage. You may not set specific targets for a KPI. But you are looking for improvement or an indication that something has changed. KPIs are also used to compare progress against the competition or divisions within chain.
- ✓ **Strategic objective:** This is a description of what the organization has to do to achieve its overall mission. It's not a quantitative measure. Strategic objectives may change over time, but they shouldn't evolve too much from year to year.

Chasing the right metrics

If you don't understand the strategic importance of an objective, KPI, or metric, your natural reaction may be to look for just the “red” metrics in the RYG model.



Avoid focusing on just RYG indicators because they may in fact have little impact on the organization. What's more, you could miss out seeing that a marginal metric (yellow) is actually having a greater effect on the business. Most metrics feature a corresponding color scheme and trend arrow that indicates whether that performance is on, above, or below target and whether performance is trending up or down.



One of the ways around this pitfall is to understand the weight of each objective. This way, the KPIs and metrics that support it are seen in the right context, and offer a clearer picture of how that objective is performing relative to the business.

Keeping your business focus in focus

Consumers look for retailers with different types of value propositions, such as security, convenience, comfort, or luxury. These can be streamlined into three primary business areas:

- ✓ Product leadership
- ✓ Operational excellence
- ✓ Customer relationships

Research shows companies that achieve breakthrough performance usually have a strong identity in one of these three areas. They become good at the others over time.

A common problem is that strategic objectives are out of alignment with customer value. By understanding your primary business focus, you can better align your objectives to what consumers consider important. In turn, this provides the scorecard platform to communicate and align corporate resources in order to achieve execution on strategy.

Scorecard-building best practices

You can effectively manage strategy and performance via a scorecard by understanding what drives the best possible results. Consider these best practices in scorecard building:

- ✓ Ensure design and implementation are led by the executive team.
- ✓ Ensure the scorecard is heavily integrated into regular management process — it should not be an occasional tool.
- ✓ Enlist someone such as a strategy officer to own the process.
- ✓ Use the scorecard to communicate strategy and the importance of each strategic objective.
- ✓ Tie incentive plans to achievement targets. It will improve the chances of people adhering to strategy execution.

Aligning Business Processes and Customer Value

Remember, when choosing KPIs and metrics, your goal is to make sure they align with customer value in terms of your core business processes. Put on your customer-colored glasses as you build your scorecard, and you'll discover information that will help you align your business processes in the right way.

Consider a customer service call center. What the customer wants is a prompt and helpful response. So you should be measuring the process in terms of two key indicators: time (response time) and quality (first call resolution). What you don't want to measure are costs, calls per person, and so on. The customer doesn't care about these items — by including them, we muddy the water. These items could be included in an associated report, but they shouldn't be managed in the same way as time and quality.

Identify primary and secondary metrics

In a similar way, you don't want to include two similar types of metrics in the same scorecard. Often, retailers try to

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measure both raw value and some representative percentage equally. But, if you consider the customer's perspective, you can usually identify which has the greater value in terms of strategy and performance. The other metric then becomes secondary information, perhaps documented in an associated report.

Using scorecards to improve communication

A scorecard not only provides a tool to help manage performance, it is also a communication vehicle. Returning to the call center example, if you measure response time and first call resolution, you are showing the organization what really matters to the business.

Scorecards or dashboards?

Scorecards and dashboards are often used interchangeably. But there are differences. Knowing when to use each appropriately will provide the greatest chance of adoption and success.

A *scorecard* is a framework that uses visual elements to draw attention to various levels of performance — often using red, yellow, and green status indicators. To manage strategy effectively, scorecards should be heavily integrated into the management process. As a proven practice, scorecards should display KPIs and metrics at a monthly level to reinforce a regimented timeframe.

A *strategy map* is a casual diagram that shows how the strategic objectives impact each other and the corporate mission. It becomes a communication tool for the organization,

so everyone can understand strategy and what they need to do to improve performance.

A *dashboard* typically displays operational or real-time data. KPIs and metrics are shown in various dimensions. This capability can often be provided within a single report. A dashboard can include red, yellow, and green conditional formatting to highlight problem areas — similar to a scorecard.

As an analogy, you can think of dashboards and scorecards in terms of driving a car. On the dashboard of your vehicle, you have a series of operational dials that provide tactical information. But this information doesn't help you determine how to get to your destination — these are strategic decisions and require a scorecard.

In this way, you enable the business to understand how each role impacts performance. In turn, you allow people to make decisions that will enhance value and make the process even more efficient or effective.

Layering business analytics tools

Other business analytics tools can help. Dashboards and reports add color to objectives and provide important analysis and diagnostics. But keep the scorecard focused on the few items that really matter to the organization. By maintaining a consistent, monthly system where the scorecard and management process are interdependent, you stand a greater chance of long-term success.

Diving into Dashboards

More and more chains are using dashboards to provide at-a-glance views of current business performance, such as flash sales, for decision-making. That's because when executives change targets, forecasts, or resource allocations to address performance issues, these changes are also reflected in the tactical and operational dashboards — as well as their related forecasts and plans, and so on — throughout the organization.

Dashboards provide critical information in a single display. Therein lies their appeal and the reason why retailers often deploy them as a “front door” to their performance management initiatives, in concert with other management functions such as analytics, reporting, budgeting, and forecasting.

Getting buy-in from senior management

Like any other strategic initiative, performance management initiatives and dashboards and scorecards are most successful when coupled with the strategic vision and endorsement from the senior executive team. With dashboards, managers can drill into or through related reports and other information to explore and understand the trends and issues affecting performance at a granular level.

A financial workbench/dashboard, for example, allows management to integrate operational plans for stores, merchandise, and marketing and see the impact on key financial statements: P&L (profit and loss), balance sheet, and cash flow. A financial workbench helps controllers and CFOs understand how to better control costs by looking at plans, what-if scenarios, and actuals. The financial numbers roll up into a set of high-level KPIs, giving them the tools to make better business decisions and accurately measure results.

Choosing appropriate dashboard solutions

But not all dashboards are the same. Chains must be careful to adopt dashboard strategies that provide each user group/role/part of the organization with information that is appropriate to their role, is updated on a schedule that meets their needs, and is shared consistently across the enterprise. A series of disconnected dashboards is of no value, so IT investments must accommodate these factors to ensure a successful deployment.

