Industry Profile

Wal-Mart Stores, Inc. competes in the retail industry through running a large chain of discount department stores across the United States and beyond. Wal-Mart is a powerhouse and leads the retail industry in terms of sales. In 2009, the total sales in the retail industry, including food and automotive) netted $4.475 trillion (Farfan). In the United States, the discount department store industry includes about 5,000 stores with a combined annual revenue of $130 billion (“Hoovers”). Wal-Mart’s income in as of January 31, 2010 was $14.3 billion (“Wal-Mart”). Other major players of the discount department store industry include Target, Kmart and Shopko.

Discount department stores carry a wide range of merchandise. Because of its diverse inventory, discount stores compete with many retailers, from other discount stores that sell many products to specialty retailers that sell only certain products. On average, a discount store’s largest inventories are: apparel (20%), personal care products (15%), groceries (7%), and toys (6%) (“Hoovers”). Discount retailers aim to provide a “one-stop shopping center” with the lowest prices in a supercenter format. They are usually stand-alone or anchors on a shopping mall strip. The average discount department store is 100,000 square feet (“Hoovers”).

Large chain stores like Wal-Mart dominate the retail market. Their success is due to their sheer size. Businesses like Wal-Mart are able to leverage low operating and purchasing costs. Wal-Mart is able to buy merchandise in high volumes, which leads to lower prices (“Hoovers”). These high volumes are beneficial to both Wal-Mart and their suppliers, so they can establish good relationships and negotiate better prices for future purchases. Thus, they are able to offer everyday low prices unlike small specialty retailers.

The competitive landscape of the discount retailing industry is an interesting one. Through the Porter Model, it is understood that Wal-Mart is in good standing within the industry. Wal-Mart, Target, and Kmart are the three biggest players, with Wal-Mart leading the pack by a wide margin. These players pose a medium threat to Wal-Mart. The only established company that comes close is Target, who had seen growth in their domestic markets. Even then, Target’s 2010 net income of $2.2 billion pales in comparison to Wal-Mart’s monstrous $14.3 billion (“Wal-Mart”). With regards to new entrants, the barriers of entry are pretty high in the discount retailing industry. Because of Wal-Mart’s size and inventory volume, it can negotiate better agreements and pass these savings onto their customers. New retailers entering the market will not be able to bargain with suppliers to get the deals that Wal-Mart has. Aside from this cost advantage, Wal-Mart has the brand name, financial capital, locations, and outstanding distribution systems to combat its competitors (Dibrell).

Suppliers have low to medium pressure on Wal-Mart. The company controls a huge market share, so they have a lot more bargaining power than smaller retailers. They do a lot business to manufacturers and wholesalers, so they can threaten to switch retailers if they do not get a price that they like. Wal-Mart does deal with larger suppliers like Proctor and Gamble, and they have more bargaining power on their side than the smaller suppliers. However, Wal-Mart has been known to be ruthless and relentless in bargaining for the lowest prices, even against the bigger suppliers (Chandran). Another possibility to diminish supplier power would be to fully integrate its systems vertically. Wal-Mart has already starting doing this, as 40% of products sold in the stores are private label store brands (“Wal-Mart”). These products are found in almost every category from groceries to apparel.

Buyers have relatively low pressure on Wal-Mart. Since the company controls so much of the market share, the individual buyer has very little to no pressure on Wal-Mart. There are many consumer advocate groups that have complained against Wal-Mart’s business practices on how they profit from sweatshop labor (Dibrell). This may cause more socially-conscientious consumers to shop elsewhere. Other consumers can also shop at another retailer with similar products at comparable prices, but the convenience of a superstore would be lost. There are not many retailers that can provide what Wal-Mart can. Therefore, substitutes have low pressure on Wal-Mart. There are a plethora of specialty retailers that offers the same products, but the prices will be higher because they do not have Wal-Mart’s incredible bargaining power. Online shopping might be a substitute because online retailers do not require a storefront, so savings will be passed onto the customer. However, Wal-Mart also offers online shopping at the same low prices as its physical stores, and with inexpensive shipping or even free shipping if the customer picks up their merchandise from the store through the Site-to-Store option.

