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- **Profitably address customer priorities through segmentation**
- **Break down silos with better collaboration**
- **Take your supply chain from good to great**

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Prashant Bhatia
Madhav Durbha

Supply Chain

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JDA Software Special Edition

by Razat Gaurav, Prashant Bhatia, Madhav Durbha

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Publisher's Acknowledgments

Some of the people who helped bring this book to market include the following:

Table of Contents

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Authors' Acknowledgments

Introduction

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*W*elcome to the wonderfully complex world of supply chains. A *supply chain* is a term that describes the planning, sourcing, manufacturing, distribution, and delivery of products or services from the point of origin to consumption.

Supply chain management (SCM) is a formal term for managing the physical and information flow of materials and finished goods in a supply chain. Very broadly, modern SCM requires sophisticated business processes, enabled by state-of-the-art technology. Efficiently and intelligently managing the supply chain is essential to ensure the availability of the right product at the right place at the right time for the right price.

About This Book

This book gives you basic definitions and techniques. It also has separate chapters that discuss big topics, such as manufacturing, distribution, retailing, and how the emergence of the omni-channel consumer is impacting these processes.

Because this is a *For Dummies* book, you can be sure that it's easy to read and has touches of humor.

Foolish Assumptions

In preparing this book, we've assumed a few things about you:

- ✔ You're a supply chain executive who is interested in improving your company's supply chain.
- ✔ You work in supply chain management and want an update on the latest tools and techniques.
- ✔ You are perhaps new to the role of supply chains, and are looking to get educated quickly on the basic concepts around the practice.

    ✔ You're simply curious about the details of supply chain management in a modern business.

Icons Used in This Book

You'll find a couple of icons in the margins of this book. Here's what they mean.

A Tip is a suggestion or a recommendation. It usually points out a quick and easy way to get things done, or provides a handy piece of extra information.

Anything that has a Remember icon is something that you want to keep in mind.

Beyond the Book

You can find additional information about supply chain management by visiting the following websites:

✔ For general background information, visit `www.en.wikipedia.org/wiki/Supply_chain_management`.

✔ For an online magazine dedicated to the latest supply chain management news, visit `www.scw-mag.com`.

✔ For a weekly, online newsletter that focuses on supply chain management and logistics, visit `www.scdigest.com`.

✔ For an analysis of logistics trends, technologies, and services, visit `www.logisticsviewpoints.com`.

✔ For access to industry-leading knowledge from some of the most forward-thinking supply chain practitioners, visit `www.scmworld.com`.

✔ For more information on JDA Software and how companies can use JDA's solutions and services to streamline their supply chains, visit `www.jda.com`.

Chapter 1

A Look at Supply Chains Today

In This Chapter

▶ Understanding supply chain basics

▶ Taking a look at the power of supply chains

▶ Achieving supply chain mastery

Supply chains of the 21st century are more complex and dynamic than ever before. How efficiently and profitably companies can plan, source, make, and deliver products to their customers is what separates industry leaders from laggards. For companies to drive real business value and results in today's competitive global economy, they need to better manage multiple facets of their business such as inventory, costs, assets, and new product introductions. And that, of course, can't occur without a best-in-class supply chain.

This chapter first gives you an overview of some supply chain basics and then explains why supply chain mastery is critical to your business success.

Supply Chain Basics

Defining a *supply chain* is simple enough. It is a term that describes the planning, sourcing, manufacturing, distribution, and delivery of products or services from the point of origin to consumption. However, the details are numerous, highly varied, and difficult for humans to manage in an efficient and profitable manner.

At the most basic level, a supply chain can look like Figure 1-1.

Raw Materials → Supplier → Manufacturer

Consumers ← Retailer ← Distributor

Figure 1-1: A basic look at a supply chain.

Yet, in reality, most companies today operate a supply chain network that is far more complex and looks more like Figure 1-2.

REMEMBER

A supply chain network is comprised of many components, or *supply chain nodes*, that are connected via *flow paths*. Inventory and products — as well as information — travel along these flow paths to the various supply chain nodes, with the ultimate goal of ensuring that customers' needs are met (in the most profitable way possible).

Multi-Supply	Multi-Product	Multi-Channel
Suppliers		Retail
Owned Factories		Distributors
Suppliers		Enterprise
Outsourced Factories	Design	Direct Consumers

Suppliers   Manufacturers   Customers
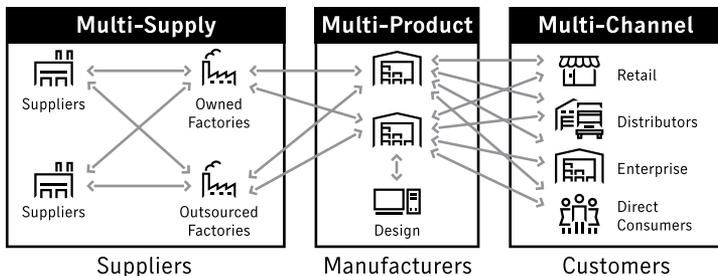
Figure 1-2: An example of a typical supply chain network.

Essential to a well-run supply chain are several key business processes:

- ✔ **Top-down processes** translate strategy into plans, and then plans into execution.

- ✔ **End-to-end processes** connect different functions, both intra-enterprise and inter-enterprise, across the supply chain — such as continuous demand, supply and replenishment planning, category management, store operations, transportation/warehousing, and sales and operations planning.

- ✔ **Processes across the value chain** are typically collaboration processes between companies, such as sellers/retailers, distributors, manufacturers, and suppliers.

REMEMBER Sometimes the term *value chain* is used instead of supply chain. The goal is to create value at the right places in the chain, and hopefully the "right place" is everywhere — delivering value to suppliers, manufacturers, distributors, retailers, and ultimately the end consumer.

The Power of a Best-In-Class Supply Chain

To give you an idea of the power of a well-orchestrated supply chain, imagine your morning cup of coffee. It's a pretty amazing thing, isn't it? Each day, 2.25 billion cups of coffee are consumed worldwide. In fact, you've probably already had one this morning. But have you ever stopped to think about where your coffee came from and how it got to your cup? Its journey is way more complicated than you might imagine.

Your steamy cup of java is actually a carefully coordinated global effort. The beans are often grown on one continent, roasted in another, and packaged somewhere else across the world. Then there's the coffee machine. It's like the United Nations of parts and components. The body could come from Germany, electronics from Japan, gaskets from China, and a thermostat from the U.S. Everything must come together perfectly for coffee to reach your kitchen or local barista. Yet

to do that, companies must successfully navigate a never-ending sea of what-ifs:

- ✔ What if one of the factories can't fulfill the order?
- ✔ What if the price of coffee beans suddenly changes, affecting the pricing strategy?
- ✔ What if a critical shipment is delayed by customs?
- ✔ What if there's a storm or an accident?
- ✔ What if there's a geopolitical incident that disrupts supply?

The Four Ps

How do companies ever meet customer expectations in a consistent and cost-effective manner while the world around them is constantly changing? It's not by magic, alien technology, or a team of super geniuses (okay, well maybe the genius part has something to do with it). Companies are able to accomplish this feat by mastering the four Ps of supply chain: products, personalization, people, and process. The following sections take a look at each one.

Products

It's easy enough to keep a log of when products leave the factory or when they arrive at the warehouse. But these days, companies need to do much more. It's not enough to see what happened in the past. It's critical to have visibility into what is happening in real time: to know exactly where every product is, in every stage of the ever-expanding global supply chain.

Companies also need to be able to tell what's coming up. That doesn't mean breaking out tarot cards at the next board meeting. It's all about staying ahead of the curve by using predictive analytics to forecast what customers will want tomorrow or even years from now. This enables companies to seize opportunities, spot potential problems, and save money. By developing a centralized platform of shared data across regions, divisions, and functions, companies can significantly reduce costs, especially in transportation.

Personalization

Today's omni-channel consumer has changed the supply chain game. With more technology, choices, and power than ever before, this consumer demands a personalized, consistent shopping experience across all channels. It's no longer enough to ship products to the point of purchase. For these consumers, brand loyalty has transformed into experience loyalty. Companies must meet their consumers' varying preferences on pricing, delivery options, and service level, or risk losing their business forever. Some consumers, for instance, are less price sensitive and will wait longer to get a product if it means getting better service. Other consumers don't care as much about price and service, but want to order an item online at work and pick it up at a store on the commute home. Satisfying these different preference demands can be incredibly complex.

REMEMBER In this new era of personalization, companies can no longer afford to have a one-size-fits-all supply chain. Instead, they must be able to understand and respond to differing customer interests, and segment their demand, production responses, and fulfillment strategies accordingly. In order to do this, companies need to make sure everything works seamlessly and fluidly so people will have the same great experience whether they're shopping in the store or on a website, Facebook page, or mobile app. This means figuring out the best place to position raw materials and work-in-process inventory throughout your supply chain, enabling you to respond quickly to changes in demand so you can consistently deliver products that meet your consumers' preferences. For businesses that do it right, the payoff can be huge.

People

A well-run supply chain can be a game-changer, but only for those companies that have the right staff in place. Take a look at the leading companies and you'll find a focus on people. Studies show that the best-of-the-best continually align business, organization, and talent strategy; identify gaps between workforce supply and business demand; and foster a culture of innovation and creativity. That takes a lot more effort than hanging one of those motivational posters in the kitchen.

The right staff need to be in the right locations in the right numbers with the right incentives to deliver the great service that customers demand, without, of course, too much staff standing around with nothing to do, or everyone being so crazy busy that the company ends up losing good people and potential sales.

Process

But what happens when a team is spread around a country, or around the world? How can a company get everyone on the same page? It's all about process.

Top companies are focused on implementing systems that help people connect, coordinate, and collaborate across vast distances and silos. Research shows that industry leaders are more likely to have systems that share information online with their business partners. And the vast majority are actively streamlining processes and improving visibility so that employees, departments, and trading partners around the world have access to the supply chain information they need.

So whether the goal is making coffee, the machines that brew it, or the trucks that transport it, it's a fact that business is moving really fast today, and in the future, it's only going to get faster as the consumer continues to want more options. Inventor and futurist Ray Kurzweil predicts that the rate of change in the 21st century will be equivalent to 20,000 years of progress. Companies that master their supply chain processes will be ahead of the curve, ready to embrace the vast amount of change that lies ahead.

