Why companies flunk supply-chain 101: only 33 percent correctly measure supply-chain performance; few use the right incentives

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If the past several years have taught us anything, it is that we live and work in a time of chronic uncertainty. Global shocks like the Asian currency crisis, the war in Iraq, or the SARS epidemic can have broad and sudden effects on global markets. Economic strife can turn years of prosperity into years of austerity seemingly without warning.

What the winners in this chaotic business environment demonstrate is that effective supply-chain management is a crucial tool in prospering amid the uncertainty. Not only does a flexible, robust system for sourcing, warehousing and distributing goods help companies cope with emergencies abroad, but it can dramatically improve customer responsiveness, operational efficiency and profits at home.

This, of course, is no secret to most top managers. What is surprising is how few of them are taking the right steps to make sure their supply chains are competitive. Bain and Co. reports that more than 85 percent of senior executives responding to a recent survey said that improving their firms' supply-chain performance is one of their top priorities. Yet fewer than 10 percent are adequately tracking that performance. And fewer still – 7 percent – collect the information necessary to meaningfully measure their progress.

The study, which polled 162 top managers with supply-chain oversight, also found that the gap between leaders and laggards in supply-chain management is likely to expand. Two-thirds of the companies that consider themselves supply-chain leaders said they consider further improvement of their performance a ''high'' or ''top'' priority. But just over a third of the laggards say they will prioritize catching up.

The exemplars – companies such as Wal-Mart, Dell Computer, and Toyota – have systems in place that meticulously analyze everything from customer forecasts to product pricing to warehouse inventory turns. And already, the top performers are twice as efficient as the average. Independent research shows that supply-chain leaders spend only about 4 percent of their revenues on supply chain costs. The average company spends about 10 percent (see Figure 1).

On many other measures and across multiple industries, the leaders' two-to-one performance advantage shows up again and again. The advantage for the best companies tends to keep growing. Dell, for example, has long drawn analyst praise for its lean supply chain. But even as its rivals invest heavily to improve their own efficiencies, Dell has managed to extend its lead. In 1996, the PC maker kept 15 days of inventory – half that of rival Compaq. In 2001, Dell's inventory was down to almost four days while Compaq's, pre-merger with Hewlett-Packard, was at 24.

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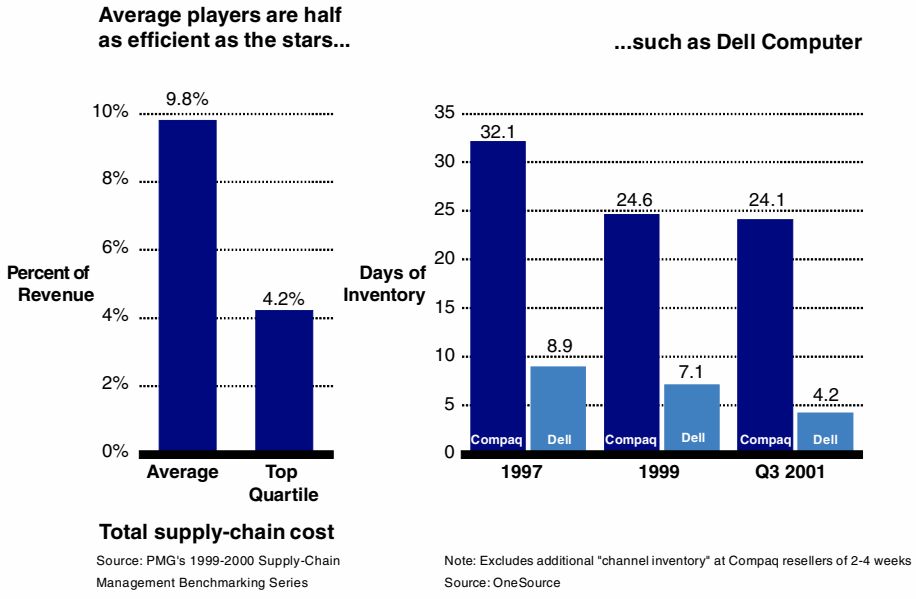
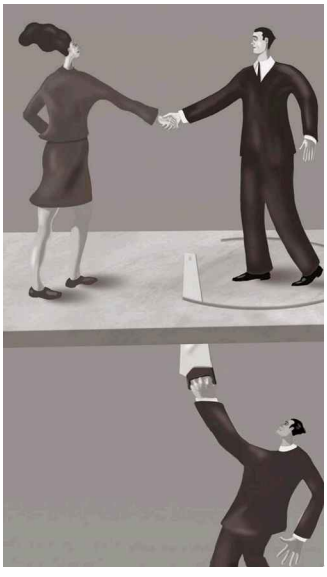
Figure 1