According to the Porter Model, Wal-Mart is in great shape, but it needs to maintain strong supply chain management to stay that way. The profitability of discount retailers depends on effective merchandising and competitive pricing. They achieve this goal with technology. This includes the implementation of point-of-sales
systems (POS), automated distribution centers, and computerized inventory management systems (“Hoovers”). These systems organize and categorize inventory much faster and in a more efficient manner. Time is money, so companies save a lot of money when they use these technologies to move merchandise from the suppliers all the way to the store shelves. Companies like Wal-Mart use handheld scanners, bar codes, and radio frequency identification (RFID) tags to track inventory movement electronically (“Hoovers”). Because of the need for efficiency within the networks of the suppliers and the storefronts, the discount retailing industry is known to be the pioneer of effective supply chain management.

Porter’s Five Forces Model

Potential Entrants
- Medium pressure
- Grocers could enter the retail side.
- Wal-Mart has cost advantage over others.
- High barriers to entry because Wal-Mart is well established.

Suppliers
- Low to medium pressure
- Wal-Mart has a huge market share, so it has a lot of power over wholesalers.
- Has less power over larger supplies like Coca-Cola.
- Potential for vertical integration.

Industry Rivalry
- Medium pressure
- Firms in the same market include: Kmart, Target, and Shopko.
- Target poses the greatest threat, as it has seen tremendous growth in its domestic markets.

Buyers
- Low pressure
- Individual consumers have little to no pressure on Wal-Mart.
- Consumer advocate groups have complained about their pricing strategy and worker compensation.

Substitutes
- Low pressure
- There are not many stores that offer convenience and low pricing like Wal-Mart.
- Online stores can pass savings on to customers since it does not require a physical storefront.

Source: (Dibrell)
Company Profile

Wal-Mart was founded by Sam Walton in 1962 in Rogers, Arkansas. Walton believed in 3 principles: customer value and service, partnership with its associates and community involvement. Using these 3 principals, he started one of the most successful businesses in the world.

Currently Wal-Mart is the world’s largest retailer with about “2.1 million employees in more than 8,400 stores, including about 800 discount stores, 3,100 combination discount and grocery stores, and 595 Sam’s Club warehouses” (“Wal-Mart Stores, Inc. Company Profile - Yahoo! Finance.”). 25% of Wal-Mart's sales comes from its international sector which is also growing at a relatively fast pace; it has become the #1 retailer in Canada and Mexico and it has locations in Asia, Europe, and South America which are all doing well (“Wal-Mart Stores, Inc. Company Profile - Yahoo! Finance.”).

Wal-Mart serves as discount and grocery stores as well as super centers. Because of the way they are supplied and run, Wal-Mart is perfect for mass merchandising. The main feature of Wal-Mart that attracts customers is its versatility. They dominate sales by carrying a wide variety of products ranging from sports products, to office supplies, to clothing apparel, and even groceries. They act as a one stop shop for their customers, and this convenience attracts a lot of today’s on-the-go customers. With everything moving so rapidly, the idea of being able to stop at one place and get everything is very appealing. Also Wal-Mart’s slogan of “everyday low prices” draws in a large crowd itself. Wal-Mart gives customers easy access to quality products at low costs; they do this by containing their costs in a more efficient way. Therefore the customers seem to be saving more (“Wal-Mart Stores, Inc. Company Profile - Yahoo! Finance.”). Wal-Mart is listed on the New York Stock Exchange as WMT. In this past year their figures have been relatively good. For this past year, its average revenue was 408.21B, its Market Cap was 201.63B and its Net Income was 14.3B (“Wal-Mart Stores, Inc. Company Profile - Yahoo! Finance.”).

Throughout the years, Wal-Mart has made many advances in IT in order to maintain its competitive strategy. Below a timeline of some important milestones with regards to the company’s IT strategy:

**Timeline of Important IT Changes at Wal-Mart**

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>Wal-Mart leases an IBM 370/135 computer system to maintain inventory control for all merchandise in the warehouse and distribution centers and to prepare income statements for each store. Electronic cash registers in more than 100 Wal-Mart stores record point-of-sale (POS) data to maintain inventory.</td>
</tr>
<tr>
<td>1977</td>
<td>Wal-Mart creates a companywide computer network and deploys a system for ordering merchandise from suppliers.</td>
</tr>
<tr>
<td>1979</td>
<td>The company builds a computer center and installs the first terminal in a store: an IBM 3774.</td>
</tr>
<tr>
<td>1983</td>
<td>The company begins to use bar codes for scanning POS data.</td>
</tr>
<tr>
<td>1984</td>
<td>Store associates start using Texlon handheld terminals when reordering merchandise. Upon scanning a shelf label, the unit provides a description of the merchandise, information on prior quantities ordered and other data.</td>
</tr>
<tr>
<td>1987</td>
<td>Wal-Mart completes what is at the time the largest private satellite communication system in the United States. It links all operating units of company and headquarters with two-way voice, data and one-way video communication. A check-in system designed to take full advantage of container bar-code labeling is in the back room of every Wal-Mart store.</td>
</tr>
<tr>
<td>1990</td>
<td>A data warehouse prototype is created to store historical sales data.</td>
</tr>
</tbody>
</table>
1992 | Wal-Mart deploys the Retail Link system to strengthen supplier partnerships. The system provides vendors information on sale trends and inventory levels.