Chapter 2

Examining Supply Chain Challenges

*B*ecause a supply chain has so many moving parts it's incredibly open to errors. And one small error can snowball quickly out of control.

This chapter takes a look at some of the primary challenges a supply chain may face and identifies symptoms of a supply chain that is out of control and needs to be fixed.

Primary Supply Chain Challenges

One of the most fundamental goals of any enterprise is to deliver maximum value for its shareholders. This goal is typically reflected in metrics such as return on assets (ROA), return on invested capital, or economic profit.

Yet, to continuously deliver on this goal, there are four key challenges that your company must overcome. Let's take a closer look at them below:

> ✔ **Demand uncertainty and volatility.** It's no secret that the omni-channel consumer — who shops and buys through more than one channel and expects a similar

shopping experience across all channels — is making it more difficult to forecast demand these days.

Business-to-business customers have also become increasingly difficult to forecast. Markets continue to be disrupted by product innovation, the rise of private-label products, and rapidly growing emerging economies. Add to that events such as the global economic downturn, earthquakes, hurricanes, and geopolitical instability that contribute to demand volatility, and you can see why supply chain managers are concerned.

✔ **Globalization.** To capture demand in emerging economies, companies have scrambled to open channels and form joint ventures. At the same time, they have moved rapidly to develop supply capabilities from the same low-cost countries. This has led to a complex mishmash of channels downstream and supply capabilities upstream. As a result, companies are struggling to achieve end-to-end visibility, optimize production and inventory assets, and continuously synchronize their downstream channels and upstream supply. The continued globalization of supply and demand has also increased the level of risk inherent in the supply chain.

✔ **Escalating consumer expectations.** Thanks to online retailing, consumers can buy anything, anytime, anywhere. These omni-channel consumers have grown to expect a consistent and seamless shopping experience, regardless of whether they're connecting with a retailer via store, website, catalog, mobile phone, or social media (or even buying directly from the manufacturer). Companies that can't meet these expectations are losing customers as a result.

✔ **New product introductions.** In most industries, continuous product innovation is critical to success. This is particularly true in short life cycle industries such as consumer electronics, but is also important to longer life cycle industries such as automotive, industrial, and consumer packaged goods. If not handled well, product introductions can create problems.

So, how are these challenges impacting companies' day-to-day operations? Here's a quick look at some of the ramifications:

✔ The average forecasting error in the consumer packaged goods (CPG) industry is 39 percent, according to a survey conducted by Demand Planning LLC.

✔ The number of stock-keeping units in CPG has risen by more than 50 percent in the past decade, according to the Food Marketing Institute.

✔ On average, there are over 40 days of inventory on hand in retail supply chains and nearly 70 days of inventory on hand in manufacturing supply chains, according to the Global Working Capital Annual Review.

✔ At any given time, 8.3 percent of inventory is out of stock, according to a white paper by IRI.

It's easy to see why some companies are struggling to stay ahead.

Symptoms of a Broken Supply Chain

Mastering the complexity of today's environment is a challenging feat. In fact, you may be experiencing some of the following growing pains as a manufacturer:

✔ "I'm not meeting service level targets, and I don't see how I can improve."

✔ "Our plans are so inflexible that it's always a major disruption and margin hit to take advantage of a new opportunity or react to problems."

✔ "Achieving my production goal isn't helping me achieve my sales goal."

Or these if you're a retailer:

✔ "Why are my forecasts always so far off?"

✔ "Why do I keep losing customers?"

✔ "I can't react to market changes quickly enough."

Or these if you oversee the warehousing and distribution processes within your company:

✔ "Safety stock is out of control; profit is going down."

✔ "My labor costs are skyrocketing."

✔ "Why do I have long truck wait times at my warehouses?"

REMEMBER

The good news is that most of these issues can be resolved with today's advanced supply chain management processes and technology. Much value can be derived from supply chain solutions, which typically address different areas of the planning spectrum from strategic to tactical, or different functional areas such as demand, supply, or inventory. Companies define this value by measuring key supply chain metrics such as:

- ✔ Inventory turns
- ✔ Perfect order measurement
- ✔ Fill rate
- ✔ Logistics costs as a percentage of Cost of Goods Sold (COGS)
- ✔ On-time shipping rate
- ✔ Customer order cycle time

Improving these supply chain metrics is possible and well within your grasp.

Chapter 3

Delighting the Omni-Channel Consumer

*S*hopping is now fully integrated into everyone's daily lives. People shop at home, at work, and in the store. They shop on their laptops and on their tablets. They shop on phones and soon they will be able to shop on their watches.

This change in shopping habits has created a new kind of consumer: the *omni-channel consumer*. This consumer researches, buys, and interacts through more than one channel and expects a seamless brand experience, regardless of how he or she engages with the retailer. This chapter is about knowing that consumer, anticipating his or her needs, and *managing* the impacts this consumer will have on your company's bottom line.

Because this new type of consumer can — and often does — bypass traditional retail routes, some folks are terrified by what they perceive as a sea change to the retail market.

Although retail is changing, it's not unrecognizable. Brick-and-mortar stores haven't been upended. There are no zombies hiding under your bed, either. Predictions about the end of the retail store are not coming true — at least not at the pace suggested.

Understanding the New Consumer

However, this new kind of consumer presents challenges. The consumer has more control than ever, and in many ways you can begin to think of the consumer as the new boss in retail. This new boss takes many different shapes, but at the end of the day, the new boss wants what she wants — when, where, and how she wants it — at a price she considers fair. This is a drastic shift in the balance of power, which up until a few years ago was held by the brand owner or retailer. Now, the shopper is clearly in charge. As you can see in Figure 3-1, the omni-channel consumer expects to shop in many different places.

These consumers crave compelling shopping experiences that are in tune with their specific wants and align with their needs in the moment. Whether they decide to shop online, in a store, or on a smartphone or tablet, shoppers want instant access to the products, reviews, details, images, and deals that are most relevant and appealing to them, and they want options for delivery or pick up that suit their needs at the time of each transaction.
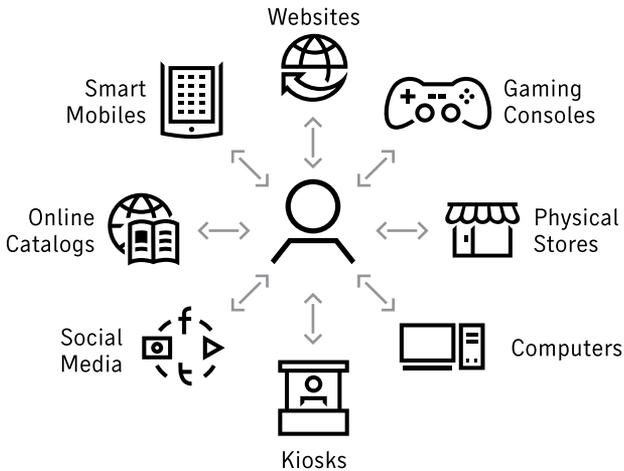
Figure 3-1: Where the omni-channel consumer shops.

Many shoppers expect retailers to use their personal information — including clicks, preferences, opinions, likes, interests, friends (and their friends' likes and interests) — to tailor offers and recommendations. In fact, shoppers are increasingly willing to trade privacy for personalized shopping experiences created by retailers.

This level of customization, however, isn't an easy adjustment for retailers to make. From the beginning of the online shopping era, the majority of retailers have approached each new touch point, network, and gadget as a potential *revenue* opportunity rather than a potential *relationship* opportunity. They've treated these expanding markets and channels as a series of loosely connected silos. And rather than integrating each new touch point into every fiber of their organization, most retailers merely bolted new touch points onto existing processes and systems, crossed their fingers, and hoped that customers would flock to the new, loosely coupled channels with their wallets open.

Not surprisingly, cobbling together businesses hasn't been successful, and establishing lasting customer loyalty has proven elusive for many retailers.

Examining the Impact of the New Consumer

The new omni-channel consumer and the accompanying expectations present four major challenges to the modern-day supply chain. They are:

- ✔ Eroding customer loyalty
- ✔ Inability to react quickly to changes in consumer demand
- ✔ Difficulty delivering products profitably
- ✔ Increasing inventory costs

While these challenges seem daunting, there are some concrete steps you can take to meet them, which we explore in more detail in the following sections.

Building customer loyalty

Customer loyalty is something that is built by consistently meeting customer expectations of product, price, promotion, and place. Building loyalty begins by meeting customer needs for products. To meet the need, retailers must first have the tools and processes in place to interpret, forecast, and react to customer sentiment.

Businesses that truly understand customer sentiment are able to showcase merchandise — both in their stores and on their websites — that is most desired by their most important customers. However, even after you align your product offerings to consumer demand (at prices they consider fair), you must also make the products available when, where, and how customers want them, and then deliver them quickly if you hope to maintain their loyalty.

Although all retail models are eventually challenged by newer models, the good news is that if you pay attention to consumer preferences and purchase patterns, you can adapt by identifying diminishing customer loyalty as soon as it begins to erode and take swift actions to fix it.

Case in point: A leading automotive parts aftermarket retailer embarked on a supply chain transformation project to address changing customer needs. By adding network capacity, along with new processes and systems, the retailer improved inventory availability and delivery times — and it increased sales. Today, the company provides daily replenishments to its stores from the new distribution center. The retailer has significantly reduced its store replenishment cycle time, resulting in fewer lost sales due to fewer stock-outs in its stores. It has also added over 20 percent more stock-keeping units to stores serviced by the new facility.

Improving response time to demand changes

Companies are competing in a marketplace that looks very different than it did even a few short years ago. Two forces have created major changes:

✔ Supply networks have become incredibly complex

✔ Increasingly demanding consumers expect drastically reduced response times

These two factors have forced companies to find more effective and profitable ways to manage the purchase, storage, distribution, and availability of merchandise.

Organizations that haven't adapted are at a disadvantage, because their costs are higher, their inventory isn't aligned to customer demand, and their customer-service standards aren't competitive. The inability to react quickly to demand changes can often be attributed to three factors: limited visibility, siloed operations, and poor collaboration. We take a closer look at how supply chain technology can address these challenges in Ch. 4.

If you wait too long to respond to the needs of the omni-channel consumer, or fail to make meaningful, timely decisions, there will be problems. When a company says, "Gee, I wonder why fewer and fewer people shop with us," it may be too late.

Delivering products profitably

Your company likely has a team of analysts who can give you profitability information. It's a good bet you can get reports on profitability by item, by product line, by store, or by channel.

