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Chapter **1**

The Growing Demand for Supply Chain Management

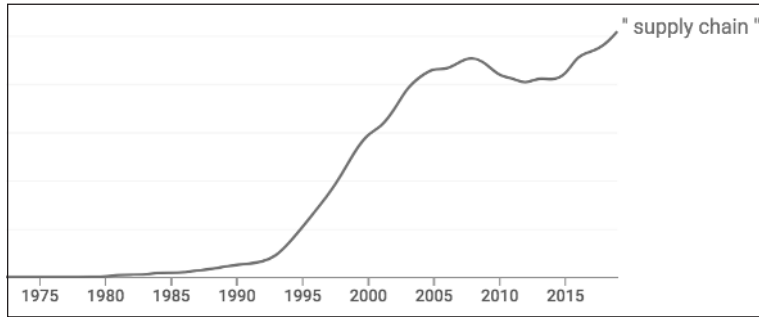
These days, it's hard to find a copy of *The Wall Street Journal* that doesn't have the phrase *supply chain* somewhere on the first page. You hear about supply chains everywhere: in company reports, on the news, and even in casual conversation. But it hasn't always been that way. Only in the past 35 years has supply chain management gone from being a vague academic concept to a critical business capability. This chapter covers why supply chain management has become so important and explains the process for building best-in-class supply chain management into your company.

Defining Supply Chain Management

In spite of the current hype, supply chains aren't really that new. Entrepreneurs have been buying things from suppliers and selling products to customers for almost as long as people have inhabited the earth. Supply chain *management* is

new, however. In fact, the basic principles of supply chain management began to take shape in the 1980s, at about the same time that personal computers came onto the business scene. You can see the trend clearly by using Google's N-Gram Viewer, shown in Figure 1-1, which illustrates how often the term *supply chain* has been used in book titles.

FIGURE 1-1:
Frequency of
supply chain in
book titles.



Supply chain management is the planning and coordination of all the people, processes, and technology involved in creating value for a company. Managing a supply chain effectively involves aligning all the work inside your company with the things that are happening outside your company. In other words, it means looking at your business as a single link in a long, end-to-end chain that supplies something of value to a customer.



TIP

The word *value* shows up a lot when people talk about supply chain management. Basically, *value* means *money*. If a customer is willing to pay for something, it has value.

Negotiating prices, scheduling manufacturing, and managing logistics all affect the value equation for a company, and they're critical to a supply chain, but because they're so interdependent, it's a bad idea to manage them separately, in silos. As companies grow larger, supply chains get longer, and the pace of business gets faster, making it more important to align the various functions in a supply chain. Ironically, many of the strategies and metrics that businesses relied on in the past, and that managers have been taught to use, can actually drive the wrong behaviors. A sales rep might hit her quota by landing a huge deal with a customer, for example, but the deal might be unprofitable for the company because of the costs it will drive to the logistics and manufacturing functions. Sales, logistics, manufacturing, procurement, and all your other functions need to be aligned to ensure that the business is pursuing profitable deals.



TIP

The difference between the amount of money your company brings in (revenue) and the amount of money it spends (costs) is your profit. In other words, your profit is the amount of value that you have captured from your supply chain.

On the other hand, companies that do a good job of managing their supply chain are better able to take advantage of value-creation opportunities that their competitors might miss. By implementing lean manufacturing, for example, companies can reduce inventories. By being responsive to customer needs, they can build stronger relationships with their customers and grow their sales. By collaborating closely with their suppliers, they can get access to the materials they need, when they need them, and at a reasonable cost.



TIP

Part 4 of this book is all about ways you can use supply chain management to create more value.

Keeping all the parts of the supply chain aligned is key to ensuring that revenue is greater than costs and running any business successfully. That's why supply chain management has become so important so quickly.

Exploring Complex Business Challenges

Managing a business is like playing a full-contact sport: So many moving pieces are involved, and so many things can change in an instant, that making long-term plans is virtually impossible. How can you really plan for commodity price swings, natural disasters, and financial meltdowns? You can't. You can't ignore those possibilities, either. Instead, you need to think about them and design your business so that it can function well under a range of scenarios. In other words, you need to think about the many possibilities that the future holds, try to imagine each one as a series of events, and then think about how it would affect your business.

