

---

## UNIT 20 TECHNOLOGY IN RETAILING

---

### Objectives

After having gone through this unit, you should be able to:

- explain the significance of technology in retailing;
- explain the role of technology in various components of retailing;
- describe the latest trends of technology retailing; and
- comment upon some precautions to be taken while planning to adopt any technology in Retail.

### Structure

- 20.1 Introduction
- 20.2 Need for Technology
- 20.3 Application of Technology in Various Areas of Retailing
- 20.4 Factors Influencing Selection of Technology
- 20.5 Latest Trends of Technology in Retailing
- 20.6 Precautions While Handling to Technology in Retail
- 20.7 Summary
- 20.8 Key Words
- 20.9 Self Assessment Questions
- 20.10 Further Readings

---

### 20.1 INTRODUCTION

---

Technology is like a catalyst. It enhances the efficiency of any activity or process where it is applied in the correct manner. Technology has had a strong presence in business from times untold. The magnitude of advancement has been different in different places. At one point of time telephone and television were considered to be frontiers of technology. Even now in distant villages in India long distance telephony is a technological miracle. Business efficiency and the smoothness of transactions are the key outcomes of technological efficiency.

---

### 20.2 NEED FOR TECHNOLOGY

---

During olden days the neighbourhood retailer used to know his customers along with his family members by their first name. The contact was very personal and frequent. Thus the retailer was like a member of the family. Besides this the number of alternatives available in each product was minimal. Thus selection was not a problem. Most importantly with a limited range of products and number of brands a customer never felt like personally exploring the possibilities for a better product/brand or may be a better bargain.

In the present day with numerous products to satisfy specific need and numerous brands in each category the scenario is different. To top it the number of customers as well as retailers has increased manifold. Thus the personal relationship and interaction led shop loyalty has been replaced with sales promotion schemes, and purchase scheme lead loyalty. In this backdrop business



processes as well as store management have become more challenging and complex. With such complexities backed with scarcity of time, it becomes important to implement some mechanism. Any such mechanism should not only save time but should also be accurate. Here comes the role of technology.

## 20.3 APPLICATION OF TECHNOLOGY IN VARIOUS AREAS OF RETAILING

Technology can be applied or rather is being applied to different departments of retailing. It will be good if we study the departments one by one and then see the technology application.

### 1) Merchandising

**a) Sourcing:** We can divide various functions under this broad head. First of all we take sourcing of merchandise. Sourcing includes deciding about the depth to be maintained in each category to the number of categories to be maintained. It also includes short listing and selecting of vendors and planning orders.

A retailer needs to gather information about various categories in vogue in the market. He needs to keep a tab on latest trends in this context. Nowadays retailers collect their own stores purchase data to study the buying trends. He is also collecting data through the internet similarly vendors can be short listed. Various vendor databases can be used to find suitable merchandise suppliers. Availability of goods can be ascertained and order placed through the internet

**b) Stocking/warehousing:** Here the technological element is maintaining data of the stocks received. Necessary changes are made on a regular basis as per the consumption at the store. A retailer decides upon the reordering level based on consumption and delivery lead time. Thus once the stocks reach that level an intimation, automatically goes to the purchase department. Technological contribution has come to such a level here that if the retailer has a long term contact with the vendor then the order can also be directly placed to him automatically once the stocks reach the reordering level. This is possible through ERP programme.

### Store Management

It includes various issues, such as, Human Resource Management, Finance & Accounting, Store display, security and miscellaneous issues. Technology has contributed in each sphere depending upon the scope. From an HRM perspective the manpower planning is now done with the help of systems. Softwares are available which shows the total position of available staff in a given day. It also can shuffle personnels based on programming done. Such manoeuvring can be done once the name of personnel on leave is keyed in.

Finance and accounting is now commonly used system based. There are specific softwares available to handle cash flows, payments and receipts. Billing machines have now become age old phenomenon. Since products are generally bar-coded in retail stores-the mechanism is different. At the point of sales (POS) all the product codes are saved in the computer memory. Thereon with the identification of this code the prices are simultaneously tabulated and added up. Moreover it is technological advancement in the banking sector which is helping the retailer in his accounting work. A retailer can at any time log on to the bank site and with the help of a password have an access to his account details. Thus sitting at his store he can come to know whether the cheque deposited for clearance has been received or not. This also keeps him updated with his cash in bank position.



Plastic money is another contribution technology. Credit cards have made purchasing such an easy activity. They are being widely accepted. Debit cards are also in vogue. This has also increased the propensity to consume amongst the customer community. For more efficient handling of cash, now advanced cash drawers are in vogue. These cash drawer are multi layered with space for different denominational currency notes and coins respectively. It is connected to the billing machine. As soon as a new transaction is entered in machine the drawer opens automatically with trays coming out. After the cash keeping and change picking is through the drawers automatically close again.