Say you make widgets with $1 in supplies and $1 in labor. Perhaps you wholesale them for $4. It would be a nasty surprise to find that supply chain complications erode the $2 in gross profit that you *thought* you were earning. Unfortunately, there are countless ways for a complex supply chain serving the omni-channel consumer to leak margins. Poor procurement choices, inefficient manufacturing operations, suboptimized transportation models, inefficient warehouse operations, understaffed or overstaffed stores, and sloppy order fulfillment processes are just a few of the countless ways supply chains can erode profits.

Pay careful attention to every aspect of the entire supply chain to ensure that costs are managed and profits are guarded. Planners must account for every leg of the product

journey, including delivery to the end consumer, whether through a store or home delivery.

To support faster delivery to their customers, many traditional online retailers have invested in building more distribution centers. Although this enables them to offer competitive same-day or next-day delivery options, retailers need to ensure that these delivery options don't cut into their profitability. To learn more about how to make profitable fulfillment decisions, check out Chapter 6.

Managing inventory costs

Inventory costs will always be a challenge, but it's a very solvable challenge. Much of this book is about streamlining the entire flow through the supply chain to minimize the storage, handling, and transportation costs of inventory. In this section, we examine the added burden of profitably serving the omni-channel consumer while keeping a lid on inventory costs.

The "easy" answer (easy to say, but not always so easy to do) is to receive inventory only as needed. That reduces your inventory investment, and therefore, the space needed to store inventory. Equally "easy" is shipping quickly to the correct retailers at the right time. This keeps your warehouse fairly bare of finished-goods inventory. As a bonus, your retail outlets will be grateful for rapid fulfillment, because out-of-stocks are a bad thing.

However, both "easy" answers are actually very difficult unless you have effective forecasting capabilities that reliably tell you which products will be needed when — and now where — the customers want to buy them.

Effective inventory management requires effective forecasting and rapid decision support. The best supply chains can now stage inventory in fulfillment centers (warehouses, distribution and logistics partners, and even stores) based on the best options for fulfilling consumer demand.

The days of shipping similar quantities to every retailer or store have long passed. Today, you must carefully allocate

your inventory according to your best forecast of demand and fulfillment.

Inventory management and cost challenges don't end with fulfillment, however. As fulfillment flexibility increases, so does return complexity. Retailers must now adapt to the new challenge of managing returns from anywhere in the chain, even if the product being returned isn't carried in the store where the customer is returning the item.

In order to deliver a seamless experience, retailers must be able to service every customer transaction in every location or channel. Leading retailers are addressing this challenge by coordinating inventory, sales, and transaction data across channels — ensuring that every channel is supported with real-time access to the information required for effective inventory management post-transaction.

The digital explosion

There's been staggering growth in digital commerce over the last few years, and you can expect more in the future. Consumers can now buy via a rapidly expanding array of digital channels, and that's part of what puts the *omni* in the term omni-channel consumer.

Digital commerce essentially means that you sell, and customers buy, over the Internet. However, the specific buying tools are largely unimportant. A customer buying an item using a desktop computer looks the same to your order processing as a customer buying that same item from a laptop computer, a tablet, or a smartphone.

Digital commerce can enhance brand loyalty, even in a world where customers seem fickle. Successful retailers must focus on creating consistent customer experiences, no matter what device or channel is used for purchase.

Shoppers want to be recognized and rewarded for their omni-channel behaviors with applications that remember their preferences, remind them of their history, and make suggestions and offers that streamline the purchasing process.

Taking a Closer Look at the Store of the Future

When you consider the omni-channel consumer, it's fair to ask what the store of the future looks like. You might even ponder whether there will even *be* stores in the future.

Don't ponder too long. The store will still be a central part of many consumers' shopping activities. Consumers' need to touch and feel (and try on) products will never completely disappear. Nor will the tendency to view shopping as a social exercise. What will change, however, are expectations of the store.

In the future, you can safely anticipate that omni-channel shoppers will expect even more personalization. They will expect you to take full advantage of the personal data that they share with you in order to present them with merchandise that reflects their sense of style, tastes, health concerns, and environmental concerns. They will expect store associates to be able to tap into that information and to make the store experience an efficient, personalized, and satisfying exercise.

Store shoppers of the future will also expect even greater flexibility than they do today. They will expect to have full visibility into exactly what is in stock in their local store before they arrive, and they will expect to be able to buy from, take delivery from, or ship to every store in your chain. One hour delivery will become commonplace.

To remain relevant (and in business), your supply chain must be prepared to anticipate, align, and adapt to the ever-expanding role of the store in the omni-channel experience.

Chapter 4

The Value of Supply Chain Technology

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In This Chapter

▶ Underscoring the benefits of supply chain technology

▶ Knowing the different types of supply chain technology available

▶ Making the most of the cloud

....

A lot of value can be gained from deploying supply chain management (SCM) best practices and technology within your organization. Optimizing costs, increasing revenue, and reducing time to value are just a few of the benefits that retailers and manufacturers can expect to achieve. This chapter discusses that very topic.

The Value of Supply Chain Technology

Supply chain technology can drive both direct and indirect business impacts. In other words, it adds value in ways that are readily apparent as well as ways that are somewhat tangential, but also very valuable.

REMEMBER

You measure *direct impacts* by looking at how supply chain improvements can affect the bottom line. For instance, an optimized supply chain can *increase sales* rapidly by moving the right products from the factory to the retailer in the right quantities and quickly, with the end result being fewer out-of-stocks or overstocks.

An optimized supply chain can also *decrease expenses* rapidly by streamlining the flow of materials or subassemblies from suppliers to the factory in the right quantities. For manufacturers, the result is likely to be a reduced materials/parts inventory due to more effective use of raw materials, and a more efficient factory floor. For both retailers and manufacturers, effective forecasting and distribution should result in a smaller finished goods inventory — and that amounts to lower warehouse and transportation costs.

Measuring *indirect impacts* is more subtle than measuring direct impacts, but these impacts still have a tangible effect on the bottom line. The following sections discuss some of these benefits.

Improved access to information

Good supply chain technology integrates previously siloed information. An *information silo* occurs when different parts of your supply chain (such as individuals, software systems, or external trading partners) aren't exchanging information in a consistent, reliable, and repeatable manner. Those silos can also exist when functions and departments within a company (sales, production, distribution, and so forth) don't share information.

For example, we've seen instances where planners, buyers, and merchandisers were not sharing even the most basic information — thus creating silos that truly handicapped the department. As a result, forecasts were inaccurate, execution was flawed, and reaction times were longer than desired.

REMEMBER If the right hand doesn't know what the left hand is doing, neither hand can anticipate and meet the expectations of the omni-channel consumer. Eliminate silos and you go a long way toward solving core company challenges.

Supply chain technology brings information together and makes it accessible to all of the participants in the supply chain. *Visibility* is a term that's often used to describe your ability to see into and across your entire ecosystem. It's critical to have visibility into consumer behaviors, as well as network-wide visibility into critical supply chain activities, needs, and disruptions, both in-house and with supply chain

partners. Mobile technology improvements now allow organizations to quickly and easily see inventory status, warehouse activity, product movement, and much more — helping them to meet consumers' needs.

Companies that operate best-in-class supply chains have deep visibility into purchases, inventory, workforces, transportation networks, warehouses, and partner operations. And they put that visibility to good use to anticipate more clearly, plan more effectively, and react more efficiently.

With deep and clear supply chain visibility, your business is positioned to respond quickly to unplanned, potentially disruptive events such as production bottlenecks on the supply side and order changes on the demand side.

Improved insight

Insight is the basis for critical decision making. Supply chain technology makes it easier to analyze data, obtain insights (on factors such as consumer demand, transportation/warehouse constraints, supplier lead times, and so on), and make decisions that will have direct and indirect impacts on overall supply chain performance.

In addition, supply chain technology incorporates decision-support functionality to support faster, better decision making. This enables companies to churn data and run real-time simulations based on different scenarios, and then evaluate a range of responses. By better understanding the trade-offs involved with each scenario response, smarter decisions can be made. Supply chain performance will improve as a result.

Improved agility

Supply chain technology improves agility. When executives have improved insight because of improved access to information and simulations, it's easier for them to move fast to solve problems or to create new business opportunities. Alignment of functions and departments is just as important. You can't operate with agility if there are barriers (or silos) in your processes, systems, or organization.

TIP

You want to be able to see events from across your entire supply chain, assess their impact, and orchestrate rapid resolutions proactively.

Good supply chain technology is likely to suggest "best" actions, which you may easily change when better "best" actions present themselves. This capability is vital in today's rapidly changing business environment. Providers that can tie planning to execution excel in ensuring the entire enterprise is aligned and attuned with new decisions.

Better collaboration

Collaboration is a process where two or more people or organizations work together to achieve common goals. Successful supply chains instill processes and technology that facilitate, monitor, and measure collaboration between people, departments, and organizations to ensure the consistent flow of information, analysis, and decisions.

Collaboration is particularly important as omni-channel consumers expand their shopping expectations for choice, speed, and flexibility. Successfully navigating these expectations requires a level of agility and responsiveness that can only be achieved by organizations that function as well-oiled machines (sharing information and collaborating on actions).

To truly meet the needs of the omni-channel consumer, you should also work to build collaboration between trading partners up and down the supply chain.

REMEMBER

Synchronization across the extended network is a hallmark of highly competitive supply chains. Retailers and manufacturers that have mastered this level of collaboration consistently outperform on several key financial metrics, including better inventory turns, lower costs, and improved service levels. To learn more about collaboration, check out Chapter 8.

Improved customer loyalty

Because of the challenges posed by the omni-channel consumer, supply chain technology is more critical than ever to customer satisfaction and loyalty. Customers want to know

that the merchandise they want is in the store before they visit the store to shop and buy. Retailers want on-time, in-full shipments so they have the necessary inventory in stores when customers come to buy, or increasingly, to fulfill online orders from stores. The result is an improved customer experience and customer loyalty. This isn't possible without the visibility, accuracy, and agility of supply chain technology.

A brief history of SCM

According to *Supply Chain Digest*, the term SCM was first coined in 1982 by Keith Oliver of Booz Allen Hamilton, a global strategy and technology consulting firm. The concepts and technological foundation of SCM, however, started long before that.

