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RFID TECHNOLOGY: IMPACT OF STORE FEATURES ON SUPPLY CHAIN GROWTH IN THE RETAIL INDUSTRY

Dr. Venkatesh, J

Associate Professor,
Department of Management Studies,
Anna University Regional Campus @ Coimbatore, Navavoor, Coimbatore – 641 046.

ABSTRACT

Retail is poised for the highest growth in next 5 years and the scope of the Indian retail market is tremendous for the growth of the sector. The India retail industry's current growth rate is 9.5% and it contributes to 15% of the country's GDP. Indian retail market is expected to rise to US$ 978.5 billion in 2010 from US$ 608.9 billion in 2010 and the scope for growth can be seen from this fact. By the year 2016, the organized retailing sector in India is only 3.2% and the predictions are it will grow to 30 - 38%. The scope for the growth of Indian retail sector is tremendous and it proven by the fact that there are under construction around 2500 supermarkets, 500 new malls and 520 departmental stores at present. The change in the consumer's behavior has lead to the growth of scope in Indian retail market. Due to strong change in demographic patterns, changing lifestyle, and increasing income, which are favorable, new generation has preference towards luxury commodities.

Key Words: Retailing, RFID, Customers, Supply Chain, Services

1. INTRODUCTION

As one of the largest sectors of the international economy, Retailing is going through a transitional phase not only in the country of India but all over the globe. For a long time, the consumer had the only choice of the corner grocery shop especially in the urban areas of the country. This is slowly giving way to global formats of retailing like the emergence of fast-food chains, supermarkets/grocery chains, convenience stores, in the traditional grocery and food segment. In developed markets, Retailing is one of the most prominent industries and has played a major role in the global economy. The US retail sector in 2016 has contributed 43% to the GDP at current market prices. In developing economies, where un-organized retail has a dominant share compared to developed economies, organized retail has a 80-85% share in total retail. The major factor in the growth of Indian organized retail sector is that many Indian

companies have entered retail industry in India. By opening 1500 supermarkets and 1000 hypermarkets Reliance Industries is planning to invest around US$ 6 billion in organized retail sector in India. With Tesco a global retail giant, Bharti Telecoms is entering into a joint venture worth £ 750 million. To increase its retail space to 30 million square feet Pantaloons are planning to invest US$ 1 billion. Such huge investments and global retail giants also entering the retail industry in India are the factors in growth of the organized retail sector in India. There are many factors for the massive growth in the Indian organized retail sector and both Indian retailers and government will have to work together for this to continue.

Many retail giants and that is the reason that many new players are entering India retail industry seeing the scope of the Indian retail market. The major Indian retailers are:

- Pantaloons Retail India Ltd
- Shoppers Stop
- Central
- Mahindra
- Bata India Ltd
- Future Retail Ltd
- Reliance
- Music World Entertainment Ltd

Judging the scope for growth in India retail industry, many global retail giants are also entering Indian retail market. They are:

- Tesco
- Metro AG
- Wal- Mart

In the Indian retail market the scope for growth is seen mainly in the following cities:

- Mumbai
- Delhi
- Pune
- Ahmedabad
- Bangalore
- Hyderabad
- Kolkata
- Chennai
- Coimbatore