1996 | Wal-Mart makes Retail Link and EDI available via the Internet and begins using the Internet as an application platform.

2002 | Wal-Mart and Sam’s Club launch online stores.

2004 | Wal-Mart chooses the Internet for data exchange with thousands of its global suppliers.

2006 | Wal-Mart redesigns Walmart.com, starts experimenting with Web 2.0 and social networking tools, and contracts with Oracle and Hewlett-Packard to use their price-optimization and BI retail applications.

2007 | Wal-Mart launches Site to Store service, enabling online customers to pick up merchandise in stores.

Source: (Wailgum)

**Information Technology**

Wal-Mart always has the leading new technology in the industry that helps them be the most successful discount retailer. Wal-Mart was able to attain leadership status in the retail industry because of its efficient supply chain management practices. The company was able to offer a wide range of products at the lowest costs in the shortest possible time. “This was possible mainly due to two factors – Wal-Mart’s highly automated distribution centers, which significantly reduced shipping costs and time, and its computerized inventory system, which speeded up the checking out time and recording of transactions” (Chandran). The distribution centers made sure there was a consistent and steady flow of products to support the supply function. Sophisticated barcode technology and hand-held computer systems were used, which made managing the center much easier and more economical. The barcode technology gave the employees real-time information about the inventory. The hand-held computer gave the packaging department accurate information about the products to be packed. This helped the company satisfy customer needs quickly and improve the level of efficiency of the distribution center management operations.

**Role of Technology**

![Diagram of technology role](image)

Source: (Weilgum)
An important feature of Wal-Mart’s logistics infrastructure was its fast and responsive transportation system. The company had dedicated truck fleets that shipped goods from the distribution centers to the stores within two days and replenished the store shelves twice a week. To make its distribution process more efficient, Wal-Mart also made use of a logistics technique known as ‘cross-docking’…where the finished goods were directly picked up from the manufacturing plant of a supplier, sorted out and then directly supplied to the customers (Chandran). This system lessened the amount of handling and storage of finished goods. "Wal-Mart invested heavily in IT and communications systems to effectively track sales and merchandise inventories in stores across the country" (Chandran). Wal-Mart set up its own satellite system where technicians could talk on the phone to any store that might be having problems and Sam Walton could see how any store is doing on that day.

Wal-Mart was able to reduce unproductive inventory by allowing stores to manage their own stocks, reducing pack sizes across many product categories, and timely price markdowns. Instead of cutting inventory across the board, Wal-Mart made full use of its IT capabilities to make more inventories available by providing items that customers wanted most, while reducing the overall inventory levels” (Chandran). Wal-Mart also networked its suppliers through computers. Wal-Mart collaborated with P&G to maintain the inventory in stores and other distribution centers. This collaboration helped both companies because Wal-Mart could monitor its stock levels in the stores constantly and identify the items that were moving fast and P&G could lower its costs and pass on some of the savings to Wal-Mart due to better coordination.

Source: (Chandran)

Employees at the stores had the “Magic Wand”, a hand-held computer which was linked to in-store terminals through a radio frequency network. These helped them to keep track of the inventory in stores, deliveries and backup merchandise in stock at the distribution centers” (Chandran). Point-of-Sales (POS) systems helped the execution of order management and store replenishment of goods. This system monitored and tracked the sales and merchandise stock levels on the store shelves. Wal-Mart used a centralized inventory data system so that the workers at the stores could find out the level of inventories and the location of each product at any given time, and when the item arrived at the store, the system would immediately be updated.