To use scenario planning to prepare for the unknown and the unknowable, you need to understand three really important things:

- » Which scenarios are most important to you.
- » What you'll do — and how — in each scenario. (Each scenario calls for a different plan.)
- » How you can tell when a scenario is becoming reality. You need to have triggers that help you decide when to implement which plan. Then the job of supply chain management becomes a process of sensing and responding to those triggers.

You need to determine how your business will sense what's happening and how events will respond. Figure 1-2 shows how your sensors help you recognize which scenario is unfolding so that you can implement the proper plan.

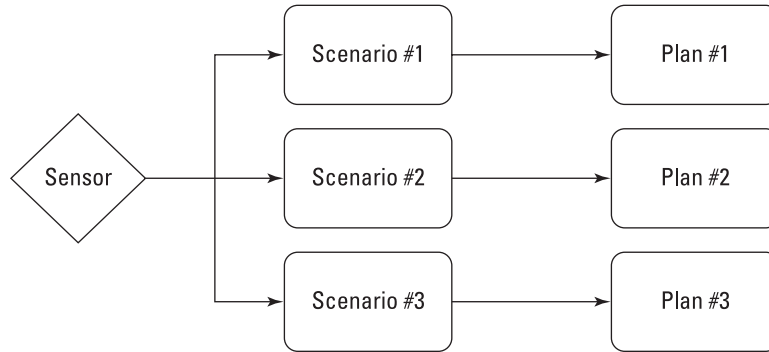


FIGURE 1-2:
Scenario-planning
model.

I can explain this concept with a few practical examples:



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- » You run a manufacturing company that imports products from overseas, so you need to consider what you'd do if one of your inbound shipments is lost at sea, impounded by customs, captured by pirates, or caught in a port strike. One option might be shutting down your factory until the issue is resolved. You might also consider placing a new order with a different supplier. In an extreme case, you might declare *force majeure* and tell your customers that you won't be able fulfill your commitments to them.

Force majeure is a legal concept used in contracts to free one or both parties from liability if they're unable to meet their obligations due to an extraordinary circumstance.

- » You work for a wholesaler that has been selling a product at a steady rate for months, and one month, the company sells twice as much as normal. You don't have enough inventory to fill all your customer orders, and now you also have back orders to fill. You may even be at risk of losing sales and customers. You might decide to place bigger orders in the future and keep more inventory on hand. That means you'll be investing more working capital in inventory, and if sales drop off in the future, you'll have to figure out what to do with that extra inventory.
- » You work for a transportation company. The company's customers pay you to deliver their products around the world, and they count on your deliveries to help them meet their commitments to their own customers. Therefore, your ability to deliver on time is essential to them. Suddenly, a volcano in a distant part of the world spews ash far into the sky, making it dangerous for airplanes

to use a heavily traveled flight path. You could reroute your planes, but this process is an expensive one that involves developing flight plans, scheduling airplanes, and finding available crews. Alternatively, you could tell your customers that their deliveries are on hold until normal operations can resume.

Thousands of companies have had to face every one of these scenarios in the past few years. In every case, making the right decision about how to respond requires understanding supply chains and supply chain management.



TIP

You can find more information about supply chain scenario planning, as well as a link to the MIT Scenario Planning Toolkit, in Chapter 18.

Some supply chain management professionals are generalists, and others are specialists. Generalists look at the big picture; specialists focus on a particular step in the supply chain. A good way for you to start learning about supply chain management is to think like a generalist and become comfortable with some of the general principles.

