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EMERGING ROLE OF TECHNOLOGY IN RETAIL SECTOR

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ABSTRACT

Technology in the retailing industry has provided a new dimension. Electronic transactions have increased the volume of sales in the country. Flexibility in the mode of payment and cashless transactions has helped in driving sales. Communication assists in maintaining a competitive advantage in retaining and attracting customers. The introduction of new technology may be intricate for retailers, but the convenience and cost effectiveness create the need for new advancements. Large stores need to monitor inventories and expenses of establishments. With automated machines and high-end computers making the task simpler, the focus of retailers can stay on retaining customers with new strategies. Security systems also do help for a safer shopping, for retailers as well as customers, providing immense mental relief. This paper includes the role of technology in retails sector, recent trends, and opportunities and challenges. It also highlights the challenges faced by the industry in near future.

KEYWORDS

E-retailing, ERP system, Electronic Data Interchange, Supply chain integration.

INTRODUCTION

J ust as any technological breakthrough in any business has a major impact on that sphere of business, of the latest marvel of internet technology too has had a radical impact on retailing around the world. The evolution of the internet, termed as the 'world wide web' (www) is considered to be the greatest gift to mankind and has thrown open a whole new world of services that easily available to customers from this web. Thousands of retail store are already on the web selling from books to groceries and garments to even cars and there is hardly anything that one cannot buy over the web today. In fact one can choose the products and even pay for it on the web itself which is now called 'online retailing'.

The emerging trends are related not to specific functionality or technology, but to the scope of technology. Irrespective of which direction the MIS moves in, certain technological changes are bound to accompany the move. Yet these changes are evolutionary rather than revolutionary. The success of many companies may be related to the way they have improved the operation of their business through investment in technology. Modern technology is transforming the retail environment and has helped many companies expand their operations. The growing interest in data warehouses is part of a trend towards developing methods of assessing the massive volumes of data which retailers typically collect every day.

Data warehousing is one, big-band approach towards doing this but there are many other systems, called Executive Information Systems (EIS), Business Intelligence and Decision Support Systems (DSS). E-retailing is advancing at a rapid rate with retail organizations realizing the growing importance of the sale of products through these new distribution channels. Retailers have increased their use of computerized retail information systems, and the Universal Product Code (UPC) is now the dominant technology for processing product related data. With Electronic Data Interchange (EDI), the computers of retailers and their suppliers regularly exchange information, sometimes through the web. The supply chain is the logistics aspect of a value delivery chain. Many retailers and suppliers are seeking closer logistical relationships. One technique for larger retailers is collaborative planning, forecasting and replenishment (CPFR) – a holistic approach to supply chain management among a network of trading partner.

RETAIL INFORMATION SYSTEMS IN INDIA

Retailing in India, however, is still in its infancy and though is no immediate need for very advanced technological tools in the country, the success of a retailer would definitely depend, to a large extent, on the adoption of a viable integrated retail-specific solution. The retail environment in India is changing rapidly and many analysts are predicting an absolute repeat of performances that have actually taken place in most of the south eastern Asian countries in recent years. Organized retailing is fast becoming a reality in India and it is being made possible only with the adoption of the latest retailing technologies borrowed from the west.

Today, organized retailer are working very closely with their vendors to shorten lead times and thereby reducing inventory costs. They have established highly elaborate online networks within their stores and warehouses, which enables them to obtain up-to-the-minute information. Such retailers are able to dominate the markets in which they operate primarily because of the large volumes of sales that they are able to generate.

Various Information Systems:

- Merchandising system
- Sales and Marketing system
- Point of Sale system
- Financial Accounting system
- Attendance and Payroll

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- Administrative systems

DBMS IN RETAILING SECTOR

The introduction of Database Management Systems has, to a large extent, helped in eliminating this problem all sizes of retailers how have access to a variety of database management tools depending on the magnitude of their operations and their budgets. Retail management has also undergone profound changes in recent years, thus enabling users to easily access their data. It is due to this increasing ease with which managers are informing their decisions with immense databases that retailing around the world has taken on a new dimension, especially since the last decade.