Source: PMG's 1999-2000 Supply-Chain Management Benchmarking Series

Note: Excludes additional "channel inventory" at Compaq resellers of 2-4 weeks
Source: OneSource



Chained to bad habits

The question is, why are so many companies flunking supply chain basics? Bain's research has uncovered four major reasons:

1. **Most companies are hazy about their supply-chain performance.**
   Only 15 percent say they have full information on what's happening in their own companies (see Figure 2). Even among firms that say supply-chain improvement is a priority, slightly less than two-thirds say they have got all the necessary information.

2. **Too many companies are supply-chain introverts.**
   In other words, many companies fail to adequately recognize that the supply chain extends far forward to customers, and back, to suppliers and their suppliers. Imagine how difficult it is for a supplier to plan production effectively when a key customer withholds forecast data. If Ford had not built solid links to suppliers and customers, it could not have handled its huge recall of Firestone tires as effectively as it did in late 2000. Despite the clear benefits of opening up, however, the Bain study showed only 7 percent of companies going outside their four walls to track the performance of supply-chain activities at their vendors, logistics providers, distributors, and customers (see Figure 3).

3. **Incentives do not tie to supply-chain improvements.**
   Only two out of five survey respondents said their companies use pay-for-performance rewards to motivate their supply-chain executives (see Figure 4). But even those doing so often make the mistake of using the wrong targets. Almost 80 percent of those incentives fail to take into account customer feedback and vendor results. Moreover, companies that reward buyers when they avoid running out of stock, but do not offer anything when they

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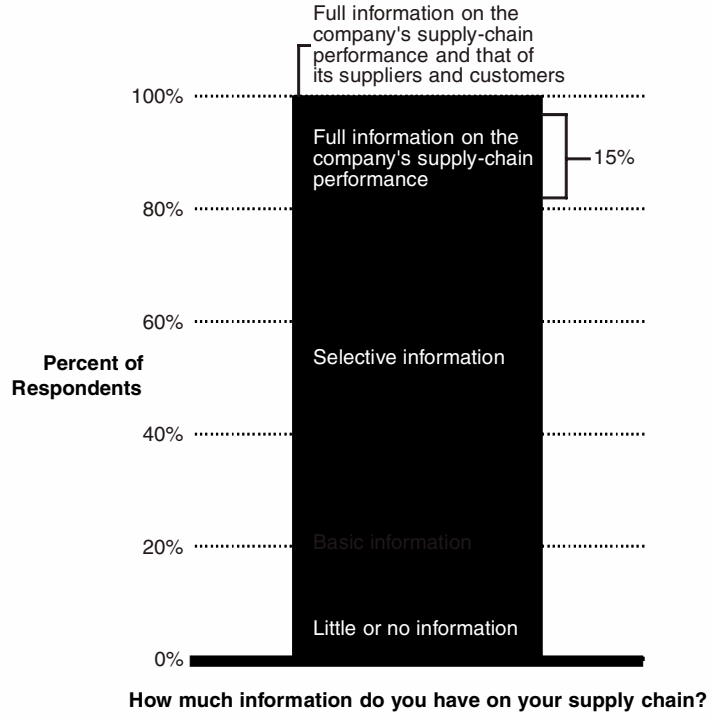
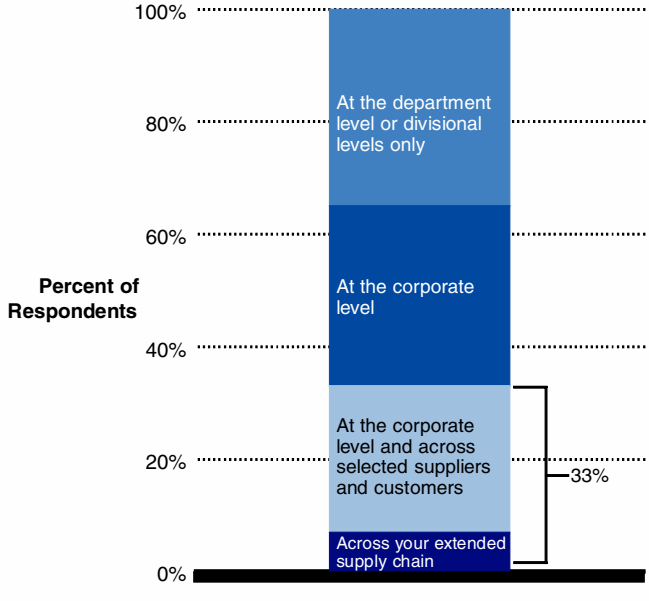
Figure 2 Only 15 percent say they have good information on their supply chain



