

# **Information Technology in Retail Industry**

## **A Study**

<b>Name</b>	<b>Email Id</b>	<b>Phone Number</b>
<b>Ritesh Kala</b>	<b>ritesh.kala@gmail.com</b>	<b>9819523678</b>
<b>Avik Das</b>	<b>avikd@rediffmail.com</b>	<b>9892788137</b>

**Institute: Narsee Monjee Institute of Management Studies, Mumbai (NMIMS)**

## **Information technology in Retail industry**

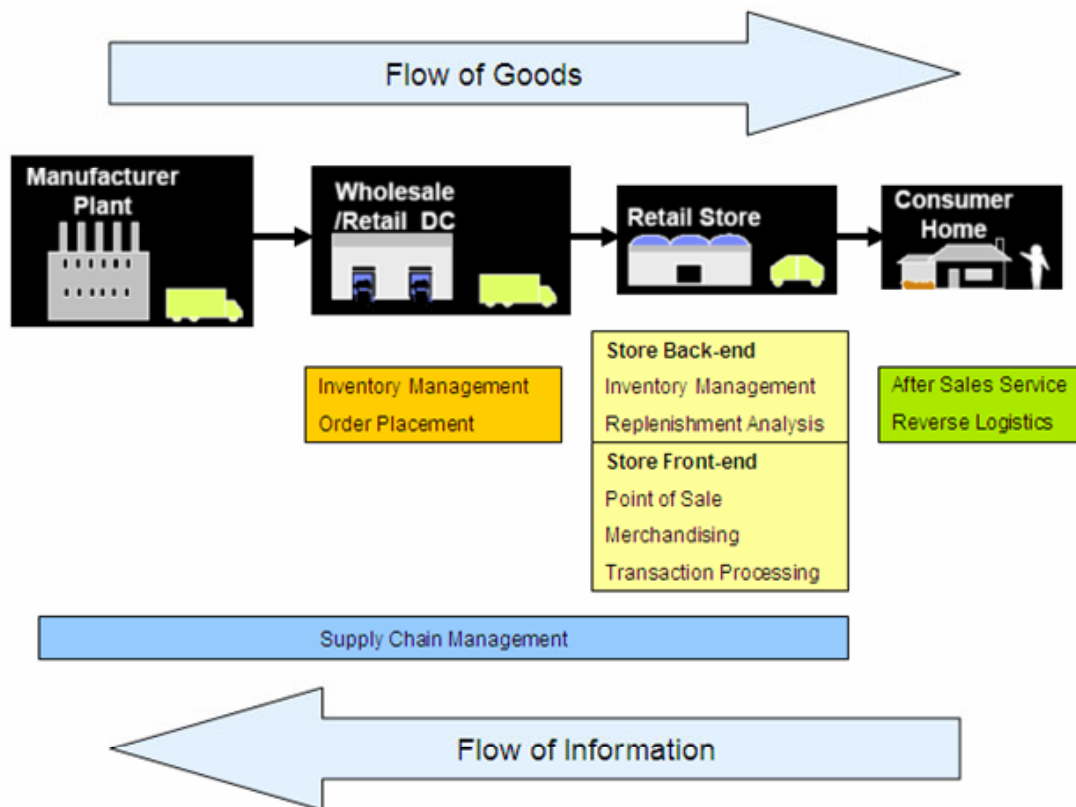
Information technology (IT) promises to impact the retail industry in a big way. A paradigm shift is on the cards in terms of the way retailers approach their business. Efficient management of information from all stakeholders in the business, leveraging technology, has the potential to empower the retailer with the ever-eluding competitive edge. But the pertinent questions retailers ask here are, “Can increasing investments be justified in terms of visible returns? How is this opportunity different from the hyped dotcom bubble, which also incidentally promised to revolutionise the conduct of business?”

The paper evaluates the current scenario to find answers to the above questions.