Perhaps the best place to start is with electronic data interchange, also known as EDI, a term used to describe computer-to-computer exchange of business documents in a standard electronic format between business partners. As EDI gained acceptance, transactions between companies became automated, standardized, and less error-prone — and of course, quicker. Enterprise resource planning (ERP) offerings were soon developed to support system-wide connections. ERP systems essentially serve as the electronic "backbone" of an organization, connecting key business functions and enabling data sharing. Today, companies still rely on ERP systems as the dominant process for transferring data within an organization. While ERP systems continue to improve, they're still generally expensive and challenging to implement, and difficult to extract actionable information from the data.

Significant advancements in personal computing and other technologies later spurred the development of more user-friendly technology. This provided organizations with the capabilities to gather, process, organize, analyze, and react to point-of-sale customer data in a significantly faster and more effective manner. All of a sudden, companies had access to information that enabled them to take a more prescriptive approach, adjusting their supply chain to meet changing customer needs.

Of course, as the Internet became ubiquitous, the ability to network and collaborate has increased dramatically, allowing companies of all sizes to participate in the global economy. As a result of these technology advancements, companies have increased collaboration and visibility across all points of the supply chain, providing opportunities for significant improvements to the bottom line.

Less wasted time

Time has two components: task duration and timeliness of action. Lost time can't be recovered. It's generally accepted that a business is more efficient when it saves time (for example, on the factory floor, in the store, or in the warehouse) or when it acts fast. Time also translates into savings because the shorter the cash-to-cash cycle, the less money is tied up in materials and inventory. Through automated business processes and advanced analytics, supply chain technology delivers time-saving opportunities throughout the supply chain.

The Difference between Supply Chain and ERP Technology

Sometimes companies consider deploying or extending an enterprise resource planning (ERP) system to address supply chain challenges. Although an ERP package can do a lot for a company, it doesn't have the breadth or depth of capabilities to optimize your supply chain planning and execution processes for maximum profit.

The classic ERP system is a business management software system. It's a very broad, general-purpose system that is primarily focused on managing transactional and financial data.

ERP providers have been pushing into the SCM space for years, but continue to be several steps behind best-of-breed vendors in both functionality and expertise. Although ERP systems can bring significant business value, the systems don't focus specifically on SCM. Instead, they provide modular offerings that support financial, distribution, and production systems. Without a background rooted in SCM best practices, ERP providers don't offer the advanced capabilities required in today's much more complex global supply chains. It's also no secret that the omni-channel consumer has disrupted standard business practices. ERP systems simply don't have the level of advanced capabilities, focus, or flexibility that specialized SCM providers use to address the complex omni-channel fulfillment challenges that today's retailers and manufacturers are now facing.

Making the Most of the Cloud

You have likely heard of or already use the cloud as a deployment method. Cloud deployment shifts the burden of installing, operating, and maintaining software to the vendor. The advantages are fairly straightforward: Faster implementations, secure off-site data storage, reduced expenditure through shared infrastructure costs, and streamlined maintenance are just a few of the benefits.

Additionally, for many businesses, being able to leverage cloud deployments as an operating expense (instead of planning for a capital expense) can yield tremendous savings. By taking advantage of a shorter time to deployment, companies can realize value more quickly through greater business agility and measureable results.

Cloud deployment offers a lower risk profile than traditional on-site implementations by injecting speed and accountability into the implementation process. Operating via the cloud enables you to:

✔ Get up and running quicker, allowing for faster time to value

✔ Provide more reliable access to your users, customers, and trading partners

✔ Focus on your business initiatives rather than IT support

✔ More easily upgrade or onboard new capabilities

✔ Leverage business and technical expertise and bandwidth without adding head count

✔ Streamline expenditures and lower overall total cost of ownership.

The ideal cloud vendor for your business should have in-depth solution expertise and be extremely knowledgeable of best practices for your industry. With the right skills, knowledge, and experience, a cloud vendor can help you synchronize your supply chain technology with your business processes, enhance the knowledge of your staff, and drive continual improvement. The vendor should be able to leverage its experience to drive operational improvements and additional opportunities for efficiency, cost savings, and

growth, as well as help you develop key performance indicators to gauge your success. Of course, the cloud isn't the only way to deploy supply chain technology, but overall it's the most efficient and cost-effective way. You will have to decide what is best for your business.

Chapter 5

The Key to Achieving Supply Chain Excellence in Manufacturing

. . . .

In This Chapter

▶ Examining the manufacturing planning process

▶ Seeing supply chain segmentation at work

▶ Looking at supply chain science

. . . .

*A*chieving supply chain excellence in manufacturing isn't as simple as it seems. Recent industry changes — such as globalization, demand volatility, variability in supply, and internal misalignment — make it difficult for manufacturers to deliver on the full value of their supply chains.

Thanks to globalization, today's manufacturing network, like the rest of the supply chain, has become more complex and geographically disparate. At the same time, there has been a major shift in the way end-consumers behave and buy products. The omni-channel consumer, as we discuss in earlier chapters, has more control over the buying experience, with more ways to purchase than ever before, and more options from competing retailers and manufacturers. This has all resulted in increasing demand volatility — a major concern for 80 percent of companies, according to the 2014 SCM World Chief Supply Chain Officer Report.

On the supply side, the complexity of supplier networks, manufacturing plants, and distribution centers has also increased.

As you can imagine, this complexity makes it very difficult for manufacturers to respond quickly to changes or disruptions. In fact, the same report mentioned earlier discovered that 90 percent of companies rank "lack of speed and agility" as one of their topmost supply chain concerns.

REMEMBER

Although volatility and disruptions are hard enough to manage, most organizations are also dealing with internal misalignment. Sales, marketing, engineering, operations, and finance departments all pursue separate goals that are, at times, at odds with one another. For example, a sales leader's needs don't always align to production schedules or inventory best practices. So it's difficult to get all parties to agree and act on what's best for the business as a whole. This, of course, has very real and negative consequences. According to a study from IBM, three out of four companies say "lack of internal alignment" is a barrier to serving their customers. This barrier isn't just limited to internal stakeholders; lack of alignment with external trading partners can also create problems.

When manufacturers can't get stakeholders to quickly agree and act on the right path forward, and when supply network complexity makes it difficult to make changes on-the-fly, it simply takes too long to respond to changing consumer demands. Because demand is only growing more volatile and consumers have so many competitive options, this can really hurt sales. Even small missteps can negatively impact an organization's margins.

That's why leading manufacturers are taking a different approach to managing their supply chain. This chapter shows you the path to their success.

Establishing a Manufacturing Planning Process

Before a manufacturer can embark on its supply chain journey, it must first have a plan. The most successful manufacturers have adopted an integrated manufacturing planning process. This process includes the following:

✔ **Developing forecasts** for the products, product variations, and quantities that need to be produced. While this may seem simple, it can actually be a highly complicated process, depending on how many sales channels manufacturers have and the variability of their product offerings and customer base.

✔ **Developing a supply plan** involves determining how products are going to be made in order to meet demand on time. Of course, to do this, companies need to understand what needs to be produced and when, as well as have visibility into existing inventory, their suppliers' ability to provide materials, parts, components, or subassemblies (and the associated costs), and the availability (and costs) of assets like trained labor, factories, equipment, and energy. A supply plan can be very complex depending on the number of products produced, the number of production facilities, the availability of materials, the number of suppliers and distribution, and so forth.

✔ **Developing detailed production plans** that determine how facilities, equipment, labor, and materials can come together to produce products at the lowest cost in the least amount of time. This process can be very complicated because many products require hundreds of steps. A delay at any one step may hold up production and delivery. Factors like equipment maintenance, working with perishable goods, and labor regulations can add further complications.

✔ **Monitoring plans and responding to change.** Often, plans are made 18 to 24 months in advance of when goods are needed. Many complications can arise during this time frame such as fluctuations in demand, availability of assets, changes in financial position, and changes with suppliers. One way to limit the ramifications of these changes is to reconcile demand plans and supply plans on an ongoing basis. This is commonly called *sales and operations planning* (S&OP).

The S&OP process reviews current and anticipated states in supply and demand to ensure that the supply produced is still targeted to fulfill the expected demand. However, changes are inevitable, so manufacturers need to have a good understanding of the options they can employ, as well as how those options will impact their customer service levels and profitability.

✔ **Allocating goods to fulfill orders.** Although it may sound simple, production delays, shortfalls in production, changes in orders, or geographic considerations can also complicate the order fulfillment process.

A New Path Forward for Manufacturers

Not all consumers, channels, markets, and products are the same. To address changing needs in specific, meaningful ways, manufacturers need to move away from the one-size-fits-all approach to planning. That means segmenting consumers, markets, and products and applying the right supply chain approach to the right segment. Organizations must anticipate their customer needs across each segment, anticipate the risks in demand and supply, and then structure their supply chain to serve each segment profitably. For more detail on how supply chain segmentation works, check out the next section.

Manufacturers also need to align their internal departments — sales, marketing, engineering, operations, and finance — around the common goal of customer service. To do this, companies must eliminate the emotional and gut-level decision making that too often divides internal stakeholders and results in the wrong action — or worse, no action. Instead, fact-based analysis and what-if scenario modeling can be used to objectively evaluate trade-offs and choose the fastest, most profitable option to meet customers' needs. Then, manufacturers need to be able to execute that decision effectively through their fulfillment network.

Finally, companies need to optimize their supply chain to respond quickly to the specific needs of each customer or market segment. Case in point: A global leader of state-of-the-art flash storage solutions yielded substantial benefits after increasing its supply chain flexibility and responsiveness to consumer demand. Through a carefully planned manufacturing and inventory postponement strategy, the company significantly shortened its frozen production plan and scaled its supply chain to ship nearly two million units daily. This enabled the company to improve its safety stock and on-time delivery performance metrics by more than 10 percent, and deliver on the original promise date more than 95 percent of

the time. These efforts have earned the company multiple top supplier awards from retailers and OEM partners alike.

When manufacturers streamline their supply chain in this way and manage the complexity within their business, they can improve their response time, drive more sales by getting products to consumers the way they want, and maximize profits while minimizing the negative impacts of volatility. The right supply chain technology can provide manufacturers with:

- ✔ End-to-end visibility into orders and changing demand as well as supply plans, inventory, and operations
- ✔ Alerts to issues that compromise service levels, profitability, or productivity
- ✔ Analytical capabilities to assess situations, review options, understand trade-offs, and make effective decisions
- ✔ The capability to react to issues or opportunities quickly across the enterprise.