Deploying Dashboards and Scorecards

In his TDWI Best Practices Report “Deploying Dashboards and Scorecards,” Wayne Eckerson provides a helpful definition of an often misunderstood term:

Dashboards and scorecards are multilayered performance management systems, built on a business intelligence and data integration infrastructure, that enable organizations to measure, monitor, and manage business activity using both financial and non-financial measures.

Dashboards and scorecards share three basic characteristics, or, what Eckerson calls “The three threes.” This section explores these characteristics.

Three applications

According to Eckerson, every dashboard contains these three applications: monitoring, analysis, and reporting. These sets of related functionalities are woven together seamlessly and built on an information infrastructure designed to fulfill user needs.

Three layers

The most distinctive feature of a dashboard, writes Eckerson, is its three layers of information. The first layer is graphical, abstracted data to monitor key performance metrics. The second layer is summarized dimensional data to analyze the root cause of problems. And the third layer is detailed operational data that identifies what actions to take to resolve a problem.

Much like peeling the layers of an onion, Eckerson says a performance management system lets users peel back layers of information to get to the root cause of a problem. Each layer provides additional details, views, and perspectives that enable users to understand a problem and identify the steps they must take to address it.

Three types

Finally, dashboards come in three types. Eckerson outlines them as operational, tactical, and strategic. Each type features the three applications and layers, albeit in different ways:

- ✓ Operational dashboards track core operational processes and often display real-time data. These dashboards emphasize monitoring more than analysis or management.
- ✓ Tactical dashboards track departmental processes and projects and emphasize analysis more than monitoring or management. They are often implemented using portals and run against data marts or data warehouses.
- ✓ Strategic dashboards (or scorecards) monitor the execution of corporate strategic objectives at each level of the organization and emphasize management more than monitoring or analysis. They are often implemented to support a *Balanced Scorecard* methodology, an analysis

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technique developed by Robert Kaplan and David Norton that translates an organization's mission statement and business strategy into specific, quantifiable goals and then monitors related KPIs.



Because each business user is responsible for different aspects of the retail organization's performance, the company should deploy multiple versions of each type of dashboard, according to Eckerson. The critical thing to remember is that organizations need to build each dashboard on a single data infrastructure and application platform to deliver consistent information to each user.

Operational dashboards: Focus on monitoring

Operational dashboards empower managers to track core operational processes. This type of dashboard provides immediate visibility into KPI performance, allowing business users to make quick decisions or take corrective action as soon as a problem or opportunity arises.

Typically, operational dashboards also generate alerts that notify users of exception conditions in the processes being monitored. For example, Web inquiries or scheduling processes — those that impact real-time consumer response and satisfaction — can be monitored with timely insight to offer a quality first impression for customers.

Tactical dashboards: Emphasis on analysis

Tactical dashboards help managers and analysts track and analyze activities, processes, and projects. Analysis is their key strength. They display at-a-glance results in a Business Intelligence (BI) portal or professionally authored report format that contains the charts and tables that business users need.

Business users can drill down or through the data using multidimensional (OLAP) analysis and advanced reporting to pinpoint the causes of trends or issues. An *OLAP analysis* gives business users primary access to data warehouses to report on categories like time, location, product, productivity, and sales costs. When deployed correctly, tactical dashboards can provide the detail needed to inform key decisions and workflow process changes.

Scorecards: Managing strategy

A scorecard is a strategy management application that helps organizations measure and align the strategic and tactical aspects of their business and processes via goals and targets.

Because of their role in executive decision-making, scorecards demand a more structured approach and framework than operational and tactical dashboards. As a result, they often use a methodology such as The Balanced Scorecard, TQM, or Six Sigma. Scorecards deliver quick, at a glance comparative data to key channels and regions.

Applying Dashboard Initiatives

Eckerson concludes his paper with several key considerations for retail IT teams to apply to their dashboard initiatives. As you begin to plan your dashboard initiatives, keep these best practices in mind.

- ✔ **Plan for the long haul:** Word about successful dashboard solutions spreads like wildfire. If you've delivered a successful solution, you'll be bombarded with requests to deliver them to other departments. The number of users may grow rapidly and put a burden on your IT infrastructure. If you're not careful, response times will plummet, along with your reputation.
- ✔ **Plan for real time:** A performance management system populated with more timely data lets executives and managers proactively optimize performance. So even if your business users don't ask for more than daily updates, be prepared to deliver them. Select dashboard solutions that support event-driven processing and can prove their scalability across users, sources, and data volumes.
- ✔ **Develop on a single platform:** It's very easy for managers to build or buy their own solutions independent of each other. These dashboard silos eventually compete with each other for resources, and undermine an organization's ability to get a single picture of performance.

All dashboards aren't created equal

High-performing retail organizations need information that will improve their decision-making in a way that drives better performance. And more often than not, they need it in an easy-to-understand, at-a-glance format that leads them to making those decisions.

Increasingly, this format is the dashboard. However, not all dashboards are created equal; nor are all dashboards the same. Retailers pursuing a dashboard strategy must ensure that each business user receives information that is specific to their role and task, and that is refreshed according to the frequency of their decisions.

Operational managers need timely information and analytics on a frequent

basis. Executives, on the other hand, may only need to see updated results every month. Dashboards must be easy to use, provide the right level of interactivity, and empower users to drill down into the results.

Also, dashboards must be integrated across the organization and share a common data source. Finally, they must be deployed within the context of a performance management strategy, with metrics, thresholds, and targets all tied to commonly understood and shared business goals.

To build a successful dashboard deployment, chains must take into account these considerations. With business analytics, disconnected dashboards that do none of the above are of little value to anyone.

✔ **Develop effective metrics:** Among the many best practices in this area, Eckerson advises companies to avoid cluttering dashboards with more metrics than a user can understand or act on. If you have more than seven, writes Eckerson, you should create hierarchies using folders, tabs, or drill-downs to preserve the clarity and simplicity of the display.