Our work will approach the topic in the following framework:

1. Is IT really relevant to retail?
2. If yes, then do we have industry examples of successful implementation? What were the tangible/non-tangible benefits accrued?
3. Our recommendation to retailers

## Is IT really relevant to the retail industry?



### Driving Customer Value through IT Adoption

The main impact of IT in the above chain is the improved collection of information. A company investing in IT can expect to reap the following benefits in the above mentioned areas:

#### Supply Chain Management:

- Faster and more accurate flow of information
- Demand driven supply chains
- Reduced investment in 'flow inventory'
- Product diversion capability

#### Inventory Management:

- Reduced inventory levels
- Better information on availability, accessibility and usability of goods
- Reduced material handling and faster transaction processing

### **Order Placement:**

- Trigger events for auto-replenishment of goods
- Lower stock-out costs
- Lowered ordering costs

### **Point of Sale and Merchandising:**

- Faster, more accurate and personalized service
- Better in-store promotions
- More effective discounting schemes
- Provide access to real time data on availability and delivery scheduling
- Helps capitalize on sales opportunities by bringing together their profiles, transaction histories and in-store activities with promotions, stock levels and seasonal events to determine the best way to engage them.

### **Transaction Processing, Billing and Delivery:**

- Providing improved productivity of the transaction processing staff
- transactions faster and more convenient, increasing customer satisfaction and reducing resource costs
- Access to vital information - POS, product, inventory, customer profiles
- Better credit policies through historical analysis of customer payments

### **After Sales Service and Reverse Logistics:**

- Reduced Claims
- More efficient reverse logistics through identification of information regarding faulty batches and corresponding sales
- Better handling of returns – goods that are defective, outdated, or just over-ordered.

## **Industry example in successful implementation**

Having looked at the various opportunities for the application of IT in the retail industry, let us now take a detailed look at how the biggest retailer in the world, Wal-Mart, reaps benefits from investing judiciously in IT.

Analysts attribute Wal-Mart's phenomenal growth to its continued focus on customer needs and reducing costs through efficient supply chain management practices. The company is able to offer a vast range of products at the lowest costs in the shortest possible time. This is possible mainly due to two factors – Wal-Mart's highly automated distribution centers, which significantly reduce shipping costs and time, and its computerized inventory system, which speeds up the checking out time and recording of transactions.

### Managing the Supply Chain

- Procurement and Distribution
  - The distribution centers ensure a steady and consistent flow of products to support the supply function.
  - As Wal-Mart uses sophisticated barcode technology and hand-held computer systems, managing the center is easier and more economical.
  - Every employee has an access to real-time information regarding the inventory levels of all the products in the center. They have to just make two scans – one to identify the pallet, and the other to identify the location from where the stock had to be picked up.

- Different barcodes are used to label different products, shelves and bins in a center.
  - The hand-held computer, the 'Magic Wand', guides an employee with regard to the location of a particular product. The quantity of the product required from the center is entered into the hand-held computer by the employee and then the computer updates the information on the main server.
  - The hand-held computer also enables the packaging department to get accurate information about the products to be packed. It displays all information about the storage, packaging and shipping of a particular product, thus saving time on unnecessary paperwork.
  - It also enables the center supervisors to monitor their employees closely enabling them to give directions and even guide them even on the move.
  - This enables the company to satisfy customer needs quickly and improve the level of efficiency of the distribution center management operations.
- Inventory Management
    - Wal-Mart invests heavily in IT and communications systems to effectively track sales and merchandise inventories in stores across the country.
    - With the rapid expansion of Wal-Mart stores in the US, it was essential to have a good communication system. Hence, Wal-Mart set up its

own satellite communication system in 1983. Main purpose was real-time monitoring of all outlets.

- 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 makes full use of its IT capabilities to make more inventories available in the case of items that customers wanted most, while reducing the overall inventory levels.
- Wal-Mart also networked its suppliers through computers. The company entered into collaboration with P&G for maintaining the inventory in its stores and built an automated reordering system, which linked all computers between P&G and its stores and other distribution centers.
- This collaboration between Wal-Mart and P&G is a win-win proposition for both because Wal-Mart can monitor its stock levels in the stores constantly and also identify the items that are moving fast. P&G can also lower its costs and passes on some of the savings to Wal-Mart due to better coordination.
- The order management and store replenishment of goods are entirely executed with the help of computers through the Point-of-Sales (POS) system. Through this system, it is possible to monitor and track the sales and merchandise stock levels on the store shelves.