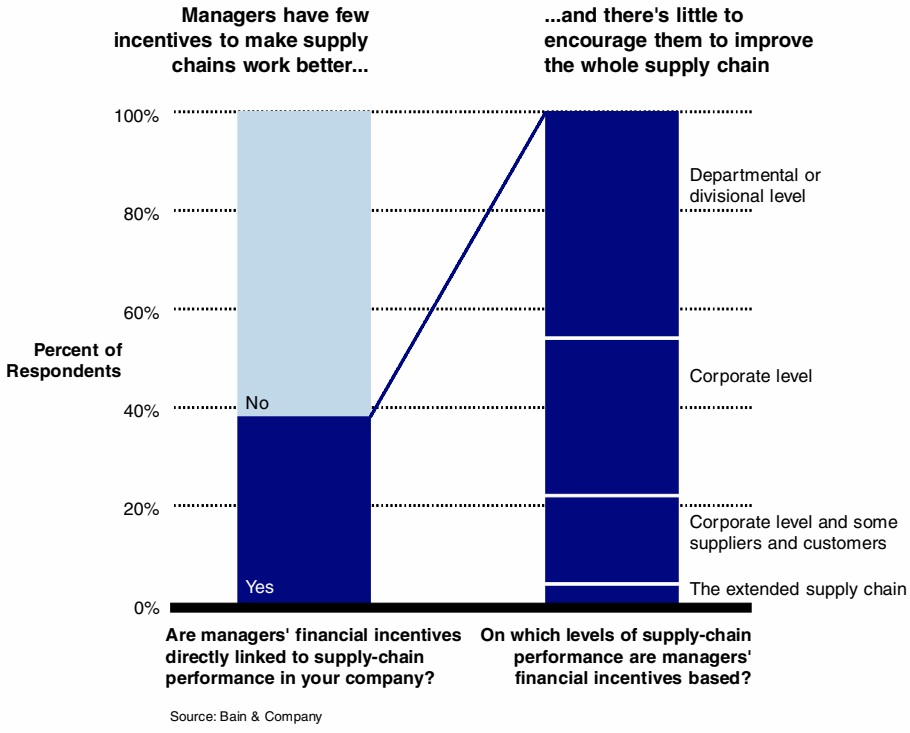
Source: Bain & Company

Figure 3 Only a third of businesses track supply-chain performance outside their four walls



Source: Bain & Company

Figure 4



improve inventory turns, are penny-wise and pound-foolish. It is just as bad when transportation managers are measured on delivery cost but not on on-time performance. By using the cheapest, slowest route, a fortune can be lost in carrying costs, speed to market, and lost inventory turns.