Wal-Mart also made use of bar coding and radio frequency technology to manage its inventories” (Chandran). Bar codes and fixed optical readers helped direct the goods to the appropriate dock from where they were loaded on to trucks for shipment. “Bar coding devices enabled efficient picking, receiving and proper inventory control of the appropriate goods,…easy order packing and physical counting of the inventories”
(Chandran). In 1991, Wal-Mart built a retail link system that enabled more than 10,000 Wal-Mart retail suppliers to monitor the sales of their goods at stores and replenish inventories. “Wal-Mart owned the largest and most sophisticated computer system in the private sector. The company used Massively Parallel Processor (MPP) to track the movement of goods and stock levels” (Chandran). Wal-Mart was successful in providing uninterrupted service to its customers, suppliers, stockholders, and trading partners by making effective use of computers in all the company’s operations. Its efficient supply chain management system created benefits including “reduction in lead time, faster inventory turnover, accurate forecasting of inventory levels, increased warehouse space, reduction in safety stock, and better working capital utilization” (Chandran). It also resulted in increased efficiency in operations and better customer service.

Then in 2004, Wal-Mart had new projects like the “radio-frequency identification initiative, revamping supply-chain processes, synchronizing product data with suppliers using the UCCnet standard, improving E-commerce platforms, and developing talent and fostering regulatory compliance in stores across the globe” (Sullivan). Wal-Mart does mostly all its IT projects from its own Information System Division which “manages the work from programming to process reengineering, relying very little on commercial software and not at all on outsourcing” (Sullivan). This allows them to do things much faster than other companies. The RFID initiative solves the decades-old problem of making sure the products customers want are not only in the store but on the shelves. In the past, locating a case in the back room would take days, but with RFID it would only take minutes. RFID tags on cases and pallets are read when inventory enters the stockroom, when those cases go to the floor, and when empty cases go to the compactor. It will help not only its sales but also those of its suppliers.

“Much of the data collected during RFID reads will be passed on to Retail Link, Wal-Mart’s web-based software that lets the retailer’s buyers and some 30,000 suppliers check inventory, sales, and more. The company is developing software for Retail Link that will leverage that data and trigger a business process – for example, initiating a purchase order. The use of RFID can dramatically improve suppliers’ in-stock positions” (Sullivan). An important part of the RFID effort is “global data synchronization that enables communications with the industry-standard EPCglobal registry so that accurately described and consistent product information is exchanged between trading partners” (Sullivan). RFID can give benefits across the supply chain as Wal-Mart tried to collaborate with its competitors to make the technology easier for suppliers to adopt. Wal-Mart captures all the day’s sales and product data from all its global operations on an hourly basis. That ability especially helps on busy days like “the Friday after Thanksgiving when Wal-Mart buyers start watching what’s happening in stores at 6 a.m., then use that data to make decisions in real time that can affect the big day’s sales” (Sullivan).

**Basket Analysis**

Market basket analysis helps identify customer purchasing habits. It helps the company get some insight into what products are in the customer’s “basket”, or in other words it helps the company keep track of what items customers are buying. The market basket analysis is often used to track all orders associated with one customer. It helps provide the company with the means to create “cross selling propositions” such as which product combinations are bought, when they are purchased, and what sequence are they purchased in ("Market Basket Analysis."). It also helps in deciding the location and promotion of goods inside a store ("Data Mining: Market Basket Analysis."). The market basket analysis helps businesses to encourage customers to buy items that, if placed differently, may have been overlooked ("Market Basket Analysis."). The market basket analysis also helps the company group products together that previous customers have often times bought together. In doing this, they are encouraging the customers to buy more products than they needed, simply because of placement, and therefore increasing the basket value. This set of items that the customer buys is called an itemset ("Data Mining: Market Basket Analysis.").

There is also differential market basket analysis. In this, the company compares their results more widely, among different stores, customers in different demographics, different days of the week and even different seasons. They observe and compare buying trends due to the placement of their products; they may find that one technique works at certain locations and not others. Keeping track of these differences may help the company to improve company sales ("Data Mining: Market Basket Analysis.").
Last year Wal-Mart cut down on certain items in the store so as to reduce their costs. However after getting rid of them they found it had a negative effect on their sales for that year; sales went down by 1.6 percent in the fourth quarter alone. They found that after removing the items, their customers were turning to competitors for a wider selection (Maller). The reason that cutting the products led Wal-Mart to failure was because they ignored the market basket effect. The problem was not that they got rid of the products, but the fact that they got rid of the wrong products. They did not use the market basket effect to help understand the product associations and the customers’ buying patterns. For example, “low frequency items can be profitable and may be often bought with other low frequency items. If you cut one of these products, you will lose the customer (Maller). However, there are products that are bought in low frequency and in just one item baskets. These are usually low margin, high capital utilization products and can be easily identified with customer buying patterns analytics (Maller).