Successful Scorecards in Action

A construction industry retailer needed to extract and disseminate the information essential to measuring the company's Balanced Scorecard initiative in a timely and cost-effective manner. The scorecard was one tool the company was using to reach its long-term growth rate of doubling its size every five years.

Identifying leading and lagging characteristics

The executive team worked together to develop and refine a true Balanced Scorecard. The company identified KPIs in finance, customer service, internal processes, learning, and growth. The group identified leading and lagging characteristics, and then turned to extracting and disseminating the information to relevant business users to keep the momentum going using business analytics tools that included scorecard applications.

Streamlining information processing

The new platform delivered immediate benefits for the construction products retailer. Business users can now get the information they need in three minutes instead of three days. That means faster access to standard reports and the ability to conduct thorough project sales analysis. The software allows the retailer to target market strategy, evaluate success, and leverage best practices to create a single version of the truth across the company.

Dashboards in Action

A retail drug store needed greater insight into which beauty products were selling best. Tracking sales and monitoring demand for beauty products by different consumer groups was a key objective for the retailer to ensure it met sales targets.

Daily sales data was previously fed into a spreadsheet for the purpose of reporting daily sales, but the spreadsheet had to be updated manually and the system was found to be inflexible. The retailer needed the ability to create sophisticated daily sales reports that offered actionable insights for various business users, including finance staff who had previously entered data manually to the complex spreadsheet system, analysts who needed to review the sales data and produce ad hoc reports, and, most importantly, product managers, the

key users of the system, who needed to track the performance of specific brands and the products within those brands.

Creating a daily sales system

The retail drug store's strategy revolved around a daily sales system that allowed easy analysis of daily sales information, product sales trends, and product sales history, facility to write simple ad hoc reports, and opportunity to track the outcome of product sales initiatives.

Business users needed to be able to review reports using a browser-based interface that let them drill down into the data to identify where sales were needed to meet targets, which products were selling best in the month and to which market sectors. By contrast, drug store chain executives wanted a top level view of daily sales, ideally in graphic format, to illustrate performance clearly and highlight any areas needing immediate attention.

The solution was a dashboard that displayed key daily sales information. The benefit of the dashboard was that it could display the most important reports and business indicators, but was sufficiently flexible to allow those reports to be changed as necessary to reflect the current business focus. The solution was also able to report easily across multiple data sources.

BI beyond the spreadsheet

The chain has access to detailed information on sales compared to budget and product sales by customer type. And senior management has an immediate view of business performance through the dashboard screen. The dashboard offers a focused view of the information that wasn't possible with spreadsheets and saves time and eliminates errors in the analysis phase.

The dashboard also sets the stage for ad hoc analysis, which lets business users build reports easily, and pre-defined reports give management an instant view of areas that demand immediate attention. Reports are also delivered much faster than with spreadsheet programs, helping the retailer maintain a competitive edge in the drug store chain landscape.

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Chapter 5

Using Predictive Analytics to Anticipate and Respond

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In This Chapter

- ▶ Understanding advanced and predictive analytics
 - ▶ Deploying decision management
 - ▶ Going beyond market basket analysis
 - ▶ Predictive analytics in action
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What if you could accurately predict customer demand for your merchandise? It would ripple through your entire organization, signaling where you should cut back on surplus stock and where you should double your orders. It could save your company millions of dollars a year and drive greater top line sales.

Before you start looking for a crystal ball, explore the power of predictive analytics. *Predictive analytics* is software that mines data to understand current and historical patterns and offers predictions that help you make better decisions.

Put another way, predictive analytics connects data to effective action by drawing reliable conclusions about history, current conditions, and future events. The approach is rooted in advanced mathematical analysis. But that goes on behind the scenes. As a business user, you don't need to understand exactly how the software does its magic. You just need to know how to apply predictive analytics to key business issues to deliver value.

In this chapter, you explore the power of predictive analytics, how the concept of decision management and predictive analytics work together, what insights you can achieve from sales and customer data, and much more.

Predictive Analytics 101

Predictive analytics relies on advanced analytical algorithms to process historical data and “learn” what has happened in the past. The software then creates models that can be applied to make judgments about current or future decisions. You might apply predictive analytics to get insight into why customers responded or didn’t respond to a promotional offer, for example, or what percentage of customers are likely to shop your e-commerce site in December.

Predicting customer actions

Predictive analytics is used to address five business objectives. The common denominator is the goal of gaining value from customer relationships. Those five objectives are

- ✓ To attract more (and better) customers
- ✓ To grow the value of existing customers, through cross-selling or up-selling products or services
- ✓ To retain the most valuable customers and offer them targeted promotions
- ✓ To manage and mitigate the risk inherent in transacting with customers
- ✓ To detect and prevent fraud

Generating revenue growth

When you apply predictive analytics in any one of the five areas mentioned above, it can drive significant value. But you can take predictive analytics a step further by interconnecting these business areas in ways that boost returns and drive profitable revenue growth.



For example, retention analysis may reveal which product cross-sales increase customer loyalty. Growth analysis gives the profile of customers with the greatest value potential, which can be used to attract and acquire similar customers. And fraud analysis exposes the characteristics of customers who should be avoided to minimize the risk of fraud-related losses.

Using Decision Management As a Competitive Advantage

Have you ever considered how many decisions you make in single day? From whether or not to hit the snooze on the alarm to what you eat for breakfast, what you wear to work, which radio station to listen to on the way to the office, which calls or e-mails to return first, which tasks and projects take priority — chances are you make so many decisions on auto-pilot every day that you barely notice you're making them.

But when it comes to retail, decision-making is hardly automatic for most organizations. Many managers spend hours crunching numbers and doing collective gut checks in high-level boardroom meetings. But those old-fashioned methods don't always produce new market success. The competitive advantage in today's global marketplace is the ability to manage, optimize, and automate decisions. It's an advantage because it allows you to execute business strategies faster and more effectively than the competition via informed choices.



Your challenge is to make better use of data in decision-making. The problem is not the amount of data. If anything, the problem is too much data and too little time to make important decisions. Predictive analytics can help you guide business processes and customer interactions nearly automatically — even in the face of changing conditions — using a decision management platform. *Decision management* employs business rules, a decision process framework, and predictive analytics to optimize and automate decisions, enhance outcomes, and solve specific business problems.