4. **There is still a bias toward quick IT fixes.**
   Businesses too often rely on sophisticated software to solve their supply-chain problems. And most of them turn their inventories no faster than they did a decade ago. Asked to rate a list of six ways to improve their supply-chain activities, respondents gave the highest weighting 21 percent – to ''rebuild our supply-chain IT systems''. A more fundamental solution – ''improve our supply-chain talent'' – was cited by just 14 percent of the companies.

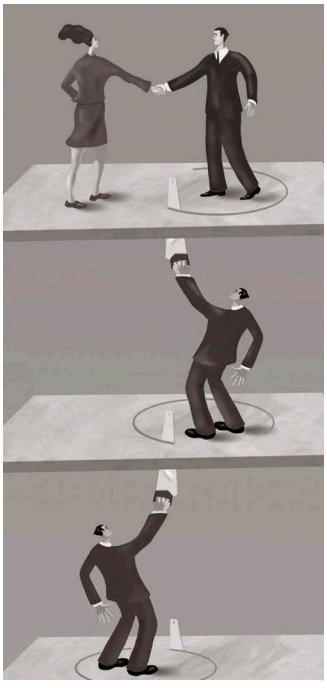
Breaking free

So what can businesses do right now to shore up their supply chains and begin to see the bottom-line benefits? They can emulate the supply-chain exemplars by sticking to these five fundamentals:

Get the strategy right first

Most managers are unclear about their firms' strategic underpinnings. So it is not surprising that they do not know which supply-chain improvements can drive real advantage, which service enhancements customers will value, and how they should hook their operations into those of suppliers and customers so the whole chain is competitive. Many still believe that supply-chain software will sort things out. But technology cannot atone for flawed processes.

Take the experience of one large cruise ship operator, which grew rapidly in the late 1990s and quickly outstripped its ability to manage its highly diverse inventory. Having expanded from five ships to more than 20 in the space of five years, its manual systems for keeping track of



everything from soup ingredients to office supplies had collapsed. Executives had no clear view of the ships' onboard consumption patterns and vendors were even more in the dark. With only a few hours to restock ships in port, the company found itself running out of inventory and spending more to air-freight seemingly inconsequential items like chocolates than the items themselves were worth.

The company had a strategy – rapid expansion – but it had not recognized a crucial factor: Effective strategic planning demands an underlying scheme for building operations support. To rescue the situation, the top supply chain executive decided to implement an automated, Web-based inventory management system. To make it work, however, he knew he would first have to devise a system to collect much more reliable data on consumption patterns and how they are driven by factors like itinerary shifts, sudden menu changes and seasonal issues. He also wanted to bring his vendors into the equation by providing them with more timely inventory information and relying on their expertise to manage some of the supply-chain uncertainty.

As it built systems to collect the relevant data and connect with suppliers, the cruise company made several other important changes to the way it does business. Kitchen operations, for instance, had been run like jumbo-sized restaurants. They were transformed into gourmet food factories with production schedules and other practices more common to the shop floor. The company also came up with a new warehousing system to speed up turns and lower inventories. And it rewrote its procurement and logistics processes. All of this required new technology, but the architecture was driven by the cruise operator's strategy not the software vendor's. The supply chain transformation is still a work in progress. But when all is said and done, the company hopes to cut inventory costs in half.

Put star players on the problem

Supply-chain roles are rarely seen as glamorous. But supply-chain maestros such as Dell set plenty of store by them. They recruit top-caliber people who can save them millions of dollars with better forecasts, vendor strategies, and execution. The best companies also work to align many departments under a senior executive whose job is to plan, measure, and optimize the performance of the whole chain.

For Dell, of course, supply-chain excellence sits at the very core of its strategy. That is why responsibility for worldwide operations falls directly to the company's No. 2 executive, Kevin Rollins. His job is to continuously wring costs and efficiencies from Dell's revolutionary direct ordering and just-in-time manufacturing system – the one that allows Dell to dictate the terms of competition in the PC business. To call this strategy ''disruptive'' is to understate the case. Even as rivals such as Compaq and Hewlett-Packard (now a merged company) have scrambled to mimic Dell's efficiencies, Dell has continued to extend its cost lead.

