

# DEPLOYMENT OF RFID TECHNOLOGY APPLICATIONS IN SILENT COMMERCE ON INDIAN RETAILING - AN OVERVIEW

J. Venkatesh

*Associate Professor*

*Department of Management Studies*

*Anna University Regional Centre Coimbatore*

*Coimbatore – 641 047. Tamil Nadu. India*

*drjvmba@gmail.com*

**Abstract-**This paper affords thorough information about the expansion of RFID retailing business in India. The trade market is a state of exponential expansion. Retailing comprises all activities concerned in selling commodities or services for the final consumer. These actions comprise demand and sales forecasting, inventory administration, store supervision, shipping etc. Information technology is the capacity to electronically input procedure, stock up and productivity, broadcast, and accepts data and information. It plays a very imperative role in today's industry. New technologies progress in transactions is Radio Frequency Identification, Smart Operating Solution Smart Ops, and Point of Sale etc. The consequences specify that, trade intricacy may condense with the help of information technology explanation. The exact explanation can effect in enhanced efficiency and major outlay saving throughout key compensation such as more precise supply chain, forecasting and enhanced inventory management. Information technology also help vendors to resolve major difficulty associated to buyer services like consumer reliability and contentment.

**Keywords:** RFID, retailing, information technology, point of sale, forecasting.

## I. INTRODUCTION

“Retailing includes all the activities involved in selling goods or services directly to final consumer for their personal, non business use”.

Retail is all regarding advertising, advertising big and promoting massive. It is all about guarantying that the buyer first approaches to accumulate and then buys. This also funds that one should attach to the client and ought to be talented to grasp him in one consign and provide him all that he needs from one place. One of the key issues in attaining a planned and resourceful trade development is the use of data as an enabler. Technology has been huge enabler of trade and specially trade project. Information Technology is the key in enabler to civilizing client approval, equipped efficiencies and by conservatory, success. A distinctive pan nationalized trade process would have several local stockrooms, agency and

trade channel. In such an process, how does the headquarters recognize every day income at each of its outlet, how does it identify which products are moving the most in which area at which outlet, how does one store know if a supply out item in its own account is accessible at an additional stock up setting for whom it is slow moving item? Most of these concerns can be resolved by the suitable use of knowledge. Trade has played a key function world over in rising efficiency across a wide variety of buyer commodities and armed forces .The impact can be superlative perceive in countries like U.S.A., U.K., Mexico, Thailand and more recently China. Trade is the second-largest manufacturing in United States both in numeral of establishment and quantity of employees. The trade industry employs more than 22 million Americans and produce more than \$3 trillion in retail sale per annum. Wal-Mart is the world's major trader. Already the world's largest company with over 1 million acquaintances, Wal-Mart transferred oil giant Exxon Mobil as world's largest company when it posted \$219 billion in sales for fiscal 2001. Wal-Mart has turn out to be most thriving trade brand in the world due its capacity to influence volume, market influence, and competence to generate market authority. Wal-Mart start Fortune magazine list of top 500 companies in world.

### A. REACH OF THE INDIAN RETAIL MARKET

The scope of the Indian retail market is vast for this division is suspended for the maximum expansion in next 5 years. The India trade business contributes 10% of the country's GDP and its current growth rate is 8.5%. In Indian retail market the capacity for expansion can be seen from the reality that it is likely to rise to US\$ 608.9 billion in 2010 from US\$ 394 billion in 2007. The planned transaction sector in India is only 3% and is likely to rise to 25- 30% by the year 2010. There are under creation at nearby around 325 departmental stores, 300 new malls, and 1500 supermarkets. This proves that there is a incredible scope for development in Indian retail marketplace. The expansion of scope in Indian retail market is largely due to transformation in the consumer's performance. For new cohort have partiality towards luxury possessions which have been due to strong augment in returns, varying

lifestyle, and demographic pattern which are constructive. The range of the Indian retail market has been seen by many retail giants and that is the cause that many new groups of actors are incoming India retail industry. The major Indian retailers are:

- Pantaloons Retail India Ltd
- Shoppers Stop
- Bata India Ltd
- Music World Entertainment Ltd

Judging the extent for growth in India retail diligence, many inclusive retail giants are also toward the inside Indian retail market. They are: Tesco; Metro AG; Wal-Mart. The range of Indian retail market is very enormous and for it to attain its full prospective the government and Indian retailers will have to create a dogged endeavour.