ENTERPRISE RESOURCE PLANNING

Enterprise Resource Planning or ERP is actually a process or approach which attempts to consolidate all of a company's departments and functions into a single computer system that services each department's specific needs. It is, in a sense, a convergence of people, hardware and software into an efficient production, service and delivery system that creates profit for the company. The most often-cited example of an ERP software is customer ordering and delivery where a customer's order moves smoothly from Sales, where the 'deal' is consummated, to Inventory and Warehousing, which retrieves and packages the order for delivery, to Finance, where invoicing, billing and payments are handled, and on to Manufacturing, where replacement of the bought-and-paid-for product is done.

FIGURE 1: RETAIL ERP SYSTEM COMPONENTS
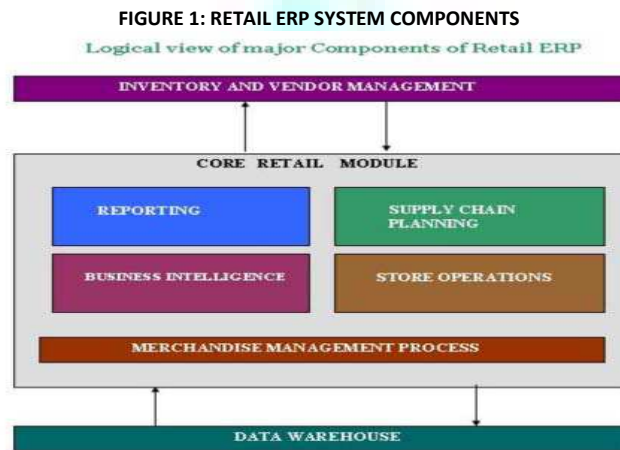
This element of the ERP system allows the retailers to undertake the planning activities at a large as well as a small scale as per the need of the situation. It focuses on the different strategies to be employed in order to help the retail store in increasing the sales of the merchandise. The retail-planning component focuses on achieving the economies of scale and attaining the desired efficiencies by increasing the merchandise sales at the retail chain. This component helps the retailers in planning the various sales and promotional events aimed at boosting or increasing the sales of the merchandise offered at the store. This way, retail planning forms an important and critical component of the retail ERP systems as it performs the critical function of offering the planning activities that may be undertaken at the micro as well as macro level to give a push to the merchandise sales at the retail store.

The retail-planning component is extensively used by the middle and the upper management in formulating favorable promotional strategies to stimulate the sales and ensure increase in inventory turns at the retail store. Hence, retail planning may be called as a critical component of the retail ERP systems.

SWOT ANALYSIS OF RETAIL ERP SYSTEMS

☞ STRENGTHS	☞ WEAKNESSES
• Provides an enterprise wide view of the workflow • Allows integration with systems of associates and business partners • Helps in routine decision making • Allows streamlining of business processes	• Expensive to procure • Requires significant employee training • Compatibility issues with other/legacy systems • Security concerns
☞ OPPORTUNITIES	☞ THREATS
• Booming retail sector in the emerging global markets • The retail sector is overlooked by the major ERP solution providers • High efficiencies becoming critical in the retail sector due to the cut-throat competition and paper-thin margins	• Opposition to globalization and transnational movement of goods • Increasing complexity of such systems • Divided opinion over the Return-On-Investment (ROI) from such tools • Security concerns regarding sharing of data over a network

An ERP system encapsulates diverse business functions such as sales forecasting, merchandising, point of sale distribution, logistics, payroll and accounting, to meet the customer's demands. Such ERP solutions are far more complex to implement than any other solution but in spite of this, many retail organizations around the world have spent several crores on them. It is apparent that the benefits of such a solution far surpass the expenses, as a result of which more and more retailers are getting on to the ERP bandwagon. An ideal ERP solution would address the entire needs of the sector for which it has been designed, right from its merchandising, sales and marketing, to accounting and audit needs, and payroll management and further cover every single aspect of that enterprise.

SUPPLY CHAIN MANAGEMENT

As B2B e-commerce becomes increasingly strategic, the complexity of integrating and collaborating with business partners grows exponentially. Over the past decade, businesses have invested heavily in internally-focused business systems. Today, businesses are extending their enterprise investments by strategically sharing processes with partners to gain competitive advantage. Through the automation of an entire value chain, companies are streamlining cross-enterprise processes, such as price and promotions, global logistics and electronic payments, resulting in greater agility, responsiveness and profitability.