A Look at Supply Chain Segmentation at Work

Supply chain segmentation represents one of the most fundamental advancements in supply chain thinking. Manufacturers must cater to a wide range of customer needs as they serve increasingly diverse markets across dynamic global economies. Understanding these needs and crafting attractive value propositions to serve them accordingly is becoming increasingly critical for profitable growth and business retention.

REMEMBER

As discussed earlier, a one-size-fits-all supply chain strategy can't adequately or profitably achieve this goal. Instead, companies must segment their supply chain operations to balance the cost to serve with the value to the business for each segment.

A supply chain segment can be defined as a grouping of one or more categories (such as customers, products, channels, or regions) based on their value to the organization. That value may be defined by volume, revenue, profit margin, strategic importance, or any combination of these factors.

So how exactly does supply chain segmentation work? When pursuing market share growth for certain product-geography-channel combinations, you may need to adopt one supply chain strategy: aggressive and dynamic pricing, high product availability, and superior lead times. Yet, when looking to retain market share for other product-geography-channel combinations, your supply chain strategy may be different: fixed pricing and competitive lead times.

When customers, products, geographies, or channels can be segmented by need, manufacturers can enhance service levels and profit by defining a specific supply chain approach for each segment. This would include demand planning, supply planning, production, order fulfillment, and distribution.

At the Root of It All: Supply Chain Science

Although all supply chain technology seeks to optimize the supply chain to some degree, it's the supply chain science that's built into the technology that is necessary to uncover areas of opportunity (that you can't even see) for the business. This level of optimization can drive efficiencies and cost reductions throughout all areas of your organization.

Take a look at how inventory optimization would work. Imagine you currently have 40,000 units of a particular product available in warehouses all around the world. As orders come in that exceed on-hand inventory, optimization algorithms can be leveraged to determine how to orchestrate the fulfillment of orders in such a way that reduces costs, time, labor, and so on. This requires full visibility into existing inventory, orders, and service levels to determine how inventory should be distributed based on its location and destination, along with the anticipated flow of goods and your incoming capacity of finished goods.

REMEMBER

Although this example centers on inventory, this type of optimization can be applied to all aspects of the supply chain: order cycle times, transportation processes, warehouse processes, and more. It's this level of science that drives supply chain excellence.

Chapter 6

Focusing on Profitable Fulfillment

In This Chapter

▶ Examining the components of effective fulfillment

▶ Taking a look at fulfillment decision making

▶ Considering warehouse and transportation constraints

*I*f you're a football coach, you don't just send your players out onto the field and wait until the ball is snapped to decide on a plan for them. It takes many hours of studying the other team and planning which players you want on the field and what they will do in each situation that comes up.

Fulfillment is the same way. You don't want to wait until the customer places the order to decide how you will fulfill it, whether that is from a distribution center (DC), a store, or a supplier. You'll want to preposition inventory and employees based on your study of the buying habits of your customer base, otherwise known as *demand planning and replenishment*. You also need a realistic understanding of your capabilities and limitations. And you'll want to plan how you will fulfill each type of order profitably when it comes in by setting up the rules in your order management system. That way, once the order is placed you'll be well prepared to execute it in the most effective and profitable way possible.

Of course, proper planning is only half of the game. Once the order is placed, you want to execute those plans flawlessly. That's why supply chain planning and supply chain execution processes need to be tightly integrated.

REMEMBER Supply chain planning is the process of predicting future requirements to balance supply and demand, whereas supply chain execution is the flow of order fulfillment, warehouse, and transportation processes related to delivery.

The planning systems need to know the constraints on inventory, on the availability and skills of the workforce in the DCs and the stores, and the constraints on transportation in order to create fulfillment plans that are actually executable at a reasonable cost. Likewise, execution systems must know what the fulfillment and order management plans are to ensure the plans can be executed correctly and profitably. The capability to take the forecast and truly be able to plan labor, as well as plan space in the warehouse and store, is critical to a company's ability to increase throughput in its supply chain.

The Benefits of Intelligent Fulfillment Decision Making

It doesn't matter whether you're a top-tier supplier or a small retailer. How you handle your fulfillment decisions within your organization will have a dramatic impact on your company's financial targets.

REMEMBER Leading manufacturers and retailers have come to understand that optimized supply chains are a strategic weapon in driving top-line and bottom-line growth. Two powerful ways that intelligent fulfillment technology can help your company include:

✔ **Balancing costs and service:** When evaluating any fulfillment decision, it's essential to balance the impact on cost and the impact on service. For instance, you may consider implementing a supply chain strategy that will reduce your inventory significantly. Although reduced inventory definitely frees up warehouse space and working capital, too little inventory can negatively impact your customer service levels. Intelligent fulfillment technology can help ensure that you're achieving the right balance between cost and service.

✔ **Increasing profits:** Intelligent fulfillment technology supports optimized decision making across supply chain planning *and* execution functions. As mentioned

earlier, this often leads to reduced inventory, labor, and transportation costs, not to mention improvements in on-time, in-full customer deliveries. More profitable operations and greater competitive advantage are often the result.

Integrating Planning and Execution

Supply chain professionals have said for years that integrated planning and execution is the Holy Grail for market responsiveness and operational efficiency. Before you can integrate, you have to first understand what the customer wants so you can make appropriate plans to provide for those needs and then execute on those plans. It's all one continuum. Each step in the process has to know the capabilities and constraints of the other steps or you end up with plans that can't be executed — and a disappointed customer.

REMEMBER

So what types of fulfillment options are customers expecting these days? It turns out quite a lot. Omni-channel consumers want the option to:

✔ Buy online and:

- • Pick the product up in store (also known as click and collect).

- • Have the product delivered to a designated location (with same-day and one-hour delivery options).

- • Return the product to the store if not satisfied with the purchase.

✔ Buy in store and:

- • Have the product shipped to a designated location.

- • Have the product shipped from a second store to a designated location (this typically occurs if the first location is out of stock).

✔ Ship the product directly from the manufacturer.

✔ Sign up for a subscription program to receive the product on a regular basis.

The good news is that this wide array of fulfillment options can be managed with two methods:

- ✔ **Distributed order management (DOM)** delivers the ultimate omni-channel customer experience, allowing shoppers to buy anywhere, fulfill anywhere, and return anywhere. A business can deliver seamless cross-channel interactions, with a complete view of customer orders and inventory availability across all channels. It also supports order sourcing, aggregation, and prioritization, and optimizes the flow of goods through the distribution network. DOM technology evaluates fulfillment options to determine the optimal, most profitable strategy for sourcing and delivery to satisfy the customer's desires.

- ✔ **In-store picking (ISP)** enables retailers to accurately and efficiently pick e-commerce orders from within a store. Orders are allocated and clustered to make efficient use of both store space and time. Employees are sent to the shop floor to pick at a time that will cause the least amount of disruption to shoppers in the store, but meets the promised delivery or pick-up time frame. ISP solutions should also provide different substitution strategies depending on the retailer's brand promise.

If you've read other chapters in this book, you no doubt know that not all things happen according to plan. Inventory gets damaged during picking, a rush order is dropped late in the day, a carrier fails to arrive on time — forcing managers to make ad-hoc manual adjustments to plans. Companies need the capability to quickly replan in order to drive optimal fulfillment decisions in this fast-changing environment.

Considering Constraints

Many times the planning process doesn't have visibility into upstream and downstream order and inventory information, and therefore is unable to quickly and accurately replan when unexpected events or disruptions occur, leaving plans both out-of-date and unexecutable. This leads to overstocks, out-of-stocks, and dissatisfied customers.

What is needed is a constraint-aware planning system that creates warehouse and transportation plans that can actually be executed. Visibility into network-wide inventory is critical

in order to support the replanning process when exceptions or disruptions occur during the execution cycle.

To get a better idea of how this works, the following sections examine some common warehouse and transportation constraints.

Constraints are limitations within a company's organizational structure, supply chain network, or processes. Constraints must be considered in order to create accurate, executable plans.

Understanding warehouse constraints

Warehouse constraints are limitations in your company's warehouse capabilities at any given point in time. For instance, constraints could include the number of employees working in the warehouse when an order is to be processed, the current capacity in the warehouse to store items, the number of docks that can accept incoming trucks, and so forth.

By leveraging constraint-aware warehouse management technology, you can:

- ✓ Create labor and inventory plans based on real-world execution constraints.
- ✓ Rapidly and intelligently react to real-time events with iterative planning and execution.
- ✓ Reduce inventory, labor, and warehouse costs.
- ✓ Collaborate with suppliers on activities related to inbound shipments.

Understanding transportation constraints

Your transportation network can be thwarted by constraints, too. Aside from the congested dock door or limited labor constraints, maybe your core carriers don't have enough capacity to handle shipments of a large order for a key customer, resulting in expediting charges, or you have to use more expensive noncore carriers. Although you could decide to "eat" the extra

charges, that hurts profitability and doesn't provide a long-term solution to your fulfillment challenges.

At the risk of sounding like a broken record, many benefits can be derived from using a constraint-aware transportation management technology. You can:

- ✔ Create detailed work plans, based on shipment requirements, to manage your private fleet (if you have one).
- ✔ Negotiate the lowest contract rates for each mode of transportation (if you use common carriers).
- ✔ Decide when it makes sense to use common carriers versus your private fleet.
- ✔ Synchronize transportation planning and execution with warehouse constraints.
- ✔ Optimize the global transportation network by modeling multiple scenarios related to lane structure, routings, cross-docks or hubs, pick-up and delivery windows, and so on.
- ✔ Combine route optimization with load building to maximize capacity utilization (and avoid sending out half-empty containers or trailers).

REMEMBER Making intelligent fulfillment decisions requires thorough, constraint-aware planning, along with an understanding of the limitations of the warehouse, labor, equipment, and transportation, so those plans can actually be executed — in the most profitable manner possible.

Chapter 7

The Key to Achieving Success in Retail

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In This Chapter

▶ Gaining greater wallet share

▶ Taking a look at the next-generation retail operating model

▶ Making the most of the modern store

- -

Despite endless predictions of the store's demise, the store has not only survived, but thrived in the omni-channel marketplace. In many ways, the store has reemerged as the center of the shopping experience and at the same time a strategic node for fulfilling customer orders.