#### B. *Expansion Aspects In Indian Organized Trade Segment*

The expansion issues in Indian structured segment are a range of but it is primarily because India's financial system is flourishing. In addition, the increase in functioning population, which is little, pay- package, which are immense, more nuclear families in town areas, rise in the quantity of women working, more incidental profits and customer objective, western influence and growth in outlay for magnificence items. All these are the factors for the development in Indian organized trade sector. Many Indian companies have come into trade industry in India and this is also a reason in the development of Indian organized retail sector. Reliance Industries Limited is scheduling to endow US\$ 6 billion in controlled retail sector in India by aperture 1500 supermarkets and 1000 hypermarkets. Bharti Telecoms is setting up a joint venture worth £ 750 million with Tesco a global trade giant. Pantaloons are scheduling to spend US\$ 1 billion in order to augment its retail space to 30 million square feet. Such massive reserves are also a factor in expansion of the planned retail sector in India. Global retail giants are also toward the retail business in India and this is one of the factors in the expansion of the planned retail sector in India. The factors for growth in Indian structured retail sector are many and that's the basis behind its enormous growth. But for this to persist both Indian retailers and government will have to work mutually.

#### C. *Disputes in the Indian Organized Retail Sector*

The challenges in front of Indian structured retail sector are a range of and these are stopping Indian retail business from accomplishment it's full prospective. The performance prototype of Indian consumer has undergone a major transform. These have occurred for Indian buyer is earning more now, western persuade, women working force is escalating, aspiration for luxury items and better quality. He now wants to eat, shop, and get divert under same roof. All these have lead Indian organized retail segment to give more in order to gratify Indian customer. The biggest confront facing Indian ordered retail sector is be deficient in of retail space. With real estate prices increasing due to amplify in command from the Indian organized retail sector, it is posturing a dispute to its growth. With Indian retailers having

to armor out more for trade space it is distressing their overall productivity in retail. Skilled manpower scarcity is a confront facing the ordered retail sector in India. The Indian retailers have intricacy in judgment skilled person and also have to pay further in order to hold them. This again brings down Indian trader profit levels. The Indian government has permitted 51% foreign direct investment in India retail sector to one-brand shops only. This has made way in of international retail giants to planned retail sector in India complicated. This is a dispute being countenance by Indian organized retail sector. But global retail colossal like Tesco, Wal-Mart, and Metro AG are entering organized retail sector in India ultimately through franchisee conformity and cash and carry extensive trading. Many Indian companies are also incoming Indian planned retail sector like Reliance Industries Limited, Pantaloons, and Bharti Telecom. But they are facing stiff struggle from these global retail giants. As a result reduction is attractive a conventional practice. This too brings down earnings of Indian merchant. All these are posturing as dispute facing Indian structured retail sector. The challenges facing Indian structured retail segment are there but it will have to be compact with and only then this sector can flourish.

## II. INFORMATION TECHNOLOGY IMPLICATION RETAILING

Forecasting is the practice of assessment in indefinite situations. It's a vital and very important course in any trade organization. Business leaders and economists are continually involved in process of trying to forecast, or predict, the future of business in the economy. Trade Demand Forecasting: recent demand forecasting systems afford new prospect to pick up trade routine. Although the art of individual trade may never be substitute, it can be amplified by a proficient, goal and methodical approach to forecasting demand. Inventory Management: stock can be any unprocessed materials, refined items already accessible for trade, or goods in practice of being contrived. Stock is recorded as an advantage on a company's balance sheet. To optimize consumption of supply, retailers need to run suspicions, restraint, and intricacy across their global supply chain on constant basis. Stock Management: another instance where Information technology can be valuable is a store management. That alerts out-of-place or stock-out items. A store, commonly a shop or stall for retail sale of supplies, but also a place where extensive materials are kept, exhibited, or sold. A place where incredible is deposited for security is called store.

#### A. *Purpose of Information Technology in Retailing*

The trade market is a state of exponential growth. Trade comprises all actions implicated in advertising goods or services for the final purchaser. These behaviors contain exact and sales forecasting, inventory management, store management, shipping etc. Information technology is the ability to electronically input process, store, and output, transmit, and receive data and information. It plays a very significant role in today's trade world. New skills develop in

transaction are Radio Frequency Identification (RFID), Smart Operating Solution Smart Ops, and Point of Sale (POS) etc. The effect indicates that, trade complexities may decrease with the help of Information Technology solution. The exact solution can effect in enhanced efficiency and major cost saving through key compensation such as more precise supply chain, forecasting and improved inventory management. Information Technology also help vendor to resolve major harms associated to customer services like customer fidelity and customer approval.

#### B. Retail's Intricacy: The Information Technology Solution

To a large extent of the trade operations functionality is obsessed by personalized point solutions in region such as merchandizing, supply chain management, in-store process, seasonality and promotions scheduling. This means the primary IT systems to impel operations are uniformly multifaceted. IT systems are at the sensitivity of retail business and therefore play a vital role in lightens pressure points in retail sector. The contrary also holds true retailers who do not administer their IT background efficiently will find that, in time, the IT structure become part of the crisis rather than components of solution.