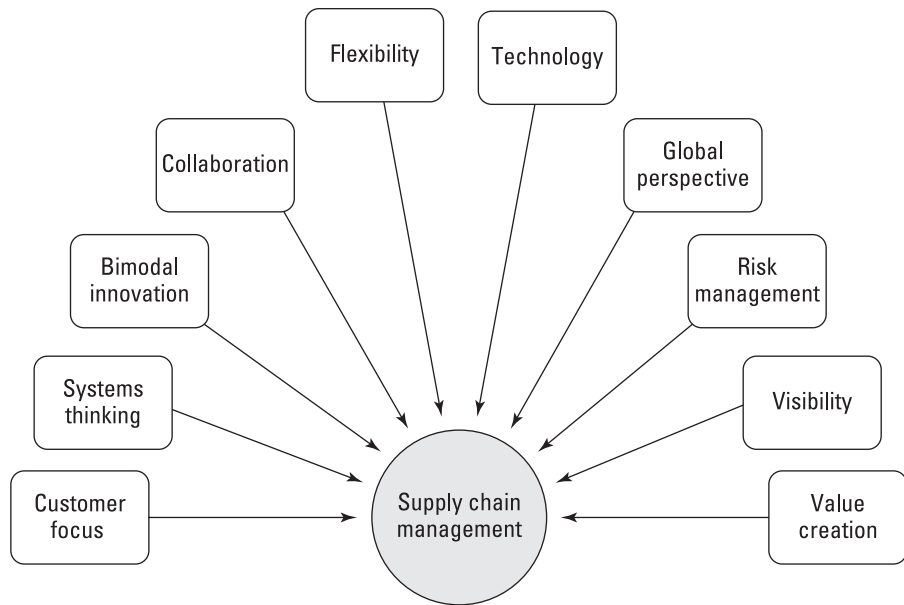
The next sections cover ten supply chain management principles, five supply chain tasks, and the five steps for implementing a new supply chain agenda. Each section provides a slightly different perspective on supply chain management, but the sections explain the same challenge in different ways. The supply chain management principles express the essence of supply chain management. The five supply chain tasks are like the job description of a supply chain manager. And the New Supply Chain Agenda is a strategy for planning and implement effective supply chain management practices.

Operating Under Supply Chain Management Principles

Many people try to define supply chain management by talking about what they do, which is a bit like describing a cake by giving someone a recipe. A different approach is to explain what supply chain management creates. To continue the cake analogy, that approach communicates how the finished cake tastes and what it looks like.

The key supply chain management principles illustrated in Figure 1-3 are good places to start.

FIGURE 1-3:
Supply chain
management
principles.



Customer focus

Supply chain management starts with understanding who your customers are and why they're buying your product or service. Any time customers buy your stuff, they're solving a problem or filling a need. Supply chain managers must understand the customer's problem or need and make sure that their companies can satisfy it better, faster, and cheaper than any competitors can.

Systems thinking

Supply chain management requires understanding the end-to-end system — the combination of people, processes, and technologies that must work together so that you can provide your product or service. Systems thinking involves appreciation of the series of cause-and-effect relationships that occur within a supply chain. Because these systems are complex, supply chains often behave in unpredictable ways, and small changes in one part of the system can have major effects somewhere else.

Bimodal innovation

The world of business is changing quickly, and supply chains need to keep up by innovating. Two kinds of innovation are important for supply chains:

- » **Sustaining innovation:** *Sustaining innovation* is built on continuous process improvement techniques such as Lean, Six Sigma, and the Theory of Constraints (see Chapter 4). Sustaining innovation isn't sufficient, though, because new technologies can disrupt industries. So you also need to pursue disruptive innovation.
- » **Disruptive innovation:** *Disruptive innovation* introduces a product, process, or service that creates new markets and destroys established paradigms. When a disruptive solution is accepted, it becomes the new dominant paradigm. If you're in the business of making buggy whips, you need to figure out how to make buggy whips better, faster, and cheaper than your competitors do, as well as what the new dominant paradigm is going to be so that you'll know what to do when buggy whips are replaced by a different technology.

Collaboration

Supply chain management can't be done in a vacuum. People need to work across departments inside an organization, and they need to work with suppliers and customers outside the organization. A “me, me, me” mentality leads to transactional relationships in which people focus on short-term opportunities while ignoring the long-term results. This situation costs more money in the long run because it creates lack of trust and unwillingness to compromise. An environment in which people trust one another and collaborate for shared success is much more profitable than an environment in which each person is concerned only with his or her own success. Also, a collaborative type of environment makes working together a lot more fun.