Understanding decision types

Optimizing decision-making is the end goal with predictive analytics. The first step toward that goal is to understand what types of decisions you need to fundamentally make and who owns those decisions. Broadly speaking, three primary organizational decision types exist: strategic, operational, and tactical. Of course, there's crossover between roles. It's not unusual for a person at any level of an organization to make a strategic, operational, or tactical decision.

Setting long-term strategic direction

Strategic decisions often set the long-term direction for an organization. A strategic decision could be an objective or an initiative that results in guidelines from which operational decisions are made. Strategic decisions, which are generally collaborative, require flexibility and are often made in response to changes in business or market conditions.



Strategic decision makers include C-level executives, vice presidents, and line-of-business managers who make decisions about issues, such as how to lower shrinkage, how to increase cross-sell opportunities to meet sales targets, and whether or not to acquire a company to expand market coverage.

Driving policies and processes

Operational decisions generally include forming policies or processes. Operational decisions are focused on a specific project or objective executed at a tactical level. They serve to make tactical decisions more personal and anticipatory. Operational decisions are driven by the need to establish efficient, repeatable, scalable processes using accurate and timely information. They require visibility into the business and an understanding of external conditions and influences.



Operational decision makers include business managers, system managers, and business analysts who deal with decisions about issues such as which seasonal items will be stocked at the front of the store and what products to offer on promotion.

Automating front-line actions

Tactical decisions are commonly “front-line” actions that apply a policy, process, or rule set to a specific case. These types of decisions lend themselves to automation and make outcomes more consistent and predictable. They require accurate and, often, real-time information for peak effectiveness.

Tactical decision makers include customer service representatives, store managers, sales associates, and automated systems, such as Web site recommendation engines. People in these roles make decisions about issues such as when to try to upsell a customer or when to issue a refund.

Making Better Decisions

Armed with a clear understanding of decision types, you can start determining which decisions can be automated and optimized for your operation’s financial benefit. The key is to optimize and automate decisions in ways that make data-driven business strategy the foundation for action.

Using predictive models

Predictive models are part and parcel of predictive analytics — and they cross all disciplines within an organization. A *predictive model* is a model that tries to predict the probability of an outcome. In the retail setting, you might build a predictive model to determine which items complement one another in order to spur cross-sell opportunities or promotional programs.



The old-fashioned and largely ineffective way to increase cross-sell opportunities is to call on a business analyst to mine data and determine the best potential product mix. But be warned. This is a multi-step process that might not ultimately ring true for most customers and therefore lead to lost sales opportunities or even a backlash from otherwise satisfied customers. Predictive analytics offers accurate insights into which cross-sell strategies work and which ones don’t.

Walking the path to decision management

To build a decision management infrastructure, your business managers first need to define their departmental business challenges. Decision management can then optimize the targeted decisions with decision-centric applications developed for specific business problems. These applications present information in terms business people are familiar with, and fold in predictive analytics within the context of the decisions that impact the problem.

The business manager can then prioritize the actions that should be taken when particular conditions are met. Decision management facilitates this with the balanced use of human defined rules, system created predictive models, and business objectives. Simulation of process outcomes, including the results of operational decisions over time, helps business people tweak how each decision will be handled.

Finally, organizations should make their optimal decision patterns

part of the DNA of their business processes. Decision management accomplishes this with its interaction-centric deployment architecture. Deployment approaches, including real-time scoring and bulk scoring, ensure that best practices are embedded at the right time to impact each interaction. Interactive questions help gather important information at the point of decision to ensure proper outcomes.

Implementing decision management makes operational decisions deliberate, tactical business decisions more personalized, and ensures the consistency of decision processes and flexibility within established guidelines. It provides the ability to predict (and therefore manage) outcomes to help generate better results with every decision. With its closed loop reporting of results and continued refinement of rules and predictive models, decision management recommendations grow more accurate and effective with every decision.

Predictive models can score each customer in real time and build corresponding rules. With these rules in hand, marketers can adjust program priorities to optimize cross-sell opportunities based on real customer feedback. Predictive analytics empowers a virtuous cycle in which cross-sell decisions grow more effective with each iteration. It's an open environment in which customer interactions are precisely anticipated and effective responses are planned.

Automating decision-making

Developing this virtuous cycle demands decision management. Decision management includes all aspects of managing automated decision design and deployment that a chain uses to manage its interactions with customers, employees, and suppliers. In essence, decision management sets the stage for optimized decisions to become part of the DNA of your business processes.



According to a published report by James Taylor, an expert who's written and consulted extensively on decision management, "Decision management makes it possible, for the first time, to use predictive analytics as an integral part of a real-time decision process."

Anticipating the customer's next move

Predictive analytics offers insight that helps retailers anticipate what customers will do next, which are likely to leave for a competitor, or which will respond favorably to up-sell or cross-sell campaigns. Predictive insights can identify areas of potential risk and fraud or spot new and emerging market opportunities. Retail organizations that can automate and optimize decisions informed by predictive analytics have a significant advantage over competitors that can't.

Advanced Analytics Uncovers Trends

Retailers generate huge amounts of transactional information, which provides details on product purchase patterns and individual customer buying patterns or customer segments trends. The goal is to make this data actionable — to find out what sells and what doesn't. The problem is finding the customer needle in the data haystack. It's nearly impossible to mine this data manually. That's where predictive analytics software comes in. Predictive analytics does more than find information. This software uses algorithms to turn past transactions into future insight.

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Beyond market basket analysis

A key tool for retailers is market basket analysis. *Market basket analysis* uses algorithms to analyze transaction and customer data, relate it to previous purchases, and build predictive models that can be applied to:

- ✓ Decide what categories or products to display or promote together
- ✓ Decide whether an offer is valid for a particular customer or group of customers
- ✓ Predict the probability that the customer(s) will respond to the offer
- ✓ Calculate the value of the customer accepting the offer

Applying these models across offers allows you to select the best for each customer or customer segment. These are then delivered to shoppers in the most appropriate way. For example, loyalty card holders may receive targeted coupons online or enclosed with their monthly statement.