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Although integrating diverse businesses is key to building a successful extended enterprise, the complexities can be daunting. The variety of communications protocols and standards continues to increase. Data structures and data transformation are becoming more sophisticated. Globalization is introducing new trading partners from regions around the world with different local business processes and varying degrees of experience with e-commerce. To unlock the potential of B2B e-commerce and build a successful global extended enterprise, businesses need a partner with innovative and adaptive solutions, broad skills and capabilities, and global reach.

CROSS-ENTERPRISE BUSINESS PROCESSES

Fewer and fewer companies manage the entire manufacturing process from raw material to finished product. Instead, the manufacturing process is distributed across the supply chain with different manufacturers owning the raw material, component, assembly and finished product aspects of the process. As a result, an increasing number of business processes are becoming cross-enterprise, including product design, development, manufacturing, and post-sales service and support. Even planning functions such as promotions, forecasting and marketing are becoming increasingly collaborative.

SPECIFIC CHALLENGES & SPECIFIC SOLUTIONS

Retailers can use Product Information Management (PIM) on the Trading Grid to manage item attribute data and synchronize catalogs with distributors. Price and trade promotions management improves the accuracy of invoicing processes. Retailers and manufacturers can analyze point-of-sale and inventory positions to jointly forecast demand. High tech original equipment manufacturers (OEMs) and component suppliers use Trading Grid to exchange forecast, inventory, logistics and payment transactions with suppliers. The Trading Grid can help to orchestrate an increasingly complex global network of contract manufacturers, customs agencies, logistic providers, and local distributors.

FIGURE 2: THE RETAILING CHALLENGES
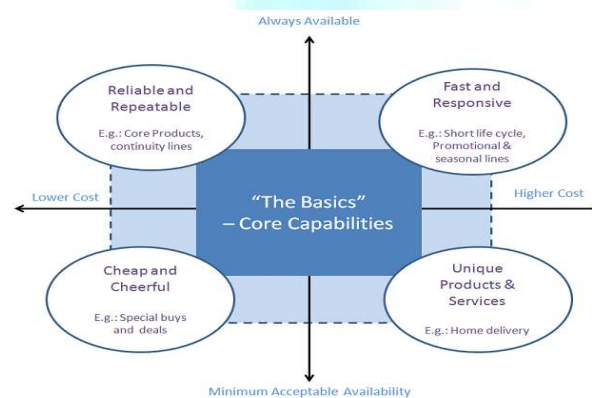
The Supply Chain Planning and Execution Market Service is the premier resource for technology and service providers looking to gain an edge in a highly competitive and dynamic market. With access to industry-leading analysts and thought-provoking written research, clients gain the insight and edge they need to craft winning strategies. By combining a deep understanding of evolving end-user demand factors with unparalleled knowledge of the market for supply chain planning and execution technologies, this service helps technology and service provider executives identify and understand organic and inorganic growth opportunities, assess the competition, and fine-tune the details of go-to-market strategies, including target audiences, product requirements, market and competitive positioning, and marketing messaging.

SCOPE OF COVERAGE

As manufacturers, retailers, distributors, and service providers concentrate more on revenue and profitability growth, supply chain applications have risen in priority. While early supply chain investments were made to make the transactional and product flow of the business more efficient, the demand chains we see today require sophisticated planning and sensing applications integrated with the actual execution of the business. The Supply Chain Planning and Execution Market Service addresses the intersection of business process and technology as it applies to such areas as user adoption, sales effectiveness, customer segmentation, customer profitability, and return on marketing investment. Research coverage extends from strategic user activities like network design, optimization, and analysis to execution activities such as fulfillment, transportation management, global trade management, and mobility spanning the full scope of inter-company collaboration, value chain planning, internal production planning, inventory management, and logistics.
Software markets covered:
* Order fulfillment, including order management and order promising
* Transportation management
* Global trade management, including international trade logistics (ITL)
* Warehouse management