Flexibility

Because surprises happen, supply chains need to be flexible. Flexibility is a measurement of how quickly your supply chain can respond to changes, such as an increase or decrease in sales or an interruption of supply. This flexibility often comes in the form of extra capacity, multiple sources of supply, and alternative forms of transportation. Usually, flexibility costs money, but it also has value. The key is understanding when the cost of flexibility is a good investment.

Suppose that only two companies in the world make widgets, and you need to buy 1,000 widgets per month. You may get a better price on widgets if you buy all of them from a single supplier, which would lower your supply chain costs. But you'd have a problem if that supplier experienced a flood, fire, or bankruptcy. You may save some money at first, but you're stuck if anything goes wrong with that supplier.

If you established a relationship with the second supplier by buying some of your widgets from them — even at a higher cost — you wouldn't be hurt as badly if the first supplier stopped making widgets. Having a second supplier provides flexibility.



TIP

Think of the extra cost that you pay to the second supplier as a kind of insurance policy. You're paying more up front, but you're increasing your supply chain flexibility and protecting yourself from a possible disruption.

Technology

The rapid evolution of technology has transformed the way that supply chains work. A few years ago, we ordered things from catalogs, mailed in checks, and waited for our packages to be delivered. Today, we order products on our phones, pay for them with credit cards or information stored in a digital wallet, and expect real-time updates until those packages are delivered to our doorsteps. Supply chain management requires understanding how technologies work and how to use them to create value at each step in the supply chain.

Global perspective

The ability to share information instantly and to move products around the world cheaply means that every organization today operates in a global marketplace. No matter what product or service you provide, your company is global in some way. As a supply chain manager, you must recognize how your business depends on global factors to supply inputs and drive demand for outputs. You also need to think globally about competition. After all, your company's real competitive threat could be on the other side of the planet.

Risk management

When you combine high-performance requirements with complicated technologies and dependence on global customers and suppliers, you have a recipe for chaos. Lots of variables mean that many things can go wrong. Even a small disturbance, such as a shipment that gets delayed, can lead to a series of problems farther down the supply chain — stockouts, shutdowns, penalties, and more. Managing a supply chain means being aware of risks and implementing processes to detect and mitigate threats. Stability may be the key to making supply chains work smoothly, but risk management is the key to avoiding or minimizing the costs of dealing with surprises. Done well, risk management can even provide opportunities to capture value during times of uncertainty.

Visibility

You can't manage what you can't see, so supply chain management makes visibility a priority. Knowing what's happening in real time (or close to real time) lets you make better decisions faster. Visibility comes at a cost, however: You have to build your supply chain in a way that lets you capture data about key steps in the process. The value of visibility is that it lets you make decisions based on facts rather than on intuition or uncertainty. Having better visibility into supply and demand allows you to optimize the amount of inventory that you hold throughout the supply chain.

Value creation

Supply chain management is about creating value — meeting your customers' needs in the right place, at the right time, at the right level of quality, for the lowest cost. This value is the heart of supply chain management. If I had to pick just one principle to describe the whole process of supply chain management, it would be value creation.

Introducing Five Supply Chain Tasks

James B. Ayers is a supply chain management expert who works with manufacturers, service companies, and government agencies. In *Handbook of Supply Chain Management*, 2nd Edition (Auerbach Publications, 2006), Ayers says that supply chain management should concentrate on five tasks:

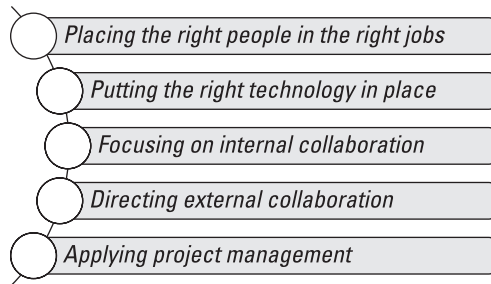
- » **Designing supply chains for strategic advantage:** Consider how your supply chain can help you create value by operating better, faster, and cheaper than your competitors. Think beyond just lowering costs, and consider ways in which your supply chain can help you grow revenue, innovate, and even create new markets.
- » **Implementing collaborative relationships:** Consider how you can get teams to work together toward a goal rather than compete for conflicting objectives. If your sales team is trying to improve customer service by making sure that plenty of inventory is available, and your logistics team is trying to reduce inventory to lower costs, both teams are probably going to waste a lot of energy. Supply chain management can help them align their objectives.