In this way, you can ensure your product offers and promotions match shopper preferences and behavior — and maximize return on marketing spend. By linking purchases to individual purchasers, you can take this even further, tailoring offers to specific customer segments and driving higher returns from more precisely targeted campaigns.

Anatomy of market basket analysis

Here's how predictive analytics works in the context of market basket analysis: It begins by taking transaction data and using algorithms to unearth combinations of products that customers typically purchase together, such as fish and fresh vegetables. With this information, you can make decisions to display these products together or launch a promotional display that offers a discount to customers who buy both products. This is called an undifferentiated analysis.

You can go a level deeper with your market basket analysis by combining this information with other customer data, such as demographics, behavior, and attitudes or external data, like weather conditions. The next step is using predictive models to determine which mix of products or promotions is most effective for each customer segment, whether it be senior citizens or single moms. You might discover, for example, that younger career women tend to buy chocolates and wine whereas middle-aged men prefer to buy beer and pizza.

One-to-one marketing

Basket analysis helps you predict consumer behavior at the transaction level so you can make sure your product offers and promotions meet shopper expectations and behavior. The end goal is to develop custom offers or specific offers for highly personalized campaigns. This is the notion of *one-to-one marketing*, relationship marketing that treats every customer as a unique individual. This is the Holy Grail of retailing.

Predictive Analytics in Action

Predictive analytics is more than a promising theory. Retailers are actively harnessing the power of predictive analytics to drive revenue. Indeed, customer interactions through any channel are now truly evidence-based and result in more predictable — and more profitable — outcomes.

Predictive analytics software allows users to translate customer knowledge into action. The result is a more effective Customer Relationship Management strategy, including targeted advertising and marketing campaigns, upsell and cross-sell initiatives, and long-term customer loyalty, retention, and rewards programs.

Clothing retailer maximizes customer relationships

An international children's clothing retailer was battling a slow economy. To drive greater profits, the company needed to spot trends early and proactively reach customers rather

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than react to customer demand. The retailer turned to predictive analytics to gain a deeper understanding of the customer that would pave the way to more effective marketing campaigns, stronger sales, and greater overall lifetime client value.

The clothing retailer used predictive analytics to leverage and analyze large amounts of customer data instantly on profitability, purchasing, demographics, and buying behavior from its loyalty program. The results of the analysis offered the company actionable insights that set the stage for improved segmentation. Using predictive analytics, the company discovered and connected the most profitable customers with its marketing campaigns.

For example, the retailer customized offers with an online sales card that contained contact information, transactional information, and certain product pack recommendations customer by customer. The sales card also included customized benefits with the increase of reward points, promotional products, or customized presents at the point of sale.

Customers who weren't part of the loyalty program were ranked in segments according to profitability, family size, and transactional status. Armed with this information, the retailer optimized campaigns on an individual level, targeting the most valuable and profitable customers while improving satisfaction through personalized member benefits.

Thanks to predictive analytics software, the children's clothing retailer saw campaign responses improve by more than 25 percent. The company also witnessed customer purchases increase by an average of 15 percent in one year even though it mailed fewer catalogs and promotions.

Discount retailer forecasts product demand

An international discount retailer set out to expand its concept. But the retailer's legacy demand forecasting process was limited because it relied on complementary and isolated systems that looked only at past point-of-sale records. The retailer needed a modern approach to demand forecasting, planning, and ordering to drive greater profitability.

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The company turned to predictive analytics software known as category profit management. Category profit management forecasts demand automatically, and uses an algorithm to pursue profit maximization for retail categories. The software also offers simulation and analysis capabilities for demand forecasts to allow employees to quickly adjust operations.

Predictive analytics helped the retailer uncover new insights to holistically manage the sales floor of each individual store and maximize category profits. That, in turn, allowed the retailer to move into new territories.

Parts retailer improves inventory control

A spare parts retailer was making decisions about inventory levels based on simple manual calculations and the old fashioned gut check. To improve outcomes, the retailer needed to tap into real-time supply and demand intelligence to discover prime areas to cut back on surplus stock.

By more accurately predicting customer demand for slow moving products, such as a specific part that is only sold to one specific customer and might sit in a warehouse for several years before it's needed, predictive analytics empowered the retailer to identify slow-moving and fast-moving components and continuously improve the range of products it stocked. Customer satisfaction surveys demonstrate that the process has led to strong customer service outcomes.

Leveraging predictive analytics also helped the retailer gain new and deeper insights into its customers that led to closer relationships with key suppliers. The parts retailer was even able to improve its emergency delivery service for customers facing critical machinery breakdowns by using predictive analytics to identify and stock items that were most likely to be required in an emergency (based on historical customer data from the previous five years).

Using predictive analytics to analyze its customer data and predict customer demand led to a \$40 million savings based on a 25 percent reduction in inventory in one year.

Chapter 6

Social Marketing and Content Analysis Made Easy

In This Chapter

- ▶ Measuring consumer sentiment and brand perception in social media
 - ▶ Merging contextual data with other internal data sets
 - ▶ Tapping into predictive intelligence
-

What you don't know about what your customers are saying about you could hurt you. Or it could offer clues as to what the next hot trend in your niche will be. Why take the chance on missing out on any of this information?

You can measure consumer sentiment from data gathered on Twitter, blogs, and other Web services and networks. By using natural language processing (NLP) retailers can now analyze everything from product names and industry jargon to slang and emoticons — and it's already being used by some pretty big businesses.

Indeed, business analytics software is available today that lets you uncover and analyze information from social media sources, and then merge that information with vast internal data to yield faster, more accurate insights and predictive intelligence.

In this chapter, you explore the new age of business analytics, how to tap into hidden information in unstructured data, and how content analytics is making positive impacts in retail settings.

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The New Age of Business Analytics

If you're like most successful retail leaders, you always seek new business insights to drive your organization forward. You identify the root causes of problems, spot opportunities more quickly, and anticipate and exploit future market trends. And if you're like most successful retailers, you've probably turned to business intelligence (BI) solutions to track key metrics in sales, marketing, and operations. This insight relies on structured, stored data that's internal to the organization.