It should come as no surprise, then, that Dell has always relied on the leaders in the supply-chain world. As early as 1992, when the company was still just an upstart, it hired Scott Flaig, one of the pioneers in the development of ''virtual manufacturing'' strategies. As a supply-chain executive at Digital Equipment, in fact, Flaig's efforts were the subject of a 1987 Harvard Business School case study that was the first published discussion of ''virtual manufacturing''. He was in charge of Dell's worldwide operations until he retired in 1995 to teach the virtual enterprise course at Northwestern's Kellogg School of Management. He then became the architect of Iomega's virtual manufacturing system in the late 1990s.

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These days, the company’s co-heads of worldwide procurement are computer industry veterans plucked from top positions at Hewlett-Packard and Texas Instruments. Dell snagged its chief information officer, Randy Mott, from Wal-Mart, where he had spent 22 years managing the information systems that allow that company to dominate its industry in much the same way Dell controls the PC world. Time and again, Wall Street analysts have predicted that Dell would slow down eventually and let the competition catch up. But key executives like these spend each day making sure that does not happen.

Replace hunches with metrics

If you do not track performance – the performance of the whole supply chain – you are in the dark about what your supply-chain inefficiencies cost. Yet many companies are guessing when setting inventory targets. They do not know how much of their products will sell at what prices, and they do not analyze what they have sold at different prices. So they leave money on the table – or overpriced goods on shelves.

Look at the retail sector: leaders such as Wal-Mart use their supply-chain skills for sophisticated management of shelf placement and pricing. Rather than taking the typical approach of ‘‘art over science’’ in allocating product space, the leaders analyze what moves and moves profitably, and then assign space and set inventory based on product popularity. This is not just a data-collecting exercise; it uses hard and fast metrics to describe what customers really want. That allows companies to plan more effectively and profitably while making sure that customers do not leave the store disappointed. In the case of Wal-Mart, the profits speak for themselves.

This sort of supply strategy, of course, demands a rigorous approach and dependable data. Neither is easy to come by. One large electronics retailer, for instance, used to rely heavily on computer generated inventory forecasts. But it also allowed its multiple inventory managers to regularly override those forecasts based on their own hunches and experience. Unfortunately, the forecasts were not particularly accurate to begin with and the tampering made things worse. Adding to the problem was that managers were compensated based on sales performance metrics rather than inventory turns. Not surprisingly, this was a recipe for overstocking inventory – expensive items like stereo equipment, computers and TVs – as managers prioritized keeping the showroom full so as to avoid crimping sales. Unlike a more sophisticated retailer with precise data on what moves at what price, this company was playing a guessing game. It was losing more often than not.

Knowing that it could ill-afford this kind of inefficiency in such an ultra-competitive market, the company took several steps to beef up its inventory processes. It still relies on computerized inventory forecasts, but it has restricted its inventory managers from overriding them. It has also trained users in statistical forecasting methods, while compiling data to measure the accuracy of those forecasts. And now, bonuses for inventory managers are based on forecasting accuracy, not sales.

Meanwhile, in an effort to improve supply chain efficiency, the company has also become hawkish about tracking essentials like carrying costs and vendor on-time rate. It has set standards for vendor performance and has implemented collaborative vendor-retailer

performance improvement teams. The hope is that the combination of proper forecasting and better ties to vendors will add up to more efficient use of warehousing assets. If it works, the company thinks it can wring $400 million in costs out of the system.

Reach past your four walls

The best performers, of course, have already linked their operations with those of their customers, suppliers, and logistics providers. They know their own performance metrics, and those of all their partners at both ends of the supply chain. They have visibility from the beginning of their supply chains to the end, enabling them to make crucial cost and volume adjustments before it is too late. They wield this flexibility as a crucial competitive advantage.