The scope of the Indian retail market is very vast and hence the Indian retailers and the government will have to make a determined effort for it to reach its full potential. In the country the e-commerce business is growing at a consistent rate. The options are also becoming more to the customers to purchase products at the lowest possible rates. The largest revolution so far in the retail industry is triggered by the growth of e-commerce activities and in the forthcoming years this trend is more likely to continue. For retailers reaching out to more customer base in tier-2/ tier-3 cities with lesser expenses on real estate is favored by the digital retail channels (e-commerce). To realize better growth accomplishments for the entire retail industry, both unorganized and organized retail entities need to collaboratively work together. Nevertheless, supported by increasing urbanization, favorable demographics, entry of foreign players and rising incomes, the long-term outlook for the industry is positive. The prices are expected to go up again in the near future even though the real estate prices have subsided recently due to the slowdown in economies and the financial crises. Presently the sector faces delays in opening stores due to increased stamp duties, the inflexible Urban Land Ceiling Act and the Rent Control Act, pro-tenancy acts and time-taking legal processes. Earlier at some critical locations in major cities the lease or rents on properties were very huge (among the maximum in the world). Since real estate costs constituted a major part of their operating expenses, the profitability of retail companies were affected severely. Now companies are re-negotiating the rental agreements with landlords to reduce costs and are moving out from prominent malls of tier I cities and few are moving to tier II and tier III cities. Another issue that hampers the development of food retail in India is poor roads and lack of cold chain infrastructure. To build a cold-chain network the existing players have to invest more amounts of money and time. The size and the spread of the organization largely decide the information needs of the retailer. In most cases by making a phone call or making a personal visit to the store, a small retailer like the baniya or a small boutique operator can do manual billing and gather a fair amount of information. Gathering of information becomes crucial with an increase in the number of stores and /or an increase in the number of products sold in the store in which technology plays a vital role in gathering this information and making it available to the right set of persons.

2. LITERATURE REVIEW

Danfeng (2010) reviewed the important points about the collaboration for the inner efficiency of retail chain. The study finds that to cooperate the information among retailers, stores, traffics and suppliers in the retail chain, the system should consist of the real time monitoring of items traced by an RFID system firstly. The integration of retail chain information based on RFID can enhance each part of retail chain with higher level of profits and effectiveness. The study reviewed the RFID tracing technology and proposed a frame of the E-cooperation retail chain information system. With the E-cooperation information system management, the retail chain can improve the quality of services as quick response to customers, optimal inventories, flexible operation processes and scientific traffic routes.

Deepika Jhamb and Ravi Kiran (2012) found that young consumers are more interested to shop from modernized retail outfits as compared to older ones. Consumers prefer modernized retail stores due to its significant product factors like enhanced quality, choice of brands and assortment of merchandise and store features like parking facility, trained sales personnel and complete security. The retention strategies, promotional strategies, growth and improvement strategies, pricing strategies and competitive strategies are the major contributors for the growth of organized retailing and play a crucial role in improving the sales of retail formats.

Gomez et al (2012) proposed a system to monitors the route taken by customers inside the store using the technology of Radio Frequency Identification (RFID). This technology is used to identify the shopping carts as they move around the store. Costumer routing information is sent to a central computing system wirelessly so it can be analyzed, stored, and displayed on a screen. This information will help the store manager to develop approaches to improve the shopping process in the supermarket. Mark Roberti (2013) described the use of RFID in a store named "Common People" in Mexico City. It blends chic ambience, an unique mix of art and fashion, and RFID technology to delight consumers. Every retailer in the world aims of creating a store that is a destination a place to which locals and tourists gather because being there is an experience, and buying something is a remembrance of that experience. Thus, the owners of the store turned a four-story, 5,200-square-feet 1940s Colonial-style mansion in the posh Mexican district of Polanco into a unique shopping facility. When a customer hangs up garments that he or she wants to try on in the trial room, the RFID tags on those items are scanned and images of the items are displayed on the touch screen.

Narges Kasiri et al. (2012) studied the item level Radio Frequency Identification (RFID) adoption in retailing. In adopting this technology, managers need to be able to identify its direct and indirect benefits. These benefits are expected to be significant and have begun to be studied empirically and analytically in narrow, isolated segments (e.g., supply chain management). This study focused on applications of RFID in the retail sector, specifically in store management. The authors used a balanced score card (BSC) model as a decision making framework to build a holistic model of RFID enabled changes throughout retail store management including promotions, merchandising, and managing supply chain. The results indicate that benefits in the areas of merchandising and marketing may not be realized as directly as those in the supply chain, but their effects should not be underestimated. The proposed BSC model can also provide potential implementation scenarios for item level RFID use in retailing and serve as a guideline for further studies.