But that's not the whole picture. Across the enterprise and on the Web, the market speaks volumes. Customers, prospects, and influencers write comments, fill out forms, and talk to sales, marketing, and customer service personnel. This information should be factored into decision-making. Instinct and anecdotal information also contribute to good decision-making. However, this sort of information is hard to track and analyze objectively. It often resides in unstructured and semi-structured content, such as documents, written notes, Web pages, and more.

Call it the new age of business analytics. New data mining and text analytics software allows business users to monitor changes in consumer, constituent, and employee attitudes, uncover deeper insights, and then predict key factors that drive future customer acquisition and retention campaigns. Retailers can even extract sentiment from emoticons and slang terminology that people often use in describing their view of a product or service.

Unstructured Content Is Exploding

Unstructured content can be found everywhere — in the text of e-mails, documents, blogs, Web sites, and handwritten notes and contained in enterprise systems and cloud-based networks, inside or outside an organization.



As much as 80 percent of information generated daily is unstructured. Some of this information contains potentially relevant business information.

The unstructured data challenge

This semi-structured or completely free-form information often escapes careful scrutiny. It's difficult to corral and utilize because it isn't organized. This info can't be queried like a database, yet it contains critical business information that can be used to identify customer preferences, support concerns, sales issues, product quality, competitor position, supplier feedback, and other business-critical information that can help retailers be more successful.

Recognizing the untapped BI opportunity

Smart retailers recognize the untapped business value in unstructured content. For example, companies can use this content to answer questions:

- ✓ Do customers relate to our brand?
- ✓ What are customers saying about our new store format?
- ✓ Are they recommending our merchandise to their friends?

Retailers need a systematic way to find, distill, and analyze the massive amount of unstructured content that exists today. Content analytics solutions provide the answer. *Content analytics* is an emerging field of analytics that empowers companies to unlock the insights contained in unstructured content.

Business-Driven Decision-Making

Many retailers rely on BI software to uncover key data-driven insights from operational systems and data warehouses.

Good managers supplement these insights with anecdotal information about external market variables by reading blogs,

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perusing product reviews, and talking to customers and field employees. However, this approach is time-consuming and subjective.

With content analytics, companies have a powerful, objective means of culling business insights from massive amounts of unstructured content. This empowers retailers to move from data-driven decision-making to “business-driven decision-making,” which considers both internal and external variables for optimal decision-making.

Consider the example of a retail chain that’s making a decision about investing in a new private-label product line. Using data-driven evidence, the retailer has solid information about the costs and sales trends associated with the product line. By adding external market insight, the company can gain a more comprehensive view of the marketplace, including customer preferences and perceptions as well as competition. By combining data-driven evidence with external market insight, the retailer can make a more fully informed business-driven decision about whether to take a risk on the new product line.

Changing the nature of analytics

Content analytics is an emerging field of analytics that empowers companies to unlock the insights contained in unstructured content. Content analytics offers the ability to access, sort, and analyze unstructured content and then combine it with structured data and other existing information resources and applications for reporting and analysis.

Content analytics is a natural extension of BI. Many companies already use BI for “data driven decision making.” This is a decision-making process based on insights gleaned from records of past transactions

and other structured information typically housed in data warehouses.

Retailers can supplement these BI methods with content analytics techniques, which can be used to expose trends within unstructured content. Content analytics has particular strengths for tracking shifting market information in near real-time, such as a sudden rise in warranty activity or customer complaints. It gives companies the ability to gather and analyze critical information that moves organically within the marketplace and offers a powerful extension of traditional BI techniques to improve decision-making.



Companies put themselves at a disadvantage if they ignore the growing repository of unstructured content and the business insight it contains. Yet given the time and cost of reviewing, filtering, and interpreting this information, it is cost prohibitive for most retailers to analyze this data on their own. Even if they do, the resulting information is often subjective, anecdotal, and difficult to track. But content analytics solutions can help retailers harness unstructured content in a systematic, cost-effective way.

Handling Burgeoning Content

Content analytics capabilities are based on proven technologies that have been deployed for years. These technologies can handle the rapidly expanding amount of unstructured content spawned by the widespread use of the Internet, collaboration platforms, enterprise networks, cloud computing, and other information technologies.



Several key technology components are used to power a fully featured content analytics solution. These components include

- ✓ Crawler, a search and indexing technology to identify and tag relevant content in a wide variety of unstructured or semi-structured information sources
- ✓ Text analytics, technologies that sort, filter, and categorize content to distill the most relevant information and to automatically highlight trends and anomalies
- ✓ Exploration and visualization technologies, offering a graphic display of content correlations, frequencies, deviations, and trends in graphs and charts for fast consumption
- ✓ Open integration technologies, supplying these insights to other applications and systems for more encompassing analysis and reporting

When combined, these technologies offer the ability to identify, sort, filter, organize, visualize, and deliver the critical insights found only in unstructured content.

With the amount of unstructured content exploding, it has become a business necessity to invest in a content analytics system and use unstructured content for competitive advantage.

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Imagine if a retailer could use content analytics to identify issues that lead to product returns and reduce them by ten percent annually. A substantial return on investment can be achieved by retailers that use content analytics to monitor and act on targeted areas, such as customer complaints, warranty issues, and fraud claims. A content analytics solution can manage the pervasive use of unstructured content and positively impact a company's bottom line.

Content Analytics Capabilities

Content analytics can be used in numerous retail business situations. You can measure and monitor customer service metrics based on analysis of text in call center records. You can set product release priorities based on warranty claims and product performance. You can develop a winning competitive selling strategy based on analysis of text in competitor filings and product or shopping reviews. And you can predict customer attrition based on contents of claims forms.

Content analytics works through a dynamic, highly visual interface that lets retailers discover important information by identifying and surfacing correlations, empowering retail organizations to discover hidden trends, augment BI reports, or enhance business processes with unstructured content. It's all about discovering, refining, visualizing, and delivering new business insights.