#### C. Radio Frequency Identification

Radio Frequency Identification (RFID) is a structure that facilitates the tracking of objects, mainly for stock tracking, via a three part expertise including of a reader, a transceiver with decoder and a transponder. RFID is a wireless structure that works in combination with an organization's information technology communications to progress business procedure such as stock management and competence in supply chain administration. The reader emits a radio signal that activates tag and reads and writes data to it. As products are shipped, established or stored, information can be interpreted and expected by the reader, which is attached to a computer. RFID has been incorporated into EPC global set-up and uses the EPC. The EPC is a exclusive integer that identifies a explicit item in supply chain. The EPC is stored on a RFID tag, which merge a silicon chip and a reader. Once EPC is recovered from tag, it can be related with vibrant data such as the basis of an item or date of its fabrication. Much like a Global Trade Item Number (GTIN) or Vehicle Identification Number (VIN), EPC is the input that undoes control of information systems that are element of EPC global system. Wal-Mart, world's subsequent largest business, is installing RFID skill in its provisions. "Wal-Mart is positioning itself at the front of an expected technological revolt. Companies like Microsoft, IBM, and Philips Electronics, which newly made product augmentation announcements in this area, are also participant in industry.

### III. REIMBURSEMENT OF RFID FOR RETAILERS

Envisage a shopping cart outfitted with a scanner and a touch-screen computer that proceed as a virtual personal consumer. As you inspect substances and put them in your cart, processor proposes information about each item for

consumption and recommends harmonizing items. The computer keeps a list of substance in your cart with a management total so you know accurately how much you're spending. When refined shopping, you head to a identity inspect stand or to a banker. Because your objects are previously totalled and bagged, wait time is negligible. All you have to do is disburse. The power behind this tranquil shopping know-how is radio frequency identification technology. RFID is helping retailer about the world develop customer satisfaction and augment sales. The expertise is changing the trade business by contributing trader real-time visibility into stock and product association to recover store efficiency and loss anticipation. Many of the world's chief retailers have mandated RFID labelling. This move influences more than 200,000 producer and suppliers, dynamic worldwide market for hardware and software to sustain RFID. Here are just a few ways where RFID is humanizing efficiencies and creating a better consumer incident in retail industry. Supply control is regularly an expensive, time overriding method for retailers. By presenting real time account visibility, RFID facilitate inventory managers to observe and manage inventory supply at all times. By computerized inventory track process, supplies can remain costs down by maintaining most favourable inventory levels evade stock-outs and abolish redundant orders.

Tracking ability also makes it easier to foresee product demand. Store managers can observe quick-selling substance with augmented exactness, ensuring that their supply supply is stocked therefore. Contented customers mean enhanced trade for retailers. The customer service team can handle purchaser requirements rapidly and effortlessly during contact to a federal database. RFID tagged items suggest store-to-store visibility, so items can be positioned instantly with the contact of a button. This level of invention eases of access fallout in shorter wait times for clients and propose a better shopping experience. Improving overall store efficiencies in due course results in better savings to customers. RFID can be private shopper of the prospect. By using RFID technology, retailers can gather information about their customers purchasing trends and offer rewards embattled to that welfare. RFID can facilitate your advertising and customer service teams to recognize clients, call up description histories, and offer value-added services to help generate a modified shopping experience. For instance, one garments vendor in New York is using RFID smart label to store information concerning each item in the stock up, such as textile content, accessible sizes and colors, and recommended harmonizing substance or accessories.

RFID readers in the appropriate rooms are associated to computer check so clients can inspect all the information and create decisions devoid of ever having to run off the fitting room. And, since seclusion is a main concern, complex defence know-how enables IT staff to enhance protect all information. Contribution is not obligatory for each customer. Legislation restraining or even preventing the consumption of RFID has begun to wend its way during both state and

regional legislative bodies. Third, RFID signal and reader equipment enchanting into description some of the more modern enhancement formerly declares operates at a low semantic level. At the same time, capacity of signals produced is large. To actually make use of much of the information restricted in the signals, vendors will necessitate expanding a rich two dimensional communications. In order for the latent reimbursement of RFID to be comprehend by the economy; these challenges will need to be successfully addressed by business.

#### IV. CONCLUSION

The retail sector has participated a unique role all through the world in mounting efficiency of buyer goods and services. It is also the next largest business in US in expressions of numbers of recruits and establishments. There is no denying the fact that most of the urbanized economies are very much relying on their trade sector as a locomotive of growth. The India trade business is the chief among all the industries, accounting for over 12 per cent of the country's GDP and around 9 per cent of the service. The trade business in India has come onwards as one of the most vibrant and fast rate business with quite a few players incoming the market. But all of them have not yet experienced triumph because of the intense early reserves that are necessary to break even with other business and struggle with them. The India retail industry is progressively creeping its way towards flattering the next growling diligence.

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