3. BACKGROUND OF THE STUDY

The factors that are contributing to the growth of the retail industry are:

a) Efficiency in Operations: For integrating the functioning of various departments the use of information technology serves as a basis. The investment in terms of money is usually

high when a retailer decides to use the power of technology to aid business, however the benefits are many. The time involved in particular task is reduced as the process gets automated. For example, a person scanning the items using the point of sale systems take a shorter time as compared to a person who is needed for manually billing a customer for purchase made.

b) Efficient Stocking of merchandise: The information on merchandise sold in the store that the items purchased provide is the basis of sales analysis and decisions on replenishment re-ordering and merchandise planning. It can help reduce production time if this information is passed on to the manufacturer. In case of fashion items, which have a very short life cycle this is particularly true. Youngsters buying certain styles in Jeans or colors, in the tee shirts from the store are indicated by the data gathered in this manner. The retailer may need replenishments faster to service this section of the audience. The collection and transmission and analysis of sales information is aided by technology. Avoiding situations of stock out, spot merchandise or products timely markdowns and higher inventory turns are favored by the use technology.

c) Helps Communication: With the use of software like Lotus Notes, communication within the organization can be faster. The communication can be between the retail stores and with the warehouses. For communication with suppliers and vendors Electronic Data Interchange (EDI) can also be used 24 hours a day and seven days a week.

d) Forecasting: The process of estimation of situations, which are unknown at present, is known as Forecasting. In any business organization it is a very important and an essential process to predict or forecast the futuristic trend of business in the economy, in which business leaders and economic experts are actively involved in.

e) Retail Demand Forecasting: To improve retail performance recent demand-forecasting systems offers plenty of techniques. The art of forecasting by individual merchant can be enhanced further by an effective, quantitative and objective approach to demand forecasting, although there is no true alternative for it.

f) Inventory Management: Finished goods already available for sale, Raw materials or goods that are work-in-progress (WIP) are considered as Inventory. In the balance sheet of a company inventory is recorded as an asset. Across their global supply chain retailers need to manage constraints, uncertainties and complexities to optimize deployment of inventory on continuous basis.

g) Store Management: Another example is in store management where Information technology is highly useful. Stock-out items or Out-of-place can be easily identified and alerted by the use of the technology. Wholesale goods are stored, displayed, and sold in a place called store, but commonly a shop or stall is used for retail sale of commodities,. A store is where

something is deposited for safekeeping. Magnetic strips or barcodes or RFID are used by store systems to monitor current versus planned product location on the store floor or in warehouse.

The other drivers of multi-channel are competitive advantage and differentiation needs, and regulatory compliance pressures to ensure that all customers could access the goods and services on sale. According to "The Interactive Consumer: Charting the Online Shopping Revolution," commissioned by Parade Magazine, 86 per cent of the people who use the Internet also buy over the Internet. Almost all retail players have a website of their own and the marketing strategies of growing retailer should always have a retail website (Renae De Leon). Selling of retail goods online over the Internet is called e-tailing or e-retailing means "electronic retailing", coined in the 1990s, the term is mainly used for trading online over the Internet and it is synonymous to the terminologies like e-business, e-commerce and e-mail, e-tailing which is gaining ground is more concerned about the business-to-consumer (B2C) transactions. For example, clothing and apparel segment churned out online revenues of about $ 19.5 billion in the year 2009. Online retailing is classified into three main categories:

1. Click – This category consists of retailers who sell only through electronic channels over the Internet. The best examples are: Dell, Amazon.com, Flipkart and Snapdeal.

2. Click and Brick – This category of businesses that use both the electronic and the physical channels. Classic examples are: Barnes and Noble's.