Store display is another area which has been greatly benefited by the technological contribution. Nowadays lighting in the stores is a result of advanced technology. Various effects can be created with lighting. This in turn totally transforms the store atmosphere. As a result store experience can be enriched thus stimulating sales. Besides lighting nowadays the entire display design can be visualised and actually seen on the computer monitor without investing a single rupee.

Security is a critical area for any store. Close circuit televisions are an age old concept but has become more common now even with medium size retailers. Security from theft is not the only risk zone for the retailers. Another area is fire. Smoke sensors are now being installed in all big retail outlets. Besides being a credible investment it has even become mandatory to install fire safety devices in big retail outlets.

### **Marketing and Customer Relationship Management**

Every store would like to promote itself. They have been employing all novel methods to ensure an enhanced footfall into the store. Most importantly every retailer strives to have a number of loyal customers. Such customers not only remain loyal to the store but also tend to influence their peers store selection towards the specific store. Nowadays all the big retail stores use available softwares to store data about customers and their purchases. This is then classified to find the most valuable customers, frequently visiting customers, most highly demanded categories, colours and varieties. Earlier bin cards or store purchase cards were used for this purpose. With technology coming in now data mining is the latest to be used in this regard.

Retail stores are also offering loyalty cards now which have been in vogue for quite some time in air travel As per the purchases made the scores are added up to that account, leading to attractive gifts later. Here with just swiping of the card that specific account is activated. In such a case a central data centre exists which stores all the data. The retail store can at any point of time retrieve the classified data from the central database Technologies under this broad head are titled as CRM technologies where CRM stands for Customer Relationship Management. With CRM software we can identify specific market segments, which were earlier statistically done by cluster analysis

The greatest benefit of technology from marketing point of view is the accuracy of processed data When the retail store has exact information about buyer preferences, clusters of similar preferences present trends then he can plan his market promotion strategy accordingly. Promotional schemes can also be designed based on available information

### **Activity 1**

Go to one of the big shopping plazas in your city. Visit the top S retail outlets, shopping malls or super markets Enquire about the different uses of technology in their respective outlets. Create a list of technologies used as well as a corresponding column of nature of business, volume of business. Make a

comparative analysis and study whether nature of business and volume influences use of technology or not?



.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

---

**20.4 FACTORS INFLUENCING SELECTION OF TECHNOLOGY**

---

Since every store wants to have a modern image, at times they make an erroneous decision regarding technology adoption. Since each store is not equal on all business parameters thus technology adoption has to be dealt on a case to case basis. Certain factors must always be kept in mind by the retail store owner before going for any technology.

**i) Is there a need for technology adoption at all?**

Any technological product needs high investment, trained personnel and periodical updating. A retailer should first look into the return on investment as well as recurring cost besides the one time sunk cost. Can the job in focus be done manually or with some cheap technological substitute? For instance for recording simple day to day retail activities of a small retail store any general software is sufficient.

**ii) Volume of Business**

Most important factor is what sort of volumes the retailer is operating with. Larger volumes do necessitate technological interventions. Here it's very important to note that large volume is a relative term. The biggest store in a small town can be much smaller than a medium sized store in a metropolitan city. When we speak of such products we must look into the issue accordingly.

**iii) Nature of products dealt with**

Each retailer deals with a set of products which when combined generally are a part of an industry. For instance Pantaloon or Westside who are in the apparels trade are a part of the fashion industry. Since fashion is very temporary in nature, they have to take aid of technology to gather data about latest fashion trends in India and abroad. This helps them to have a proper hold on the production planning and control.

**iv) Availability of Financial Resources**

In any business the buck finally stops here. After considering all the factors a store has to have a serious look at its resources. Most importantly a wise retailer should never dig into his working capital to meet such fixed expenses. Although exceptional cases do exist, but, thumb rule still remains the same.



---

## 20.5 LATEST TRENDS OF TECHNOLOGY IN RETAILING

---

### Electronic Retailing

Although it's not latest as far as international retailing is concerned, however in India it's still in an early stage. In electronic retailing internet is used as a platform by the retailer to communicate with the customer and offer products and services on sale. In India Baazee.com Times Internet, Rediff etc. are some of the examples of retailing. It will be dealt in detail in the next chapter on Non Store Retailing.

### Interactive Projection Displays

Interactive rear projection displays allows the viewer to control the content displayed on a screen with a touch. It can be used within the store to promote services or offerings, or within the shop window. This actually facilitates window shopping. They are run on touch screen technology.

### Attention Seeking Display Units

Such units can be installed within the store *or even* outside. Their main *aim* is to seek attention from the passers by. These illuminated and uniquely designed units carry promotion messages as well vital information about some specific products:

### Vending Machines

Such machines have been recently installed in selected railway stations for vending platform tickets. Milk vending machines also exist. Presently opportunities are being explored in this area with more emphasis on new features and uses.