RETAIL FINANCIAL SERVICES AND SOLUTIONS

The retail financial services sector has been a pioneer in outsourcing non-core, and more recently core processes to achieve cost savings in a fiercely competitive business environment. While immediate cost reduction continues to drive the outsourcing decision, financial institutions are now looking for strategic value they can gain from robust, efficient, and flexible operations that are capable of enhancing customer delight. Banks are required to address a set of seemingly contradictory issues - pressure to reduce unit costs as transaction volumes increase, while additional investment is needed to deliver an enhanced customer experience. Currently, the retail financial services industry is faced with: Increasing regulations (accounting, financing and book-keeping) as outsourcing potentially transfers risk, management and compliance to third parties operating offshore Shorter and more complex product lifecycles Increase in the number of channels for communication Increasing customer demands and expectations High staff turnover in contact centers Rapidly advancing technological innovation Increasing competition Changing business models designed to improve how firms attract, service and interact with their customers From process optimization and access to best practices, to tapping into specialist resources.

CREATING AND SUSTAINING HIGH PERFORMANCE

Excellent retail supply chain management revolves around understanding and balancing three key dimensions of availability, inventory and cost. Managing these trade-offs efficiently can result in supply chains that improve business performance and drive competitive advantage. Rapid growth and profitability are clearly linked to an uncompromised approach to supply chain management that has delivered a world class three week "design to shelf" capability and fueled the company's 20 percent annual growth and profit margins. No longer just concerned about cost control, companies view supply chain as a key element of their

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business strategy. Today's supply chain leaders are working with their business partners to design, develop, move, store, sell and service their products with ever greater speed and economy. Now, more than ever, supply chains are regarded as sources of business value and competitive advantage.

CHALLENGES IN SUPPLY CHAIN MANAGEMENT

In view of the diverse business activities, today's supply chain process is very critical for success in current business scenario. Today, the supply chain managers are facing various external challenges driven by customer requirements and intense competition. The major challenges are:

Network Planning – This is one of the most important issues for SCM. Determination of production requirements and inventory levels at the vendor's facility for each product and development of transportation flows between these facilities to the warehouses in a best possible way to reduce total production, inventory and transportation costs with fulfillment of service level requirements.

Supply chain integration and strategic partnering – In SCM, information sharing and operational planning are crucial for successfully integrated supply chain. But the challenges are – what type of information would be shared, and how this information will be used, what level of integration is required and what partnership can be implemented?

IT and Decision Support System– This is another important challenge for SCM. Today, SCM is driven by the scope and opportunities appearing due to abundance of data and the savings which can be achieved through efficient analysis of these data. What data should be transferred with its significance and most importantly, what infrastructure is required internally and between its partners is very important.

Training – It is important for every company, which is implementing SCM. Companies must leverage extensive training to their employees, who are going to use the system. Understanding the market, risk, and spend analysis and applying strategic sourcing methodologies are important.
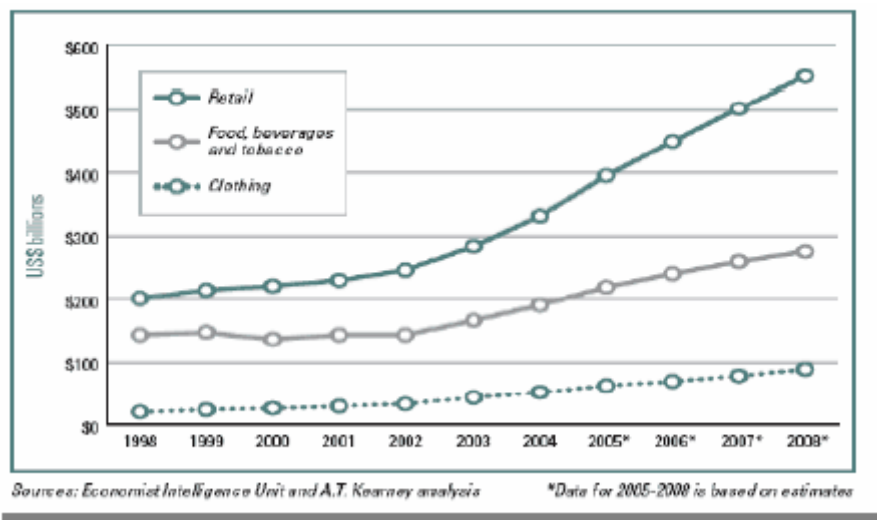
Advanced Technology in Retail Marketing:

The business of retailing is becoming increasingly complex by the day. Companies are multiplying the number of their outlets at a very rapid pace making forays both within their own territory as well as into other countries across the world. Controlling such operations thus becomes n extremely challenging task and technology consequently has a major role to play in the success or failure of a retailer. The larger the retailer is, the greater would be his dependence on technology. The constantly advancing and emerging technologies thus have a dramatic effect on retail operations.

Advanced technology has now enabled retailers to use the most sophisticated point-of-sale systems which not only help in the billing functions but are a major source of information for the entire retail organization. The technology enables all the managers of the retail company to access important information almost up to the minute and consequently to take timely and quick decisions. Many large retailers have even gone a step further by integrating their networks with their vendor's systems through a process called Electronic Data Interchange. EDI is a two way communication tool that enables retailers to place online orders, obtain order status and to make payments to their vendors, while also helping vendors to provide invoices and intimate price changes, which ultimately greatly enhances the efficiency of both the retailer and the vendors.

Retailing is a `technology-intensive' industry. It is quoted that everyday at least 500 gigabytes of data are transmitted via satellite from the 1,200 point-of-sales counters of JC Penney to its corporate headquarters. Successful retailers today work closely with their vendors to predict consumer demand, shorten lead times, reduce inventory holding and thereby, save cost. Wal-Mart pioneered the concept of building a competitive advantage through distribution and information systems in the retailing industry. They introduced two innovative logistics techniques - cross-docking and electronic data interchange.

Today, online systems link point-of-sales terminals to the main office where detailed analyses on sales by item, classification, stores or vendor are carried out online. Besides vendors, the focus of the retailing sector is to develop the link with the consumer. `Data Warehousing' is an established concept in the advanced nations. With the help of `database retailing', information on existing and potential customers is tracked.

Figure-3: Retail Sales in India

Sources: Economist Intelligence Unit and A.T. Kearney analysis   *Data for 2005-2008 is based on estimates

IT transformation is a key factor in achieving high performance for retailers. Accenture can help you streamline information technology to enhance overall performance.

Today's retailers need to transform their IT capabilities for a number of reasons. These include:

- To aggregate and analyze customer data to enhance differentiation.
- To increase a company's ability to respond to a rapidly changing marketplace through enhanced flexibility and speed.
- To operate effectively, retailers need to have one system working across stores (sometimes across national borders) to ensure the most effective use of stock and to support optimized business processes.

As the hype around technology decreases, retailers are seeing clearly that technology's role is one of an enabler, speeding up of processes and delivering cost savings. The retail industry faces specific IT management challenges:

- **Transparency and tracking:** Retailers need greater transparency between systems and better tracking to integrate systems from manufacturer through to consumer to obtain customer and sales information.
- **Customer data:** Information overload is a challenge for retailers because they need to collect and sift through data to convert it into useful information in a customer-centric industry.
- **Global data synchronization:** Enabled by radio frequency identification/electronic product coding, the entire supply chain is becoming more intelligent. This creates what Accenture calls Silent Commerce. Benefits for retailers include enabling the use of real-time data to monitor inventory levels. Radio

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frequency identification tagging also positions the company to better safeguard its shipments by enabling the tracking of products from manufacturer through the supply chain.

Accenture collaborates with companies to meet the need for positive IT management. The goal is to enhance business processes and keep up to date with innovation to become a high-performance business.

CONCLUSION

The technology enables all the managers of the retail company to access important information almost up to the minute and consequently to take timely and quick decisions. The success of many companies may be related to the way they have improved the operation of their business through investment in technology. Modern technology is transforming the retail environment and has helped many companies expand their operations. E-retailing is advancing at a rapid rate with retail organizations realizing the growing importance of the sale of products through these new distribution channels. The larger the retailer is, the greater would be his dependence on technology. The constantly advancing and emerging technologies thus have a dramatic effect on retail operations.

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