- Wal-Mart also makes use of the sophisticated algorithm system which enables it to forecast the exact quantities of each item to be delivered, based on the inventories in each store. Since the data is accurate, even bulk items could be broken and supplied to the stores.
- Wal-Mart also uses a centralized inventory data system using which the personnel at the stores could find out the level of inventories and the location of each product at any given time. It also shows whether a product is being loaded in the distribution center or is in transit on a truck.
- Once the goods are unloaded at the store, the store is furnished with full stocks of inventories of a particular item and the inventory data system is immediately updated.
- Wal-Mart also makes use of bar coding and radio frequency technology to manage its inventories. Using bar codes and fixed optical readers, the goods could be directed to the appropriate dock, from where they are loaded on to the trucks for shipment. Bar coding devices enables efficient picking, receiving and proper inventory control of the appropriate goods. It also enables easy order packing and physical counting of the inventories.
- In 1991, Wal-Mart had invested approximately \$4 billion to build a retail link system. More than 10,000 Wal-Mart retail suppliers used the retail link system to monitor the sales of their goods at stores and replenish inventories.



- The details of daily transactions, which approximately amounted to more than 10 million per day, were processed through this integrated system and were furnished to every Wal-Mart store by 4 a.m., the next day.
- In October 2001, Wal-Mart tied-up with Atlas Commerce for upgrading the system through the Internet enabled technologies.
- Wal-Mart owns the largest and most sophisticated computer system in the private sector. The company uses Massively Parallel Processor (MPP) computer system to track the movement of goods and stock levels. All information related to sales and inventories are passed on through an advanced satellite communication system.
- To provide back-up in case of a major breakdown or service interruption, the company has an extensive contingency plan.
- By making effective use of computers in all its company's operations, Wal-Mart is successful in providing uninterrupted service to its customers, suppliers, stockholders and trading partners.

## Recommendations to retailers

- Be open to the IT investment option due to the following reasons:
  - It's an important differentiator in increasing competition. If you don't do 'IT' others will and will thereby obtain a crucial competitive edge
  - There is no doubt that the player who manages information best, will be better placed to bring efficiency in all aspects of the business
    - Customer: Preferences, buying patterns and habits
    - Customer support: Tracking customer feedback, servicing
    - Supply chain: Supplier information, competitor's moves and pricing
    - Logistics: Transportation time and status of shipment
    - Inventory: Optimum stock levels, timely refurbishing, floor management
    - Distribution: Transportation time and status of shipment
    - Employees: Enhancing productivity, efficient deployment
- Conduct a thorough feasibility study
  - Tone down expectations from IT to acceptable limits. It is not a medicine for all retail woes.
  - Prioritize the application area.
  - Determine the technologies to be used.
  - Estimate the required investments based on TCO approach.

- Identify the probable cost savings and productivity improvement payoffs within preset timelines.
- Determine the payback period on the investment as well as the project IRR.
- Set a budget for IT spending based on the following basic example

Value	Description	Calculation
A	Annual Sales	Rs. 200 crores
B	Estimate of the average life span of the entire retail information system	5 years
C	Estimate of the percentage of sales the average retailer spends on information technology	1% = 1/100 = 0.01
	<b>Retail System Budget</b>	= A x B x C = Rs. 10 Crores

\* The average retailer currently spends anywhere from 1%-2% of sales on information technology, systems and supplies.

- Determine the allocations of the IT budget

Product/Service Purchases	Percent of Budget
Hardware	50%
Software	20%
Training & Implementation	20%
Supplies & Upgrades	10%
<b>Total Retail System Budget</b>	<b>100%</b>

- Draw out detailed plan for Process re-engineering implementation
  - If this is the retailer's first experiment with IT, it should be ensured that the exercise doesn't just confine itself to automating existing processes. Instead it should enable overall streamlining of existing practices.
  - If the retailer has in place legacy systems, it's necessary that the system be integrated satisfactorily with the latest initiatives.
  - A detail plan should take into account security, privacy and other issues that can surface post-implementation, change in business processes and training efforts required for system users.
- Post implementation analysis
  - The IT system needs to be constantly evaluated after implementation.
  - Measure ROI against estimations done pre-implementation.
  - Plough feedback into a regular maintenance and upgrade mechanism.
  - Consider stepping up/ down investments as per results achieved.
  - Ensure that both the IT system and project management are flexible and scalable.

## **In conclusion**

Our analysis suggests that IT can indeed use efficient information management to streamline the various processes involved in the retail industry. Wal-Mart has been amongst the first movers. It presents an opportunity for those who can invest substantially in IT to gain a definite competitive edge with efficiency enhancements. However lesser players need to weigh carefully the prospective benefits and cost of opportunity of the associated investments before taking the plunge. For e.g. organized Indian retail is merely 2% of the pie. For it to think of investing in IT may be unwarranted. But as major players like Shoppers' Stop spread their reach, they would surely have to use IT to be one up to the competition, in the due course of time.