Amid the continuing popularity of in-store shopping, however, delivering a consistent user experience has never been more challenging. The role of the store in the omni-channel path to purchase continues to expand while payrolls shrink, product selection expands, and shoppers are often better informed about products and competitive prices than most sales associates.

Clearly, the road to delivering a consistent customer experience travels through the store. Leading retailers have invested in the store to ensure that every interaction — whether a selling, service, showroom, fulfillment, or returns interaction — meets shoppers' expectations.

Better Experiences Lead to Greater Wallet Share

Wallet share is a term used to describe the percentage of money a customer has available for spending in a given product or store category that a retailer earns. For most retailers, an ongoing concern is capturing higher wallet share, and the path to gaining share begins with understanding what consumers truly want and delivering assortments and experiences that match their desires.

REMEMBER

Predicting demand at the local level is a difficult task that few retailers have mastered. The good news is, however, that as technology advances, connectivity expands, and shopping journeys evolve, so do the opportunities you have as a retailer to better understand your customers.

As discussed more thoroughly in Chapter 5, retail planners have access to more demand signals from more shoppers than ever before. Retailers, although initially skeptical of Big Data as yet another technology buzzword, have recently embraced the power of data to help them better incorporate the voice of the customer into their demand-planning processes. Customer data can now be pulled from a variety of sources: point of sale, loyalty card information, website activity, social media interactions, and more.

As a result, many are beginning to fill their stores with localized merchandise assortments that are highly desired by the customers that frequently shop in those particular stores. Of course, maintaining that share of wallet requires that retailers must also streamline the flow of goods to the store so that the products arrive when and where customers want to buy them.

Case in point: A multi-national grocer, with multiple store formats, leveraged technology to revamp its store planning and replenishment processes. By centralizing its inventory management and replenishment functions, the retailer has reaped substantial results. The company improved forecast accuracy by 10-15 percent, reduced inventory by 20 percent, and improved in-stock availability by 5-15 percent — creating a better shopping experience for its customers.

Yet, many traditional retail supply chain practices and philosophies — where the supply chain is viewed primarily

as a cost center — have become roadblocks to success. As a result, most retail organizations are incapable of responding and adapting to the rapidly changing dynamics and disruptions that have completely overwhelmed today's global supply chains.

Introducing the Next-Generation Retail Operating Model

Retailers that reorient their strategies around understanding their customers will enhance their ability to function in today's environment. This will require key changes in some of the most fundamental aspects of the retail business model, impacting how retailers capture and interpret demand signals, how they develop merchandise plans, the way they execute daily store operations, and how they manage product delivery.

These changes are exemplified in the five key tenets of the next-generation retail operating model:

- ✔ **Unified customer engagement:** Customers expect to receive personalized communications based on their individual interactions with a retailer. Insight about a customer or customer segment can be gathered from their online activities — such as what items were purchased, what delivery option is preferred, what products were "liked," and so on. That data can then be consolidated and analyzed to help guide the retailer's future behavior and communication with that customer.

  Unified engagement leads to stronger and more profitable customer relationships. For example, a customer who purchases a weed trimmer shouldn't receive future emails advertising weed trimmers. Yet, the retailer that automatically contacts that customer with a mobile coupon for other lawn accessories is using the knowledge it is gathering to make fast, and profitable, sales.

- ✔ **Adaptive, consumer-centric offers:** As previously discussed, today's path to purchase often involves more than one channel. Hence, retailers need to have a better understanding of how customers search across channels

as well as the type of products they search for in order to customize each assortment. For example, a shopper may search for shoes online, but still want to try them on in the store. The retailer that can't deliver on that shopper's expectation of a seamless shopping experience — from online search to physical store purchase — will lose the sale.

Retailers need to leverage the customer interaction insights mentioned earlier to start making assortment decisions based on customer preferences. Not only do assortment planners need access to those insights, but they must also have the power to adjust assortments to reflect delivery tendencies in order to make it easy for customers to get the product in the way that they choose.

✔ **Flexible, real-time, responsive supply chain:** Many organizations still fulfill products using a set of static rules: a certain product from a certain vendor goes through a specific distribution center and then is sent to a specific set of stores. Yet, in order to offer comprehensive assortments to consumers regardless of channel, retailers need the back-end means to send the product anywhere in the supply chain in the most cost-effective manner.

Although this sounds simple, the real challenge is in making the economics behind it work in the retailer's favor. This could require some investment in retail supply chain planning and execution technology and processes that support a much greater level of supply chain sophistication and agility.

✔ **Profitable distributed order management:** Do everything you can to meet customers' delivery preferences; however, profit rules must be established to ensure that you maintain profitability while doing so. Obviously, a retailer's profitability varies by ordering method, product type, and delivery method. For instance, a customer buying a piece of furniture by phone and scheduling a home delivery represents different profit potential than an in-store purchase of a flat screen television.

Although most retailers today offer all customers the same delivery options, this practice may need to be reexamined. It could be that only premier and profitable customers should be offered a greater variety of choices, and less loyal, less profitable customers must choose

between delivery options that benefit the business. The more capabilities that retailers can build into their intelligence gathering and order-management decision making, the easier it is for them to establish granular rule sets based on consumer segments and specific customer behavior patterns.

✔ **Enterprise-wide demand shaping and forecasting:** As consumption points increase across different channels, it becomes harder for retail organizations to determine where inventory should sit across the supply chain. Most retail organizations don't currently have the visibility and capabilities required to analyze demand signals across all touch points and produce a single forecast. However, if an organization truly builds the proper amount of data analysis and sophistication into its processes, it can actually start to take those insights from the previous tenets and start anticipating and shaping demand.

This is especially important because there are many customer behaviors that aren't necessarily intuitive. The beer-and-diapers scenario, where a customer picks up a case of beer at the store while also purchasing diapers, is an example of this kind of counterintuitive purchasing behavior. Retailers that are able to identify associations like this and then leverage that knowledge in how they assort, merchandise, and fulfill across channels will be able to more profitably predict and influence their customers' buying patterns.

The Evolving Role of the Store

The store is still at the heart of retail (and, as discussed, will still be tomorrow). Following are some concepts that modern retailers must take into account if they hope to meet the demands of the omni-channel shopper:

✔ **Smart scheduling.** Payroll budgets in retail will always be extremely tight. Delivering exceptional experiences in the store requires that your staff schedules be very closely aligned to customer shopping patterns. You need the right number of people to be available, with the right skills, to service customers when peak shopping periods occur, and new schedules must account for customer transactions that originate outside the store as well.

✔ **Effective task management.** Simply having the right people with the right skills in place at the right time isn't enough to ensure a profitable experience. To succeed today, with the store associate now expected to fulfill so many diverse tasks during the course of a shift, you must carefully manage the assignment, execution, and escalation of each task. Careful monitoring can help ensure that selling takes priority over everything, and yet all other nonselling tasks also get executed as quickly and efficiently as possible.

✔ **Store fulfillment.** As more and more customers request that orders placed *outside* the store (online or mobile) be picked up or shipped from *inside* the store, you must be prepared to manage the picking and shipping of those orders carefully (a process referred to as *in-store picking*).

Picking orders from the store shelves while the store is open can be a tricky proposition, because customers will be shopping the aisles and placing other demands on the associates while they are picking. Staging orders can also be complicated, because some items may require refrigeration or special handling, and those orders must be able to be consolidated quickly and effectively when the customer arrives for pick up.

Be sure to plan carefully for these challenges before offering customers the option to buy online and pick up (or ship from) the store.

✔ **Showrooming.** *Showrooming* describes the situation that occurs when a customer browses inside the store and then checks his or her mobile phone or tablet to see where an item can be bought cheaper. The smart retailer takes showrooming into account, offering exceptional service from informed and empowered sales associates, no out-of-stocks, and competitive pricing.

✔ **The endless aisle.** For products that are no longer in stock or not currently sold in the store, the "endless aisle" concept is one that retailers can leverage to save the sale. By using in-store kiosks or their mobile phones, customers can purchase the out-of-stock product from inside the store and have it delivered to their home.

REMEMBER

As you can see, the store remains a very important element of the path to purchase. To gain a larger share of the omni-channel consumer's wallet, retailers must redefine the role of the store in their retail operating model.

Chapter 8

The Benefits of Collaboration

*T*here are two areas in particular where collaboration between retailers and manufacturers can yield significant results:

✔ Collaboration at the *inventory* level, ensuring the right inventory will be available to fulfill demand.

✔ Collaboration at the *sales* level, maximizing margin and sales growth at the category level.

REMEMBER

Category is a term used to describe a range of similar or related products that are grouped together.

To get a better idea of how this type of collaboration plays out, let's consider the following example. A leading consumer goods manufacturer decides to co-fund a promotion with one of its largest retailers. To guarantee that this promotion is a success, collaboration needs to occur at both levels to ensure that the projected financial target is achieved. The projected demand increase will need to be reflected in the manufacturer's sales forecast, so that the manufacturer can adjust inventory allocations or possibly increase capacity to ensure enough material is on hand to meet demand. Likewise, category managers may need to adjust their *planograms* (visual representations) to

allocate more space for the planned promotional items. We look more closely at how this can be achieved in this chapter.

Creating Collaborative Success at the Inventory Level

Despite decades of collaborative initiatives and technology advancements, profit-draining out-of-stock conditions remain an issue. Days of inventory continue to rise compared to previous years, and sales-to-inventory ratios have grown steadily worse. Forecast errors continue to average at an unacceptable rate of 40-60 percent.

Why is this occurring? Clearly, retailers spend a significant amount of time and effort on forecasting activities, as do manufacturers and wholesalers. Yet, today's forecasting is happening everywhere but where it really counts — at the point of purchase. The result of this approach is that forecast performance has actually worsened over time.

It turns out that manufacturers and retailers are still operating in information silos — uncertain how much product to order or ship, and pointing fingers at each other when supply inevitably doesn't match demand. The lack of scalability in older planning systems has also added to the problem, making it difficult to track the impact of pricing, promotions, and events at an item level within each store.

The way traditional retail and manufacturing supply chains operate has also contributed to the problem. Each participant in the process typically creates its own forecast based on what it has sold or shipped previously. For instance, the retail store forecasts demand based on what it has sold in the past. And the retail distribution center (DC) forecasts demand based on what it shipped to stores in the past. The manufacturer's DC forecast is based on its shipments to retail DCs, and so forth up the chain.