- » **Forging supply chain partnerships:** Consider how you can build and sustain strong relationships with customers and suppliers. When companies understand that they depend on one another for success — and perhaps survival — working well together becomes a priority. Companies that don't do a good job of forming and sustaining supply chain partnerships end up at a competitive disadvantage.
- » **Managing supply chain information:** Consider how you can make sure that information is shared with others in the supply chain in ways that create value for everyone. When retailers share sales data with their upstream partners, the manufacturers and distributors do a better job of scheduling production and managing inventory. When manufacturers share data about commodity prices and capacity constraints with their downstream supply chain partners, the retailers do a better job of managing pricing and promotions. Sharing the right information up and down the supply chain helps everyone create more value.
- » **Making money from the supply chain:** Consider how you can use your supply chain design, relationships, partnerships, and information to capture value for your company. At the end of the day, businesses are sustainable only if they're able to generate a profit. In supply chains, a process change for one part often creates value for someone else. Find ways to share this value so that everyone has an incentive to work toward optimizing the value of the entire supply chain and ensuring that all the participants make a profit along the way.

Implementing the New Supply Chain Agenda

One of my favorite books about supply chain management is *The New Supply Chain Agenda*, by Reuben E. Slone, J. Paul Dittmann, and John T. Mentzer (Harvard Business Review Press, 2010). It's a business book — the kind that you'd find in an airport bookstore — that breaks down the challenge of supply chain management in a way that focuses on senior executives. The authors talk about working capital and liquidity, strategy, and alignment, and they lay out a five-step system for making a company better at supply chain management. The five steps of the New Supply Chain Agenda are shown in Figure 1-4.

FIGURE 1-4:
The New Supply
Chain Agenda.



Placing the right people in the right jobs

Implementing supply chain management requires understanding how your job affects other people inside your company, as well as the people up and down the supply chain. If people don't understand the true effect of the jobs that they do, they need to learn so that they can do their jobs better. If someone is unable to learn or doesn't want to learn, he or she isn't the right person for that job. Getting the right people in the right jobs is the first step in implementing an effective supply chain strategy.

Putting the right technology in place

Supply chains depend on technology. The technology may be something simple, such as a whiteboard with sticky notes that gets updated daily, or it may be something as complicated as an enterprise resource planning system. Each business, and each function within each business, has different technology needs. Figuring out how technology can enable your supply chain to create and capture value and then implementing the right technologies at the right time is the second step in the New Supply Chain Agenda.

Focusing on internal collaboration

When you look at a company's organization chart, it's easy to see how traditional business structures create silos within a company, with divisions competing for limited resources and often working toward conflicting goals. Managing from a supply chain perspective helps you break down the silos that keep people from collaborating effectively. By changing the focus from the performance of the separate groups to the performance of the company's supply chain as a whole, each division becomes more dependent on the others for its own success. Sales teams need to collaborate with operations teams. Logistics teams need to collaborate with procurement teams. Everyone needs to understand the company's strategy and work toward common goals.

Directing external collaboration

Traditional business relationships are transactional and often self-centered. Buyers and suppliers approach each deal as a win-lose game: The suppliers are trying to inflate their profits, and the buyers are trying to squeeze them on price. Over the long run, this approach can damage both parties because it destroys value rather than creates it. To build sustainable supply chain relationships, each partner needs to look for opportunities to contribute more value. The goal is for each to identify ways to share value, maximize total value, and be successful over the long term. This approach is very different from a transactional approach, in which each party is trying to squeeze every penny from each deal even if it means causing harm in the long run.

Applying project management

Supply chains are dynamic. Companies respond to changes with projects, so the last step in the New Supply Chain Agenda is implementing strong project management capabilities. Teaching people how to manage projects well and having professional project managers involved are the keys to ensuring that your supply chain evolves as your customers, suppliers, and company change.



TIP

I provide a whole section about leading supply chain projects in Chapter 4.