

# The Achilles' Heel of Supply Chain Management

by Ananth Raman, Nicole DeHoratius, and Zeynep Ton



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Point-of-sale scanners and electronic inventory systems were supposed to revolutionize supply chains by connecting manufacturing directly to consumers. But there's a big problem: bad data.

*by Ananth Raman, Nicole DeHoratius, and Zeynep Ton*

Ever since retailers equipped their cash registers with bar code scanners, we've been promised a brave new world of supply chain management. Stores would automatically track the flow of goods and electronically transmit precise replenishment orders. Suppliers would synchronize their production

schedules to real-time demand data. Fewer goods would sit around in warehouses; fewer customers would find products out of stock.

It's a great vision, and one that may still come to pass. But to get there, retailers will have to clean up their act. In an in-depth study of 35 leading retailers,

we were dismayed to discover that the data at the heart of supply chain management are often wildly inaccurate.

The executives at one company with a reputation for expert data handling estimated that their data were "99% accurate." Physical audits, however, showed that inventory levels were way off the mark for two-thirds of the stores' stock-keeping units, or SKUs. We estimate that those errors reduced the company's overall profits by 10% through unnecessary inventory carrying costs and lost sales from out-of-stock items, or stockouts.

Even when a store's inventory information is technically correct, it may still suffer from bad data because employees routinely put products in the wrong

places. Another well-regarded retail chain found that 16% of its in-stock SKUs were reported as stockouts when customers asked for them at the help desk. In fact, however, the items were available; they had just been misplaced in a storage area or on the selling floor. We estimate that the problem of “phantom stockouts” cut this company’s profitability by a whopping 25%.

Why are the data so inaccurate? Some of the problem can be traced to human nature. Think about how clerks behave at cash registers. If a customer is buying peach, orange, and strawberry yogurts at the same price, the clerk often swipes one of the yogurts—say, peach—three times. As a result, the store’s inventory system says the peach yogurts are down by three and the others are unchanged. Managers routinely exacerbate this problem by tracking checkout clerks’ speed but not their accuracy. Indeed, most stores adopted scanners primarily to save on labor costs, not to gain better data.

Some of the blame must also go to retailers’ distribution centers. When one retailer audited every item on hand at a new store, it found that the inventory system had the wrong quantities for 29% of the SKUs, with an average deviation from actual supplies of 25%. The pickers in the company’s distribution center had simply been sloppy in assembling the store’s mix of SKUs.

Here again, management practices exacerbated the problem. We found that error rates on items received directly from manufacturers were substantially lower than on items received through company distribution centers. Why? To minimize paperwork and auditing expenses on goods transferred within the company, the retailer had discouraged store managers from getting credit



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### The problem of “phantom stockouts” cut one company’s profitability by a whopping 25%.

from distribution centers for items shipped in error that cost less than a certain amount. As a result, the managers weren’t motivated to carefully check the accuracy of deliveries from the distribution centers. Since they could receive credit for manufacturers’ errors, however, they checked those shipments meticulously.

Unfortunately, the one activity that can help stores improve their data accuracy—the periodic auditing of inventory—is usually done for a very different purpose. Most stores perform audits solely for financial reasons, to measure the “shrink” of goods that have been lost

or pilfered. That means they measure inventory by dollar value, not by item. If the audit shows that the total value of the inventory is approximately the same as what the system says, managers are happy—even if the actual mix of SKUs differs greatly.

Rewarding speedy checkouts, reducing paperwork, and checking inventory value are laudable goals, but they all inadvertently undermine the accuracy of supply chain data. Before the problem can be solved, executives need to understand how their actions and policies can distort the data. That alone is a major step, as executives often have little sense of the severity of the problem. Many of the executives at the retail chains we studied, for example, were shocked by our findings. Only when companies realize the extent of the problem—and its effect on profits—will they begin to rethink their practices.

Additionally, executives can improve inventory reporting in their companies by actually using the data for important decisions. There’s a chicken-and-egg problem here: as long as inventory data aren’t being collected for anything important, store managers won’t be

under pressure to improve their data quality, but until the quality improves, retailers and their suppliers will hesitate to rely on the data. The data can get better: within the same retail chain, some stores had much lower error rates than others. It’s time for a concerted effort to bring on the future. ▢

*Ananth Raman, a professor at Harvard Business School in Boston, is the coauthor of “Rocket Science Retailing Is Almost Here—Are You Ready?” (HBR July–August 2000). Nicole DeHoratius and Zeynep Ton are doctoral candidates at HBS.*

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