Uncover hidden trends

With content analytics, you can automatically identify and tag key attributes and entities within content by crawling almost any content source and identifying key words and phrases. Content is identified and tagged across a wide variety of content stores using sophisticated crawler technology for comprehensive information access.

Drill down into content



Content analytics solutions empower navigation and drill-down based on identified key attributes, entities, and extracted dimensions. Crucial information is extracted by applying a series of "annotators" that identify the key

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concepts in a piece of text as well as the relationships among those concepts to present content relevant to data analysts and business users.

Highlight the unusual and unexpected

Content analytics allows you to highlight deviations and anomalies through advanced visualization and enables exploratory mining for more informed business decisions and action. Content analytics offers a variety of visualizations, including time series views, facet views, deviation views, and trend views through an easy-to-use interface.

Send information to other apps

Content analytics offers support for a broad delivery of information to other processes and applications using open standards. These include ECM (Enterprise Content Management) repositories and CRM (Customer Relationship Management) applications, as well as BI for additional reporting and analysis.

Content Analytics in Action

With the Internet and social media infiltrating international culture, retailers that want the edge are turning to content analytics — and seeing significant results. This section offers some examples of content analytics in action.

Language lesson retailer analyzes consumer responses

When a leading language lessons retailer needed to capture and analyze consumer responses to uncover hidden trends in the text, it turned to content analytics solutions. The retailer used predictive analytics to analyze responses from online customer product reviews, competitor Web sites, and open-ended survey questionnaires.

By tapping into the insights provided by unsolicited, unbiased customer feedback, managers were able to clearly recognize why certain customers were brand promoters or brand detractors. The company also improved customer satisfaction, product development, and marketing effectiveness. Executives continue to monitor blogs, news feeds, and other public text sources to keep a pulse on how the public perceives its products — and the competition.

Grocer taps free-text responses to find food consumption habits

An international grocery chain was challenged to parse and categorize huge volumes of unstructured data from an ongoing survey of food consumption patterns, including information on hundreds of thousands of meals. The goal was to discover consumer food preferences.

The retailer analyzed free-text responses from a large number of consumers because it offered a more economical way to create a picture of consumption habits compared to conventional food diaries and other methods.

By applying content analytics to surveys, the grocer was able to develop a clear understanding of consumer food preferences, better handle anomalies in free-text responses to categorize those anomalies more accurately, and even use survey results to drive greater awareness of health issues among its target audience.



The overarching result: More effective advertising campaigns and more strategic product stocking drive greater profits.

With content analytics, the grocer moved from data-driven decision-making to business-driven decision-making. The retailer looked beyond internal metrics and data to inform its decision-making with external information that empowers qualitative analysis.

Consumer electronics retailer triples profits with content analytics

An international technology retailer had an instinct that its customers were challenged to make hardware and software purchasing decisions. That challenge was hurting online sales. The company needed to quickly and easily mine the information that was buried in the customer and transactional databases.

Reviewing customer profiles

The company leveraged a data mining solution to build an engine that recommended appropriate products based on customers' profiles. Those profiles were based on information gathered during the online registration process and from past transactions.

The chain had collected the following information:

- ✓ Age
- ✓ Sex
- ✓ Occupation
- ✓ Survey data collected from previous events and seminars
- ✓ Purchase information from over-the-counter sales
- ✓ Transaction data from its Web site, including both page views and purchase data

Building a recommendation engine

The resulting recommendation engine could select news articles and featured products to be displayed on the customer's personal home page, select specific products to highlight when the customer visited a particular product section, and recommend complementary products when a customer made a purchase.

Marketers also identified its most profitable customers, based on shopping frequency and purchase size. This empowered the new recommendation engine to focus on these customers in particular.

Exploding traffic; tripling profits

During the first month that the recommendation engine was available, site traffic increased from a typical 18 million page views per month to a new sustained level of more than 30 million views per month. Managers said that the rise in traffic could be almost entirely attributed to the new recommendation engine. Overall, the recommendations increased the “stickiness” of the site from 7.8 to 15 page views per session. Profits tripled, as sales increased 18 percent versus the same period of the previous year. Even more important, sales significantly increased since the recommendation engine went live, driven by the fact that consumers purchased many more items.

Prior to the go-live date, the chain saw an annual growth rate of approximately 270 percent in sales. After the recommendation engine went live, the growth rate immediately jumped to 320 percent. According to the company, achieving this substantial increase in sales without any additional promotional expenditure has tripled the profitability of the site.

Chapter 7

Ten Ways to Improve Shopping Experiences

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In This Chapter

- ▶ Pinpointing consumer buying and behavior trends
 - ▶ Optimizing merchandising plans
 - ▶ Gaining visibility across the supply chain
-

Business analytics gives you the edge in your efforts to improve customer shopping experiences — and it's not all about market basket analysis. You can use business analytics to improve retail promotions, develop key financial indicators, align corporate and store operations, and much more. In this chapter, you look at ten (okay, really 11) ways to improve customer shopping experiences by using business analytics.

Pinpoint Consumer Buying and Behavior Trends

The most successful retailers work to continuously identify and analyze past and present consumer buying and behavior trends to predict future trends that drive greater profitability. Business analytics empowers you to pinpoint consumer buying and behavior trends by mining historical data to uncover nuggets of valuable information. Reporting and analysis allow you to slice and dice data through a customer lens. You can segment customers based on demographics, purchase patterns, and more. Armed with information, you can clearly see past and present trends and set the stage for predicting future outcomes.

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Optimize Assortment

You can use predictive models and association rules to determine which group of products works best for which customers. A *predictive model* predicts the probability of an outcome. *Association rules* help you discover relationships between product purchases. Association rules are based on “if-then” logic — if a customer buys bread, then she also buys peanut butter, for example.



With business analytics tools, you can understand product affinities and quickly determine which combinations perform better among which customer sets or in which channels. This offers you the ultimate flexibility to improve customer shopping experiences for different demographics while offering you new opportunities to focus efforts on the products/product combinations that generate the greatest profits, highest margins, and strongest customer loyalty.