### Handheld computer devices

Such devices have been successfully used by supply chain personals at the lowest *end*. It *has* been found useful to replace loads of paper which the driver had to carry while delivering consignments of product to the customers. With the total data stored in the handheld device now. Thus the driver can very well refer to that for any cross checking.

### Radio Frequency Identification (RFID)<sup>1</sup>

This is a wireless technology which is presently revolutionizing the Retail information system. A basic RFID system will have a transceiver, an antennae and a RFID tag also called a smart tag. The antennae *emit radio* signals which activate the smart tag, following which the transceiver decodes the data from *tag* into the computer. This *has* been used *for* tracking. RFID has been very successful *in* accurate tracking. However due to very high price of RFID its large scale adoption has not been possible yet.

---

## 20.6 PRECAUTIONS WHILE HANDLING TECHNOLOGY IN RETAIL

---

- 1) A retail store before adopting any new technology should spend time in studying the applications. It's advisable to speak to stores who have already adopted such technology successfully. Complete prior information comes in very handy while deciding on such issues.

---

1 James R.Ogden, Denise T. Ogden (2004) Integrated Retail Management, (Biztantra)



- 2) Any technology transfer without proper training support and updating is useless. While going for any new technology a retail organisation must be very clear on these issues. Moreover training is a continuous process. The need may arise anytime in future to may be train some newly recruited personnel. There should be scope for such in the contract for technology transfer.
- 3) It is always in the interest of the retail organisation to have its own data processing or technology using staff. Depending on technology vendor, such services may be quite expensive and also not fit from a strategic perspective.
- 4) At any point, retail organisation should not assign the handling of processes which are technology oriented only to one or two personnels. Such indispensability of those personnels can put the organisation in a fix. A second line of command should always be present in such critical areas.
- 5) In the post WTO era issues related to copyrights and title of technology are very critical. Especially if purchasing from international vendors one must carefully read through the contract and take legal advice before signing on the contract.
- 6) As a part of the disaster plan a crisis management plan should be in place to tackle situation arising out of system failure or snags in the software. Such circumstances are common and should be planned for.
- 7) While acquiring any technology one important aspect is its price. This is also a decisive factor for its acquisition. Thus generally it has been seen that to show the product price low some hidden costs in other forms exist in the contract. Such hidden costs make the product's cost to company much higher. While taking such decisions one must consider all monetary aspects including recurring costs as minutely as possible.
- 8) In traditional organisations existing for long periods older people resist implementation and introduction of any technological products. Instead of replacing them with younger people one must get down to motivation, persuasion, training and incentivising such usage. This approach will be in the greater interest of the organisation.

## Conclusion

To sum up technology plays a critical role in enhancing efficiency in Retailing. Role of technology is not new. Only difference has been the fact that there has been a barrage of new technologies coming in. A Retailer now has to be very cautious while planning to adopt a new technology.

---

## 20.7 SUMMARY

---

The unit focuses on technology as a key contributor in retailing. Technology is a catalyst to increase efficiency and customer satisfaction as well as owner convenience in retailing. Technology has a distinct role to play in Merchandising, Store display finance and accounts as well as Marketing and Customer relationship management.

Further the unit speaks about the latest trends of technology in retailing. It also touches upon the main factors which influence adoption of a specific technology. It ends, with a set of precautions which a retailer must keep while planning to go for introduction of technology or for acquiring a new technology.



---

## 20.8 KEY WORDS

---

**Billing Machines:** Machines which prepare bills as per the entries keyed in.

**Plastic Money:** Credit Card is also termed as plastic money.

**CRM:** Customer Relationship Management.

**Interactive Projection:** These are projections which are displayed for customers. Customers can display control the content displayed on the screen with a touch.

**RFID:** Radio Frequency Identification

---

## 20.9 SELF ASSESSMENT QUESTIONS

---

- 1) What is the need for adopting technology in Retailing?
- 2) With example give the factors which influence adoption of technology in business.
- 3) Describe how technology will play an important role in Merchandising.
- 4) With examples illustrate role of technology in customer relationship management.
- 5) What are the risks if precautions are not taken while planning to adopt any technology for a retail business?

---

## 20.10 FURTHER READINGS

---

Berman Barry, Evans Joel R, (2002) *Retail Management- A Strategic Approach* 8<sup>th</sup> Ed (Prentice Hall of India)

Levy Michael, Weitz Barton A (2001) *Retailing Management*, 5<sup>th</sup> Ed, (McGraw-Hill Irwin)

James R.Ogden, Denise T. Ogden (2004) *Integrated Retail Management*, Biztantra