3. Brick and Mortar – This category of retailers use only the traditional methods of retailing and do not leverage the electronic and other latest channels for selling their products.

e-tailing offers the advantages of product comparisons and reviews available online via the internet and the convenience of buying to the consumers without wasting time in long queues and avoiding non-entertaining sales personnel. But e-tailing also got its own drawbacks like the products of the right fit are often difficult to get since there is no trial available for online purchase, tough return policies, higher shipping expenses and technology awareness of customers needed. In spite of the above disadvantages E-tailing is evolving as a notable phenomenon in the retail industry. In analogy to the American English term, the shopping cart is a component of the software used for e-commerce applications. It runs on a web server and it enables buyers to select goods for subsequent buying. It is called as shopping basket or in short form as basket in British English. The American Marketing Association describes Shopping cart as "software component for making a retailers product catalogue available for online buying, which enable visitors to select, view, add/remove, and buy goods". The shopping cart allows placing or adding items to the cart and on checkout calculates a sum of the order, with the necessary transportation and handling charges including packing and postage with any taxes payable by the customer.

4. METHODOLOGY

Fundamentally, the study is designed as descriptive research. The phenomenon of study are not controlled or modified. They are just measured and reported to highlight the facts. As descriptive research mainly uses interview or survey technique to collect the data, it is proposed to use a self administered questionnaire. Before research instrument is developed, a thorough review of literature and series of interview was conducted among the subject experts and possible respondents to find the items that need to be measured. Multi item constructs that measures phenomenon are framed. Proper scales such as five point agreeableness likert scales, importance scale and satisfaction scales are used. The sources of data include both primary and secondary. The primary source includes opinions of top management of the respondent retail stores and the opinion of customers visiting retail stores. The secondary source includes reports, standard textbooks, journals, magazines, web sites, newspapers etc. The population consists of retail outlets, which are operating in India. For convenience the sample framework was created limiting samples to the major cities in south India, Bangalore, Chennai, and Coimbatore. Though Indian retail sector has majority of retail stores in unorganized sector, the application of technology was found relevant in the organized retailing. Therefore, sampling framework restricted to retails stores of various product categories of modern format. 300 stores were randomly selected for collecting data. However, only 268 stores responded the survey.

5. ANALYSIS AND DISCUSSIONS

The instrument used to collect data from the customers had a multi item construct on store features. 31 items were listed and responses were collected from the buyers. The principal component analysis using varimax rotation was done to reduce the number of factors and to validate the instrument and its constructs. Table 4.4 illustrates the unrotated principal component extraction and Table 4.5 illustrates the varimax-rotated matrix. The Kaiser-Meyer-Olkin value of 0.987 indicates that the samples are adequate for the factor analysis. The Bartlett's Test of Sphericity is also found to significant at 0.015, this indicates that the items adequately explain the factors. This explains that the discriminant validity (The extracted constructs are found to be different from other constructs) and convergent validity (Items do not cross load and reflecting the construct) of the instrument is found to be good.