Nobody does it better than Wal-Mart. Well before it was fashionable, Sam Walton was sharing sales data with his extensive army of vendors. Now the company he founded has far-reaching links to 7,000 of them allowing information on the sale of thousands of items to flow from a Wal-Mart cash register to a vendor warehouse almost instantaneously. While some retailers view such information as top-secret and hold onto it jealously, Wal-Mart considers these vendor relationships crucial to its own profitability. Integrating its operations with its vendors ensures that everybody has the information they need to more efficiently run their businesses. Instantaneous information flow and just-in-time delivery systems allow goods to move into the stores when and where they are needed. The increased visibility allows merchandisers to price those products as profitably as possible. That means less excess inventory in the supply chain and more efficiency overall. Analysts estimate the system gives Wal-Mart a 5 percent to 10 percent cost-of-goods advantage over its retail rivals.

If all this makes working with Wal-Mart sound easy, it is not. As Mattel CIO Joseph R. Eckroth Jr. told *Computerworld* magazine last fall, ''being a supplier to Wal-Mart is a two-edged sword. They're a phenomenal channel but a tough customer. They demand excellence.'' Eckroth is also quick to point out, however, that Mattel has learned a lot from the discipline of its massive channel partner. Having seen the benefit of forging close ties to Wal-Mart, it has sought similar relationships with all its major customers around the world. That has led to a dramatically better feel for the sales pace of a given toy, which in turn improves decision-making when it comes to ramping up production or slowing it down – expensive choices for any business. ''The theme for the future is that there can be a symbiotic relationship between companies'', Eckroth says.

The bottom line is that Mattel's strong ties with both suppliers and customers makes it a stronger, more flexible company. Consider what happened during the West Coast port strike a year ago. Given that Mattel manufactures most of its products in Asia, the company was particularly vulnerable to a strike. Yet a robust supply chain allowed it to avoid what could have been a crippling slowdown. With a strike in the offing, it worked closely with customers to gauge their needs for the upcoming holiday season so it could respond early and make contingency plans. Meanwhile, Mattel turned to suppliers with plans to increase purchases and stockpile inventory before the strike occurred. It also shifted inventory to warehouses in Canada and Latin America and even arranged with suppliers to have its containers of goods coming into West Coast ports placed on top of ships so they could be unloaded first. Despite its best efforts,

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Mattel did have approximately $100 million in inventory tied up at the port during the strike. But it still kept disruption to a minimum and managed to post strong sales and earnings during the fourth quarter.

Not all parts are created equal

A sure-fire sign that your supply chain is unhooked is when everything flows through your channels in the same way: all vendors deliver on the same terms; every item is stocked in every distribution center. Best practice means creating and managing multiple supply chains. It also means having options.

Supply-chain design is generally a tradeoff between several key factors: the cost of carrying inventory, the cost of transporting it, your ability to forecast demand, and customer expectations for fast service. Paper, for instance, is cheap to carry since it lasts a long time, expensive to move around since it weighs a lot, demand is fairly predictable and customers will wait two weeks to get a shipment. Consequently, most paper companies scatter distribution centers around the country to minimize transportation costs to the customer. Digital cameras, on the other hand, are expensive to carry, relatively cheap to transport, hard to forecast, but retailers cannot afford to be out of stock. This requires the opposite approach: a single, centrally located distribution facility and the use of express parcel freight to zip product where it is needed, often at the very last minute.

This seems straightforward until you realize many companies have both types of inventory – and usually many more. Think of a company as multifaceted as Sony. On the one hand, it sells big, heavy TV sets. On the other, it makes small, expensive digital cameras. It has music CDs which may turn rapidly (as in the case of big hits) or much more slowly (an old John Denver album). The mistake too many companies make is to handle all their goods the same way and to waste money moving everything through a common-denominator supply chain. In the case of a company like Sony, a wealth of value can be unlocked if managers think strategically. They have to segment their markets and provide different handling solutions to optimize a product's unique economics. Anything less is a missed opportunity.

Speeding ahead

Supply chain is a real source of competitive advantage, as the industry leaders have proven. They continue to prove it: they are accelerating so fast that they may never be caught. So who has a chance to catch up? Executives who understand that profitable supply chain management depends on data and strategic business relationships, not instinct.

Keywords:

Supply chain management, Competitive advantage