The market basket analysis is an integral part of how businesses improve sales today. They require simple computations, can be undirected, and it allows different data forms to be analyzed, which all come together to help lead the company in a positive direction. Below is an example of what market based analysis may look like:

<table>
<thead>
<tr>
<th>Purchases</th>
<th>Product (A)</th>
<th>Product (B)</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>904</td>
<td>Post-it® Note Page Markers</td>
<td>5 Star Re-Move Notes Cube</td>
<td>1,509</td>
</tr>
<tr>
<td>685</td>
<td>Collins 2009 Manager Diary Week</td>
<td>ClipboardRounded A4</td>
<td>1,078</td>
</tr>
<tr>
<td>973</td>
<td>Economy White Copier A4 80gsm</td>
<td>At-a-Glance 2009 Wall Calendar Monthly</td>
<td>1,022</td>
</tr>
<tr>
<td>663</td>
<td>Canon PIXMA Pro9000 Colour Inkjet Printer</td>
<td>Canon Inkjet Cartridge CU-88K Black</td>
<td>988</td>
</tr>
<tr>
<td>468</td>
<td>5 Star Foolscap Letter Tray</td>
<td>Post-it® Index Flags</td>
<td>892</td>
</tr>
<tr>
<td>822</td>
<td>Laminating Pouches A4</td>
<td>Stabilo Boss Highlighters</td>
<td>886</td>
</tr>
<tr>
<td>358</td>
<td>Canon PIXMA Pro9000 Colour Inkjet Printer</td>
<td>Photo Quality Inkjet Paper A4 - Semi-gloss</td>
<td>553</td>
</tr>
<tr>
<td>88</td>
<td>HP PhotoSmart Pro B9180 Colour Inkjet Printer</td>
<td>White Business Cards - Smooth Edge</td>
<td>538</td>
</tr>
<tr>
<td>911</td>
<td>HP PhotoSmart Pro B9180 Colour Inkjet Printer</td>
<td>Hewlett Packard No.70 Red &amp; Matte Black</td>
<td>511</td>
</tr>
<tr>
<td>867</td>
<td>Conqueror Prestige Paper Wove Finish 100gsm</td>
<td>Media Laser Labels CD/DVD</td>
<td>502</td>
</tr>
</tbody>
</table>

Source: (“Market Basket Analysis”)

**Trajectory**

Wal-Mart is faring well as the most dominant player in the discount department store industry. The company’s supply chain management is top notch, and at this rate Wal-Mart should expect expansion and growth in sales. Wal-Mart’s huge success is due to its efficient IT and supply chain. Wal-Mart follows a solid proven IT formula that results in high profits. However, some critics say that their legacy systems will fall short as its competitors start implementing new technology (McKendrick). The business world is constantly changing, and in order to remain competitive, Wal-Mart must adapt to these environmental changes.

The company maintains a very centralized IT structure. This can be beneficial, as Wal-Mart has the ability to maintain strong control of its networks and have all of its data readily available. However, a centralized IT structure overrides local store decision-making and creates an overreliance of home-grown IT systems (McKendrick). Wal-Mart faced mild problems from 2005 to 2007 because their competitors’ IT strategy was getting better because they implemented better systems.
Wal-Mart should consider integrating a service-oriented architecture (SOA) because it links their networks together, but provides extensibility since it is loosely coupled. The individual stores have more control over the supply chain, which is good because there is more interoperability in the network. Wal-Mart’s success can be greatly enhanced with effective information exchange, reusability, and composability, which SOA can provide to the company. Wal-Mart is an enormous company, so a very centralized structure may not be as beneficial as the IT managers may think. The company could invest in building SOA systems in medium-sized regions where it controls a certain amount of stores. This would unite Wal-Mart’s applications and resources, while the region/stores maintain some self-governance. Through effective SOA, Wal-Mart would have more efficient distribution and better supply chain management overall.

Managers should also consider analyzing the market basket for an individual store only. Market basket analysis is effective, but consumer taste may vary between different regions. Products that match well in a store in California might not match with customers at all in Utah. Studying the market basket analysis of a single store will lead to better placement of the merchandise, and will in turn increase Wal-Mart’s sales volume.

The business landscape is always changing, so although Wal-Mart would very much like to keep their legacy systems, time and technological advances strongly recommends that they implement a new IT strategy. If Wal-Mart integrates SOA and revamps its market basket analysis, the company will remain a competitive force in the near future.
Works Cited