TABLE 5.1: PRINCIPAL COMPONENT MATRIX OF RETAIL STORE FEATURES

KMO AND BARTLETT'S TEST							
Kaiser-Meyer-Olkin Sampling Adequacy measure.							.987
Bartlett's Test of Sphericity	Approx. Chi-Square						15911.468
	df						471
	Sig.						.015
Component Matrix[a]							
	Communalities		**COMPONENTS**				
	Extraction	**1**	**2**	**3**	**4**	**5**	**6**
PRODUCT DISPLAY ARRANGEMENTS	.789	.856	-.081	-.132	.033	.142	.181
SPACE TO PARK THE VEHICLES OF CUSTOMERS	.763	.845	.221	.011	.011	.089	.083
BROADER OPTIONS OF GOODS	.753	.863	.011	.123	-.042	.015	-.033
SPACIOUSNESS OF THE STORE	.833	.841	.131	-.111	-.189	-.085	-.223
EASY ACCESS TO THE STORES	.763	.845	.011	-.036	.042	.087	.241
EXCELLENT DEMO AND TRIAL VERSIONS OF THE GOODS	.781	.861	-.221	.022	-.071	-.004	-.071
ENTICING STORE ENVIRONMENT	.810	.851	.061	-.121	.125	-.212	-.145
APPEALING ARRANGEMENT OF MERCHANDISE	.791	.855	-.032	-.253	-.127	-.011	-.083
QUALITY OF THE GOODS	.762	.851	.145	.025	-.041	.141	.033
PRICE OF GOODS AND THE REBATES AVAILABLE	.781	.857	.089	.087	-.189	-.151	.044
WIDE SERVICE PORTFOLIO	.739	.839	.089	-.025	-.112	-.125	-.023
MULTIPLE PAYMENT MODES AVAILABLE	.771	.833	.193	.085	.145	.066	.139
LAYOUT OF THE STORE GIVES BETTER ACCESS TO PRODUCT	.785	.825	-.019	-.231	.139	.119	.019
EASY AVAILABILITY OF MARKETING DATA OF GOODS	.822	.861	-.195	.177	.148	-.132	-.039
AMICABLE STAFF OF THE RETAILER	.759	.849	-.059	-.114	-.109	.025	-.049
EXCELLENT ON-PREMISE MARKETING	.739	.834	-.075	-.038	-.155	-.029	-.035
	Communalities		**COMPONENTS**				
	Extraction	**1**	**2**	**3**	**4**	**5**	**6**
DELIVERY OF GOODS TO RESIDENCES	.783	.822	-.035	.115	.107	.118	-.215
TOILET FACILITIES ON-PREMISE	.754	.834	-.089	.147	.025	.138	-.029
AVAILABILITY OF PURE DRINKING WATER	.793	.833	.167	-.095	.263	.015	-.059

EAGERNESS OF BUYERS TO BE IN THE RETAIL OUTLET	.775	.815	-.125	-.109	.076	-.105	.159
BUYING PLEASURE	.739	.815	.148	.049	-.129	.049	.079
EASY BUYING	.785	.825	.069	-.035	-.149	.148	-.115
STORE OPERATING HOURS CONVENIENT TO BUYERS	.813	.825	-.282	-.088	.015	.221	.023
EASY MOBILITY WITHIN THE STORE	.785	.853	.087	-.113	.091	-.139	.111
AVAILABILITY OF CHILDREN'S AREA IN STORE	.795	.853	-.055	.153	.212	-.031	-.095
ENTICING CUSTOMER LOYALTY PLANS	.783	.843	-.003	-.061	.019	-.222	.135
LIGHT REFRESHMENTS AVAILABLE	.775	.828	.029	.259	.027	.023	-.129
SEASONS GREETINGS ARE SENT BY THE RETAILER	.763	.856	.125	.047	.029	.152	-.085
CORPORATE SOCIAL RESPONSIBILITY	.845	.833	-.063	.253	-.165	-.055	.252
LATEST PRODUCTS NEEDS OF CUSTOMERS ARE MET	.779	.832	-.219	.016	-.087	-.083	-.048
OPEN TO FEEDBACK FOR IMPROVEMENT OF SERVICES	.765	.843	.025	-.017	.129	-.145	-.055
EIGENVALUES		7.919	5.483	5.469	2.456	1.435	1.53
% OF VARIANCE		25.65	17.66	17.77	7.895	4.595	4.553
CUMULATIVE %		25.65	43.31	61.08	68.98	73.57	78.12
Extraction Method: Principal Component Analysis.							
a. 6 components extracted.							

The 31-items of the store features were initially extracted. The components with eigen value above one are considered. Six components had an eigen value above one. To distinctively analyze the factors, varimax rotation technique was adopted. 14.15% of the variability in all the 31 items was accounted by four items loaded on the first component. 13.88% of the variability was accounted by two items loaded on the second component. 13.63% of the variability in all total items was accounted by another seven components loaded on the third component. Variability of 13.25% was accounted by eight items loaded on the fourth component. Variability of 12.65 % with a four items loaded on the fifth component. Variability of 10.75 % was by the rest six items loaded on the sixth component. 78.12% of the variability was accounted together by all the six factors.

