

LOGISTICS – ENGLISH II

Wal-Mart Used Technology to Become Supply Chain Leader

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“Two IBM 370-148 computers record performance of each store daily,” Wal-Mart bragged in its 1979 annual report.

It is hard to talk about supply chain management without mentioning Wal-Mart.

In its relentless pursuit of low consumer prices, Wal-Mart embraced technology to become an innovator in the way stores track inventory and restock their shelves, cutting costs and passing the savings along to customers. In the process the company became synonymous with the concept of successful supply chain management.

“I don’t believe there is a university in the world that doesn’t talk about Wal-Mart and the supply chain,” said James Crowell, director of the Supply Chain Management Research Center at the Walton College of Business. “They are just so well respected because they

do it so well, and certainly I know a lot of peer institutions around our country ... will bring a Wal-Mart guest to speak.”

From ancient times through two world wars to today’s global market, the logistics of supply chain management have challenged any enterprise that tries to move goods and materials a long way in a timely manner. A break in the supply chain leading to a dearth of food or ammunition could spell disaster for an army on the move. For consumers and businesses, a supply chain breakdown means empty shelves and a loss of revenue.

Through a combination of distribution practices, truck fleet management and technological innovations, Wal-Mart not only became the model of supply chain efficiency and used it to become the largest retailer and private sector employer in the world.

Even the U.S. military noticed. Army Col. Vernon L. Beatty, who commanded the Defense Distribution Depot in Kuwait, spent a year with Wal-Mart as part of the military’s Training With Industry program.

“Supply chain management is moving the right items to the right customer at the right time by the most efficient means,” Beatty said in article about his experience. “No one does that better than Wal-Mart.”

Fewer Links

Wal-Mart’s supply chain innovation began with the company removing a few of the chain’s links.

In the 1980s Wal-Mart began working directly with manufacturers to cut costs and more efficiently manage the supply chain. From 1993 to 2001, Wal-Mart grew from doing \$1 billion in business a week to \$1 billion every 36 hours, growth that was attributed as much to supply chain management as to customer service.

Last year, Wal-Mart sold \$1.22 billion worth of merchandise every day.

Under a Wal-Mart’s supply chain initiative called VMI — vendor managed inventory — manufacturers became responsible for managing their products in Wal-Mart’s warehouses. As a result, Wal-Mart could expect close to 100 percent order fulfillment on merchandise.

Wal-Mart streamlined supply chain management by constructing communication and relationship networks with suppliers to improve material flow with lower inventories. The network of global suppliers, warehouses and retail stores has been described as behaving almost like a single firm.

“Wal-Mart’s whole thing was collaboration,” Crowell said. “That’s a big part of what made them so successful.”

Even in its early years, Wal-Mart's supply chain management contributed to its success. Founder Sam Walton, who owned several Ben Franklin franchise stores before opening the first Wal-Mart in Rogers in 1962, selectively purchased bulk merchandise and transported it directly to his stores.

In 1989 Wal-Mart was named Retailer of the Decade, with distribution costs estimated at a mere 1.7 percent of its cost of sales — far superior to competitors like Kmart (3.5 percent) and Sears (5 percent).

The company's supply chain has only become more effective since then.

Wal-Mart developed the concept of “cross docking,” or direct transfers from inbound or outbound truck trailers without extra storage. The company's truck fleet and corps of non-unionized drivers continuously deliver goods to distribution centers (located an average 130 miles from the store), where they are stored, repackaged and distributed without sitting in inventory.

Goods will cross from one loading dock to another, usually in 24 hours or less, and company trucks that would otherwise return empty “back haul” unsold merchandise.

Collaboration

Companies within the supply chain synchronize their demand projections under a collaborative planning, forecasting and replenishment scheme, and every link in the chain is connected through technology that includes a central database, store-level point-of-sale systems and a satellite network.

Wal-Mart implemented the first companywide use of Universal Product Code bar codes, in which store level information was immediately collected and analyzed, and the company devised Retail Link, a mammoth Bentonville database. Through a global satellite system, Retail Link is connected to analysts who forecast supplier demands to the supplier network, which displays real-time sales data from cash registers and to Wal-Mart's distribution centers.

“The big piece of supply chain management is Wal-Mart has the retail link,” Crowell said, “the information from point-of-sale data, the cash register, that they put into their system and share with all their partners.

“What makes that so innovative is at one time a lot of companies weren't sharing that. In fact, they were using third parties where they had to pay for that information.”

Wal-Mart's approach meant frequent, informal cooperation among stores, distribution centers and suppliers and less centralized control. Furthermore, the company's supply chain, by tracking customer purchases and demand, allows consumers to effectively pull merchandise to stores rather than having the company push goods onto shelves.

In recent years Wal-Mart has used radio frequency identification tags (RFID), which use numerical codes that can be scanned from a distance to track pallets of merchandise moving along the supply chain. Even more recently the company has begun using smart tags, read by a handheld scanner, that allow employees to quickly learn which items need to be replaced so that shelves are consistently stocked and inventory is closely watched.

RFID and smart tags are just the next generation in supply chain innovation that dates back to the 1960s, when Sam Walton personally attended an IBM school in upstate New York with the intention of landing experts to computerize operations.

Wal-Mart reaps the benefits of its supply chain management in time saved, faster inventory turnover, increased warehouse space and accurate forecasting of inventory levels.

“They really understand that if I’m going to build some stores and build some distribution centers, how am I going to service them?” Crowell said. “If you look at some of their competitors, sometimes they would put a store in and then think, ‘How am I going to service it?’”

TAGGED: [James Crowell](#), [Supply Chain Management Research Center](#), [walton college of business](#), [VMI](#), [Vendor Managed Inventory](#), [Sam Walton](#), [UPC](#), [Universal Product Code](#), [bar codes](#), [RFID](#), [Wal-Mart](#), [Wal-Mart Stores Inc.](#), [RFID technology](#)