Improve Merchandising Plans

Retailers face an environment of changing demographics, fickle consumer preferences, and pressure on margins. To meet market demand, chains require an assortment of goods in the right quantity at the right price. Business analytics can improve customer shopping experiences by offering insights that help you make smart inventory investments to minimize over/out-of-stocks, and improve inventory turns.

Improve Retail Promotions

You can use business analytics to improve the customer shopping experience via predictive analysis that anticipates customer response to targeted promotions. *Market basket analysis* uses algorithms to analyze transaction and customer data, relate it to previous purchases, and build predictive models. For more information on market basket analysis, read Chapter 5.

Develop Key Financial Indicators

With changing demographics and pressure on margins, well-designed practices for company-wide planning and analysis of results are critical to success. A differentiated shopping experience that meets or exceeds consumer demand ensures chains will be able to increase sales, protect profits, and satisfy customers.

You can use business analytics to establish and measure key financial indicators. Those indicators include comparable sales, labor, cost of goods, gross margin, and operating profit. Business analytics can also help finance, merchandising, marketing, and operations plan collaboratively to achieve a single set of financial goals and business objectives that will ultimately create a better customer shopping experience.

Business analytics empowers you to quickly and easily conduct meaningful yearly, monthly, weekly, and daily comparisons and projections, pro-rate costs to meet profitability requirements that support sales and margin targets, and measure and compare planned versus actual performance by using scorecards and dashboards. For more about scorecard and dashboards, check out Chapter 4.

Plan Promotional Impacts

Marketing and promotion costs can significantly impact a retailer's bottom line. By applying insights discovered through business analytics, you can drive higher returns and achieve a competitive advantage while protecting gains.

For example, business analytics empowers marketing managers to plan promotion campaigns, model and evaluate promotion options based on costs or sales lift, monitor results, and analyze promotions for optimal return on investments. Business analytics tools help you streamline planning, forecasting, analysis, and reporting. Business analytics delivers an intuitive top-down and bottom-up planning and reporting environment so marketers can understand the financial impact of promotional programs.

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Align Corporate Strategy and Store Execution

Using business analytics to align corporate goals and store performance around critical revenue and profitability targets is a great way to improve the customer shopping experience. In this way, you can quickly adjust plans and resource allocations to achieve more profitable growth.

Providing an outstanding shopping experience while protecting profits is always a critical balancing act. Nowhere is this more critical than at the storefront. Using business intelligence (BI) and financial planning allows a retail organization to develop top-down and bottom-up plans, budgets, and forecasts for stores. This helps ensure that store plans are aligned with corporate targets and encourages better analysis of the store level Profit & Loss. It also resolves the challenges of limited corporate visibility into store-level planning.

Keep Tabs on KPIs

Business analytics can help you set, measure, and monitor Key Performance Indicators (KPI) — a measure of performance of success factors — based on standard financial statements. You can perform “what-if” analysis of sales and costs to determine the impact on financial statements and metrics, set targets for financial drivers such as “days payable outstanding” and evaluate the impact on financial statements, and model business scenarios to determine the financial impact of decisions.

With business analytics software, you can ensure ownership and accountability for performance by assigning a primary owner for every metric. You can then organize and view scorecards by status (good, average, poor) and trend (up, down, steady). You can even set alerts and notifications so users are aware when a metric changes, embed other BI capabilities for added context and analysis, and manage corrective actions and initiatives.

Increase Cost Savings and Performance

In this area, you use business analytics tools to help you increase cost savings by comparing and benchmarking performance across stores, channels, and regions. Business analytics streamlines planning cycles and lets you conduct bottom-up planning that takes into account finance, operations, merchandising, and marketing so you can support strategic initiatives or tie into a single set of financial targets to ensure corporate strategy and field execution are aligned.



Retailers can lose out on potential profits if they are unable to react rapidly to changing conditions and plan for likely outcomes. Business analytics helps you avoid that loss.

Gain Visibility across the Supply Chain

Improving customer shopping experiences demands visibility into key metrics across the supply chain: sales, labor, inventory, and promotions. Business analytics helps retailers lower costs and improve margins with a consistent supply chain management process based on integrated analysis of information from multiple systems. Business analytics delivers cross-functional insight that helps organizations analyze spending and supplier performance quickly and cost-effectively.

For example, business analytics software can ensure goods are optimally sourced to maximize purchasing power by understanding buying patterns from KPIs, such as item and vendor contribution to total spend. The insights you gain from business analytics turn your vendors into strategic sources for key commodities, while maximizing corporate buying power by analyzing your buying patterns and how well your suppliers are responding to your needs. You can even identify opportunities to consolidate or redistribute purchasing across buyers by evaluating buyer volume, budget distribution, and buyer/vendor relationships. Ultimately, business analytics drives faster decision-making and helps you realize measureable improvements in procurement and related supply chain management processes.

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Engage Workgroups to Accelerate Time to Act

After you have insight into what consumers want, you have to act fast. Business analytics also delivers built-in collaboration and social networking to drive the exchange of information, ideas, and activities essential to effective decision-making. Smart organizations pull creative elements out of compartments or silos and integrate them into the mainstream so everyone understands and can influence the greater success.



In a collaborative environment, people proactively exchange knowledge and cooperate with one another, eliminating communication barriers and improving the organization's ability to be ready for what comes. In other words, collective intelligence ensures a more informed and aligned business — one that's more efficient, effective, and adapts quickly to internal and external change. Collaboration closes the loop from insight to action and enables everyone to work together, agree, decide, and act.

Get the insights you need to find new customers, keep the customers you have, and grow your profits!

Business analytics isn't a new concept, but new technologies are emerging that make it possible for average business users to analyze and understand the data. This book offers principles and tools you can use to discover how your customers behave — and how to put that knowledge into action to drive more sales.

- *Understand the basic concepts of business analytics* — know what solutions are available to unlock the possibilities of discovery
- *Dispel business intelligence myths* — grasp the “why” behind sales performance
- *Set up scorecards and dashboards* — get help assessing your decision making
- *Measure consumer sentiment through social media* — content analytics helps you harness the powerful information in social media today



Open the book and find:

- The inside scoop on retail analytics
- Ways to boost your customer numbers and your profits
- How to put business analytics to work for you

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