The end result is that an inherent forecast error occurs at each level of the supply chain. This process creates a *bullwhip effect* (also known as the Forrester effect) that leads to greater and greater disparity between actual demand and forecasted demand, causing the supply chain to become out of sync with what is needed when the sale takes place. To see how the

bullwhip effect works, take a look at Figure 8-1. The squiggly line represents the amount of inventory a retailer orders to meet consumer demand. The distributor, in turn, orders a little more inventory than the retailer to compensate for any forecasting error and ensure that it has enough inventory to meet the retailer's needs. The manufacturer also orders more inventory to compensate for any forecasting error and ensure that it has enough inventory to meet the distributor's needs. As a result, much more inventory ends up in the supply chain than is necessary.

What is the answer to this age-old problem of forecast error and uncertain demand? It's to forecast once and at the level where demand is most accurate: the point of consumption.

New collaborative forecasting and planning technology, also known as *flowcasting*, is available that enables trading partners — for the first time ever — to work together from a single, item-level forecast and plan that is executed jointly by both partners to their mutual benefit.

As changes inevitably occur, a revised forecast ripples up through the supply chain through recalculation of the demand plan at each level. This ensures each supply chain participant can plan and execute its business based on the most current and accurate data possible. The ultimate objective is to synchronize store-level demand, assortment, and


The Bullwhip Effect

Quantity Ordered

Time — Retailer

Time — Distributor
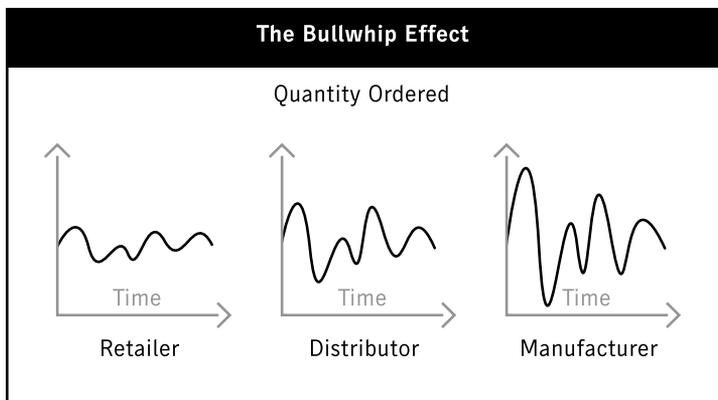
Time — Manufacturer

Figure 8-1: An example of the bullwhip effect.

inventory across the supply chain, enabling suppliers to track their performance at retail (see Figure 8-2).

Flowcasting technology enables retailers and manufacturers to:

- ✔ Calculate demand based on the most recent data at each successive node of the supply chain
- ✔ Significantly reduce demand uncertainty and the bullwhip effect
- ✔ Run what-if simulations to determine how market conditions and business strategies will affect all trading partners
- ✔ Gain complete visibility into joint supply chain operations to identify — and act on — continuous improvement opportunities
- ✔ Uncover additional opportunities for shared value.

With this new technology, you can calculate demand across execution, tactical, and strategic time frames and across channels, giving all supply chain participants a single version of the truth on which to build their plans. But even the best plans can't remain static. Companies adopt new strategies; disruptions occur. Your operations must be agile in order to adjust to these changes.

The success of the single forecast demand plan is possible when retailers and manufacturers work together. The result is tremendous efficiency in the supply chain, reducing inventory levels and costs, increasing visibility and agility, and removing uncertainties that previously led to mismatches between supply and demand.

Manufacturing Plant   Real-Time Collaboration   Retail Store

Connecting Demand Signal to Point of Sale

Manufacturing DC   Retail DC
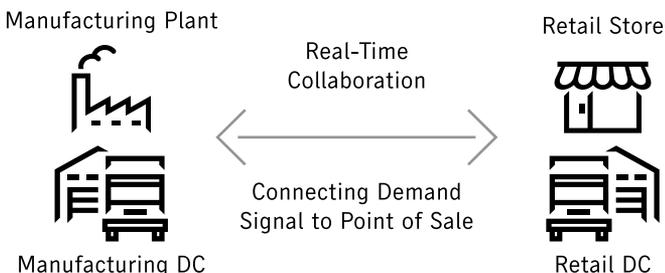
Figure 8-2: An example of flowcasting.

Creating Collaborative Success at the Sales Level

Every retailer and supplier envisions that "perfect shelf" that drives sales success. Yet, a perfect shelf is really just a fantasy. Any shopper can walk into any store at any time and expect to see the perfect mix of products, quantities, and prices that are "right" for *that* shopper. But when you consider the number of customers you serve multiplied by the number of products, locations, and other factors, the challenge becomes immense.

That's where category management comes in. *Category management* is the practice of focusing on a single category of goods as a business unit to improve performance. It is driven by customer insights (along with sales history, forecasts, and market data) to fuel decisions about what product assortments to offer — and how they should be presented — in each store.

Retailers often collaborate with manufacturers to ensure the performance and growth of their product categories. Manufacturers are equally interested in this type of collaboration, because they have a vested interest in ensuring the retailer is offering their products a prime presentation.

Because customer behavior is different at every store, the assortment of goods available at a given location may also be different. Retailers create *sales plans* to make sure that the most desired goods are available in the right stores.

Sales plans are created at both the store level and category level. Consumer insights, physical constraints, and merchandising rules drive much of this process. Other factors such as days of supply or availability of regional products can also influence plans and decisions.

Sales plans should be consistent with expected consumer behavior — and ultimately supported by effective supply chain management. By projecting what is expected to sell at a given store, categories, products, and quantities are selected. The space allocated to a category and product in a store is tied to both its revenue and margin goals. Categories must be allocated enough selling space on the sales floor to make

products available for customers (which supports the sales goals). Within that selling space, the placement of individual products is also determined by data.

TIP

The retailer can use a planogram as an easy way to stock store shelves. In grocery stores, these visual diagrams are used to map out the product arrangement for everything from frozen food items to haircare products to dog treats and accessories. Advanced technology is available that automates the process, producing thousands of consumer-centric planograms in less than an hour (a feat which would otherwise take weeks to accomplish manually). Store associates can now access planograms on mobile devices to ensure stores are stocked correctly.

Making sure plans are followed at the store level is critical, because no amount of planning can make up for failure at the shelf. (Remember, that's where that point of consumption really happens). Plans must be communicated to store locations, and labor will need to be assigned. Mobility and task management are effective in ensuring store execution.

REMEMBER

Collaboration among retailers and manufacturers is a key part of the category management process. Larger retailers often rely on manufacturers' deep category-level insights to drive growth. In fact, manufacturers that can demonstrate improved category performance are often asked to serve as category captains, where they produce assortment and space plans on behalf of the retailer.

Through data aggregation, sophisticated business applications, and automation, retailers have been able to improve performance by scaling plans to local levels. This results in more productive and accurate planning, as well as lower inventory levels.

Case in point: By using advanced technology to automate its planogram generation process, a leading food manufacturer has been able to deliver store-level planograms to the more than 15,000 retail stores that sell its popular snack products. The process enabled the company to dramatically increase efficiency, improve on-shelf availability of its products, and grow sales by 2-4 percentage points.

Leaders in category management rely on technology to:

✔ Gather and aggregate consumer insight data from a variety of sources and produce detailed information used to make category management decisions.

✔ Maintain comprehensive data on stores, products, and fixtures, including photographic images of products (so that products appear in the planograms correctly, based on dimensions and packaging).

✔ Allocate sales floor space to categories, taking into account merchandising rules, category roles, customer demand, and performance expectations.

✔ Build assortment plans that are optimized to clusters of selling locations or individual selling locations, based on anticipated consumer buying behavior.

✔ Apply assortments into the physical selling space of a category at a given location to satisfy customers, increase customer spending, and earn the highest rate of return for that space.

✔ Automate generation of consumer-centric assortment and space plans to reduce labor while making these same plans more precise at local levels.

✔ Mobilize space plan workflows to improve the way a particular store stocks goods.

All of these capabilities are optimized when there's a common data repository and technologies are tightly integrated. Selecting technology from a category management provider with integrated capabilities covering strategy, assortment planning, space planning, monitoring, and execution can ensure better performance, improve productivity, increase responsiveness, and reduce error.

Turning Collaboration Inward

Although this chapter has focused primarily on external collaboration, we also want to discuss internal collaboration. Sales and operations planning (S&OP), which we also discuss briefly in Chapter 5, is one way to achieve synchronization within an organization.

The primary objective of the S&OP process is to identify and bridge gaps between the stated business plan and the most recent view of reality — across new products, demand, supply and finance. Yet, the sheer cross-functional nature of this process makes it difficult to execute the process consistently month after month. To drive end-to-end synchronization across different stakeholders, senior-level S&OP champions have emerged at many companies over the past few years. As a result, what-if scenario analyses have become a standard method for evaluating different options to bridge demand, supply, and financial gaps. The results have been remarkable: data suggests that companies with more mature S&OP processes have better operational and financial results relative to their competition.

REMEMBER Of course, whether a company is collaborating internally or externally, the goal is the same — to have enough inventory to meet demand. With good collaboration, companies can achieve alignment that drives performance and lowers costs, resulting in greater margin and profit.

Chapter 9

Nine Common Myths about Supply Chain Technology

· ·

In This Chapter
▶ Investigating myths about costs and expenses
▶ Considering strategic differentiation

· ·

*H*ardly anybody believes myths, even those with positive outcomes (like having a fairy godmother). So, beware of the myths discussed in this chapter. They're easily refuted, and could stand in the way of your plans to develop a world-class supply chain. Take a gander through this chapter whenever the supply chain management (SCM) naysayers get you down.

There's no doubt that SCM can be a powerful differentiator for your organization. Leading supply chain technology vendors not only have a history of delivering supply chain results, but they continue to innovate to create even greater value in today's ever-changing business environment. Don't let any of these myths stand in your way of taking your supply chain to the next level.

Supply Chain Technology Costs a Lot

Cost is relative. Like any investment in your business, if supply chain technology pays back the initial investment and provides on-going savings, it's a gain, not a loss. Instead of focusing on price, examine the potential value the technology (and associated business processes) will bring to your

organization. Supply chain technology has a history of very strong return on investment (ROI), so think value, not cost.

REMEMBER

For instance, an implementation that costs $750,000 can show top-line and bottom-line value very fast (by generating new revenue and/or substantially reducing costs). To be fair, IT infrastructure can also decline in value over time. That's one reason deployments in the cloud have become more popular. For a refresher on the value of deploying in the cloud, see Chapter 4.