The constituents of each component are analyzed to identify the factors. Product display arrangements, broader option of goods, price of the goods and rebates available, quality of the goods made up the first component, which forms the marketing mix. Easy access to the store

and space to park the vehicles of customers, which are external factors to the store influences the second component. Hence this component is classified as External factor of Stores. The third component is influenced by the factors within the store like the Spaciousness of the store, Appealing arrangement of merchandise, Enticing store environment, Excellent trial facilities, Excellent on-premise marketing, Easy availability of marketing data of goods, and layout of the store which gives better access to the product. Hence the component is classified as internal factors of store. The fourth component is influenced by service factors like multiple payment modes available, Amicable staff of the retailer, services, Toilet facilities on-premise, Availability of pure drinking water, Delivery of goods to residences, Availability of children's area in store and Easy mobility within the store. Hence the component can be classified as Service Level of Retail. The fifth component is influenced by factors like Easy buying, Buying pleasure, Eagerness of buyers to be in the retail outlet and store operating hours convenient to buyers reflect the fifth component, which is classified as Environment of Retailing. The sixth component is influenced by factor like Enticing Customer Loyalty plans, Corporate Social Responsibility, Light refreshments available, latest product needs of the customers are met, Seasons greetings are sent and Open to feedback for improvement of services, which is classified as Relationship with Customers.

TABLE 5.2: ROTATED COMPONENT MATRIX OF RETAIL STORE FEATURES

	COMPONENTS					
	1	**2**	**3**	**4**	**5**	**6**
PRODUCT DISPLAY ARRANGEMENTS	**0.673**	0.323	0.293	0.245	0.41	0.225
SPACE TO PARK THE VEHICLES OF CUSTOMERS	**0.571**	0.353	0.33	0.276	0.285	0.33
QUALITY OF THE GOODS	**0.553**	0.425	0.232	0.261	0.45	0.333
BROADER OPTIONS OF GOODS	**0.433**	0.46	0.371	0.317	0.33	0.373
EASY ACCESS TO THE STORES	.213	**.463**	.241	.455	.322	.391
PRICE OF GOODS AND THE REBATES AVAILABLE	.392	**.473**	.441	.193	.283	.342
	COMPONENTS					
	1	**2**	**3**	**4**	**5**	**6**
SPACIOUSNESS OF THE STORE	0.445	0.275	**0.573**	0.253	0.362	0.192
APPEALING ARRANGEMENT OF MERCHANDISE	0.224	0.33	**0.545**	0.463	0.42	0.210
ENTICING STORE ENVIRONMENT	0.385	0.323	**0.63**	0.325	0.256	0.33
EXCELLENT DEMO AND TRIAL VERSIONS OF THE GOODS	0.477	0.345	**0.488**	0.179	0.325	0.42
AVAILABILITY OF PURE DRINKING WATER	0.295	0.355	**0.483**	0.252	0.373	0.363
EASY AVAILABILITY OF MARKETING DATA OF GOODS	0.213	0.42	**0.63**	0.243	0.371	0.44
LAYOUT OF THE STORE GIVES BETTER ACCESS TO PRODUCT	0.287	0.407	**0.515**	0.243	0.419	0.106
EAGERNESS OF BUYERS TO BE IN THE RETAIL OUTLET	0.346	0.375	0.354	**0.593**	0.263	0.21