SCM Is too Complicated

Sure, an implementation takes some effort, but the end goal is designed to simplify your operation while improving business results. The problem isn't that SCM is too complicated; it's that the evolving global marketplace and omni-channel operations have made supply chains very complex. As a result, your company's current way of doing business has become too complicated.

SCM reduces the complexities that impact your day-to-day operations by automating routine tasks and providing insights that enable better decision making and management by exception. It also provides visibility up and down your supply chain so you can improve your interactions with your suppliers and customers. Doing so will not be without challenges and work, but the right supply chain technology provider will offer configuration tools and advice to make the process worth the effort.

We're too Small for SCM

If you have a supply chain, you are already engaged in SCM. However, as your business climate evolves, market pressures grow, and your customers' expectations continue to increase, you will need to up your game, or risk negative outcomes regardless of your size.

REMEMBER

Manufacturers must oversee increasingly complex flows of inventory, production plans, and distribution options. Retailers must manage expanding inventories and increasingly expensive labor, especially in relation to their impact on

sales. In fact, companies of all sizes must identify opportunities to improve efficiencies, cut costs, and drive profitability if they're to stay in business in today's increasingly competitive world. The key is to scale your business processes and systems to meet the size of your operation.

SCM Isn't a Strategic Differentiator

The company may not see it at first, but SCM *is* a strategic differentiator. I repeat, the CEO, the board of directors, and management team may not recognize the value of SCM initially, so you will have to prove it to them. This requires research, determination of ROI, and the ability to translate the benefits of supply chain technology into the financial terms that matter at the executive level.

So for instance, instead of telling executives how much you'll save in warehousing and transportation costs, show them how those savings will lower the company's COGS (cost of goods sold) and impact the company's SG&A (selling, general, and administrative) expenses. The strategic differentiation of SCM isn't some new miracle. It translates into increased profits, reduced expenses, and increased customer satisfaction (which is another way of saying "increased revenue"). Learn how to speak the language of the CEO and the board, and selling the executive team on the value of SCM will be a lot easier.

It Will Take Years to See an ROI

ROI is always a concern. When you're talking about an investment at this level, the returns aren't usually instantaneous. But after you implement supply chain technology and business processes, you're likely to see increases in revenue and reductions in expenses in the first year, and ideally, improve service levels to your customers.

TIP

Do a projection. A period of three years is very useful. You should see a continued increase in ROI because most costs occur in the first year, but benefits tend to continue through years two and three.

Keep in mind that some benefits are one-time and others are recurring. For instance, by using what-if scenario modeling techniques, you could decide to update existing capacity at your factories in lieu building a new one — a decision that could translate into one-time savings of millions of dollars. However, most SCM techniques, such as employing inventory postponement strategies or implementing task interleaving, deliver recurring savings on a monthly basis, and may also increase throughput, reduce inventory and working capital, and improve customer service levels. These improvements have long-term impact on revenue and profitability.

Our IT Team Doesn't Have the Bandwidth

Everyone in the company is fighting to get a piece of the IT pie. That's why the importance of operating a best-in-class supply chain must be explained thoroughly right from the start. Your ROI analysis will be critical here.

Simply put, you should move your best people to support SCM because of its long-term impact on revenue and profitability. Your implementation budget should have allowance for working with supply chain technology vendors that provide consulting services, in addition to delivering value through their solutions. These providers can leverage their business process management experience to help guide the requirements gathering and implementation, while ensuring that your teams will be able to gain the greatest value out of your supply chain technology investment through improved business processes.

REMEMBER

For some companies, there just won't be enough IT resources, or the right IT skillsets, to take on a large SCM project. These companies can benefit from implementing supply chain technology in the cloud. Cloud vendors manage implementation, on-going maintenance, upgrades, and day-to-day activities to

ensure you can always take advantage of the latest capabilities and the highest levels of system availability.

We've Already Cut Costs

Congratulations on cutting costs! Did you know that cost-cutting measures don't always last forever and that there are always more opportunities to minimize expenses? I'm guessing that you do. That's why it's good to know that implementing supply chain technology and business processes is likely to cut costs further. Continuous supply chain optimization results in greater efficiency, which by default continues to drive down cost. Not to mention that associated increases in sales combined with lower expenses boost top-line revenue.

Also, SCM is likely to save time. Time, some say, is the most precious item on earth; you never get lost time back. Use cases often show how the right technology can result in a dramatic increase in employee productivity and support faster decision making across all levels of the organization. Those time savers work in your favor. SCM also saves time by speeding up operations, increasing throughput and reducing inventory carrying costs and capital investment. In this case, time really is money.

There's No Point in Planning as Forecasts Are Always Wrong

Any military strategist will tell you that no plan survives contact with an opposing force, and of course this can be true with consumers too. Forecasts are a prediction of future consumer demand based on past consumption activity and causal events. Yet, what customers want today, they may not want tomorrow. Obviously, retailers must have stock on hand to meet customer needs, and manufacturers have to know what to build — so how do they get there?

Successful organizations leverage advanced supply chain technology to examine all the factors that impact forecasts, and they must have demand-level visibility, so that they can

see what's happening at the point of consumption. With a complete end-to-end view of the supply chain, collaboration can occur, enabling manufacturers and retailers to make inventory optimization decisions based on real-time, shared data. While forecasting can be a complicated process, it is the foundation for effectively meeting customer needs.

We Already Have a Best-in-Class Supply Chain

The dynamic nature of the supply chain requires constant care and feeding. Changes to the business — such as acquisitions, divestitures, employee turnover, global expansion, and new product introductions, to name just a few — have the potential to put the long-term value of your technology at risk.

Maybe you need to replace some of your supply chain technology; maybe you need to modify it; maybe you need to leave it alone. Look at what you're doing. Can your current system adapt, evolve, and scale at the speed of your business? Higher freight costs or an increase in stranded inventory, for instance, could be signs that your supply chain technology and processes may need some fine-tuning. You may need to explore a software upgrade, replacement, or optimization of your business processes in order to "stay even" in your industry sector.

Appendix A

Glossary

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assortment: The number and variety of products displayed by a retailer in each store and channel for purchase by consumers.

big data: A term used to describe extremely large structured, semi-structured, and unstructured data, which can be mined for critical information.

capacity: The capability of employees, machines, factories, or an organization to produce the required outcome within a specific time frame.

category: A term used to describe a range of similar or related products that are grouped together.

channels: A term used to represent the different avenues by which products can be purchased by consumers. Examples include a retail store, computer or mobile device, catalog, television, radio, direct sales force, telemarketing.

consumer demand: The amount of goods or services that consumers are willing to purchase.

cost of goods sold (COGS): A metric used to quantify the costs that can be attributed to the production of goods sold by a business, such as costs related to raw materials and labor used to produce the goods.

demand planning: The process of creating reliable forecasts that predict consumer demand.

distribution center: A facility that is used for the receipt, temporary storage, and redistribution of goods.

fill rate: A metric used to describe the percentage of a customer's order (such as percentage of items, stock-keeping units, or order value) that is fulfilled on the first shipment.

flowcasting: Collaborative forecasting and planning technology that enables trading partners to work together from a single, item-level forecast and plan that is executed jointly by both partners for mutual benefit.

forecasting: The process of using predictive analytics in order to anticipate consumer demand for products.

inventory: A term used to represent raw materials, work-in-progress goods and finished goods that are either available for sale, or will be available for sale.

inventory turns: A metric used to quantify how often a business sells and replaces its inventory.

omni-channel consumer: A person who shops and buys through more than one channel.

out-of-stock: A term used when a product isn't available when a shopper wants to purchase it.

on-time shipping rate: A metric used to measure a company's ability to fulfill an order within the time frame promised to the customer.

perfect order measurement: A term used to describe the rate that each stage of the purchase order process occurs without any errors.

planogram: A diagram or model that indicates the placement of products on retail shelves in order to maximize sales.

replenishment: A term used to describe the process of replacing inventory that has been sold with new inventory in order to avoid stock-outs.

supply chain segment: A grouping of one or more categories (such as customers, products, channels or regions) based on their value to the organization.

what-if scenario modeling/simulation: Calculations used to test different assumptions and scenarios in order to determine the best course of action.

work-in-process inventory: A terms used to describe all materials and partly finished goods that are at various stages of the production process.

Appendix B

Common Supply Chain Acronyms

3PL: Third party logistics.

AS/RS: Automated storage and retrieval system.

ASN: Advance shipment notification.

ATP: Available to promise.

B2B: Business to business.

B2C: Business to consumer.

COGS: Cost of goods sold.

CPFR: Collaborative planning, forecasting, and replenishment.

CR: Continuous replenishment.

CTP: Capable to promise.

DOM: Distributed order management.

DSD: Direct to store delivery.

ERP: Enterprise resource planning.

FG: Finished goods.

IMS: Inventory management system.

ISP: In-store picking.

JIT: Just in time.

KPI: Key performance indicator.

LMS: Labor management system.

MES: Manufacturing execution system.

MS: Master scheduling.

MTO: Make to order.

MTS: Make to stock.

OTIF: On time in full.

PO: Purchase order.

POS: Point of sale.

PTP: Profitable to promise.

RFID: Radio frequency identification.

RMA: Return material authorization.

S&OP: Sales and operations planning.

SCP: Supply chain planning.

SCV: Supply chain visibility.

SKU: Stock keeping unit.

SS: Safety stock.

TMS: Transportation management system.

VAS: Value-added (logistics) services.

VMI: Vendor managed inventory.

WCS: Warehouse control system.

WIP: Work in process.

WMS: Warehouse management system.

Notes

Notes

Learn to manage your supply chain more efficiently and profitably!

This book takes a look at supply chains today and how supply chain excellence is critical to business success. You'll learn best practices for supply chain planning and execution that can help take your business operations to the next level.

- *Supply chain 101 — review the basics and examine supply chain challenges affecting your company*

- *Meeting consumers' needs — see how segmentation and collaboration can help you better deliver on the expectations of today's empowered consumer*

- *Managing the supply chain effectively — learn how a best-in-class supply chain helps your company better manage inventory, costs, and assets*

- *Supply chain technology — find out about the advanced capabilities needed to optimize your supply chain planning and execution processes*

- *Intelligent distribution — learn how to fulfill your customer orders accurately, efficiently, and profitably*

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