AMICABLE STAFF OF THE RETAILER	0.243	0.205	0.334	**0.556**	0.429	0.395
WIDE SERVICE PORTFOLIO	0.273	0.373	0.407	**0.523**	0.208	0.323
DELIVERY OF GOODS TO RESIDENCES	0.255	0.473	0.356	**0.498**	0.265	0.112
TOILET FACILITIES ON-PREMISE	0.231	0.253	0.263	**0.517**	0.471	0.393
ENTICING CUSTOMER LOYALTY PLANS	0.412	0.232	0.261	**0.503**	0.265	0.403
AVAILABILITY OF CHILDREN'S AREA IN STORE	0.385	0.234	0.309	**0.487**	0.269	0.28
EASY MOBILITY WITHIN THE STORE	0.41	0.315	0.317	**0.485**	0.32	0.286
EASY BUYING	0.265	0.258	0.359	0.195	**0.645**	0.225
BUYING PLEASURE	0.233	0.347	0.261	0.293	**0.63**	0.415
MULTIPLE PAYMENT MODES AVAILABLE	0.346	0.393	0.233	0.295	**0.536**	0.44
STORE OPERATING HOURS CONVENIENT TO BUYERS	0.171	0.452	0.322	0.371	**0.525**	0.237
EXCELLENT ON-PREMISE MARKETING	0.273	0.347	0.333	0.329	0.211	**0.656**
CORPORATE SOCIAL RESPONSIBILITY	0.345	0.383	0.347	0.191	0.246	**0.578**
LATEST PRODUCT NEEDS OF CUSTOMERS ARE MET	0.345	0.289	0.245	0.323	0.456	**0.563**
LIGHT REFRESHMENTS AVAILABLE	0.351	0.323	0.415	0.256	0.273	**0.523**
SEASONS GREETINGS ARE SENT BY THE RETAILER	0.363	0.209	0.385	0.308	0.243	**0.485**
OPEN TO FEEDBACK FOR IMPROVEMENT OF SERVICES	0.425	0.26	0.393	0.425	0.323	**0.53**
EIGENVALUES	4.353	4.322	4.195	4.093	3.895	3.33
% OF VARIANCE	14.12	13.85	13.63	13.25	12.61	10.73
CUMULATIVE %	14.12	27.97	41.6	54.85	67.46	78.19
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.						
a. 24 iterations are considered for the Rotation convergence.						

6. CONCLUSION

Minimizing the expenses of inventory management is a mandate enforced by the competition and recession on the retail players. Striking a balance between minimal inventory overheads to reduce the working capital and ensuring product availability for customer satisfaction is the primary job of the retail player. No stock situation for certain items, and excessive for other items may be caused by ineffective inventory management and control, which will in turn cause an adverse effect on the ROI and the branding of the store. Nevertheless, out-dated stock, damaged goods, heavy cost of inventory carrying and lack of profitability might be caused by excessive inventory. Close supervision of the in-store stock and inward stock for refilling, at the appropriate quantity and time is needed for effective inventory control. For the consignment, pallet and item level control, RFID has been proven to be effective, the implementation of which improves the control of inventory and its replenishments.

REFERENCES

1. Danfeng, Jiang Shimiao (2010), "E-cooperation retail chain information system based on RFID," Advanced Management Science (ICAMS), 2010 IEEE International Conference on, vol.1, no., pp.620-624, 9-11.
2. Deepika Jhamb and Ravi Kiran (2012) Emerging Trends of Organized Retailing in India: A Shared Vision of Consumers and Retailers Perspective, Middle-East Journal of Scientific Research 11 (4): 481-490.
3. Gomez, J.M.E, Alvarez, A.F.J, and Rodriguez, J.B (2012), "Supermarket customers routes-and-times identifier", IEEE Colombian Communications Conference (COLCOM), vol., no., pp.1-5.
4. Mark Roberti (2013). Creating a Unique Retail Experience, RFID Journal - RFID (Radio Frequency Identification) Technology News & Features. Retrieved January 11, 2013, from http://www.rfidjournal.com/article/purchase/8195.
5. Narges Kasiri, Ramesh Sharda and Bill Hardgrave (2012), A balanced scorecard for item-level RFID in the retail sector: a Delphi study, European Journal of Information Systems (2012) 21(3), 255–267.Lucintel (2012). Global Retail Industry 2012-2017: Trend, Profit, and Forecast Analysis. Market Research Reports. Lucintel, Dallas, Texas, USA.
6. Parade Magazine (2000) The Interactive Consumer: Charting the Online Shopping Revolution. Retrieved January 1, 2013, from http://www.prnewswire.com/news-releases/new-parade-survey-finds-internet-shopping-has-reached-mainstream-america-73361772.html.