

ICT

Functions and Benefits

Functions and benefits of ICT in a Boots store

The operations within a store follow a logical process of:

- 1 Receiving stock from a warehouse for sale in a store.
- 2 Stock is put onto shelves on the sales floor or onto racks in the stockroom.
- 3 Customers arrive at a store and select merchandise (products).
- 4 During their shopping experience customers might use Advantage Point machines to access information.
- 5 Customers pay for their goods at the checkout.
- 6 Data is transmitted between stores and Boots Head Office.
- 7 Shelves are refilled during the day assisted by handheld devices.
- 8 There are also other activities in a store supported by ICT.

Receiving Stock

Receiving stock from a warehouse for sale in a store

Each Boots store has a stock file which contains the stock held by that store. As products are sold, the Electronic Point of Sale (EpoS) system automatically adjusts the stock file accordingly and reduces the number held on the stock file by the number sold.

The system knows what the ideal stock holding will be for that particular store and automatically sends requests to the central warehouse systems so that the products can be re-stocked.

As stock is received at a store from the warehouse, the stock file is adjusted according to the items that have been delivered, which might not exactly match what has been sold (due to out of stock items at the warehouse, discontinued lines or theft in the supply chain). The stock file should then show what the total (and current) stock holding is within the store at that time.

The accuracy of the stock file depends on all sold items being scanned at the checkout and the stock arriving at the right store from the warehouse. Differences between the stock file and the actual stock are often due to theft, which is called 'shrink' in the retail industry.

Storage

Stock is put onto shelves on the sales floor or onto racks in the stockroom

Products are displayed on shelves within a store for the ease and convenience of customers. Law requires that certain information is provided. The sale price (in some cases in multiple currencies) and the unit price (i.e. the equivalent price of the product per 50 ml, litre etc.) are displayed.

A description of the product might be included, as well as indication of whether it can be purchased using Boots Advantage Card points.

It also contains a barcode made-up of a seven digit item code specific to the product. The barcode allows the sales assistant to identify products which are running low and need to be re-stocked.



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This information is downloaded to the EpoS system in store from central systems and is held on the item file. This file contains the item code and the details shown on the shelf edge label, plus any additional information, for example restrictions as to whom it may be sold to (i.e. must be over 18 years old), or any limitations to the quantity if Paracetamol or Aspirin products.

Customers

Customers arrive at a store and select merchandise (products)

An important measurement in retailing is the number of customers that pass through the store, known as footfall. It is important to know if your offer is attracting enough customers to visit your store. Comparison with sales figures from EpoS show the number of conversions, i.e. actual sales as a percentage of customers visiting the store. In a selection of stores, footfall counters are placed at entrances and exits to monitor the flow of customers.

The data is passed via the Boots virtual private network (VPN) to Head Office. Trends of footfall are analysed and compared with marketing and promotion campaigns.

Customer Experience

During their shopping experience customers might use Advantage Point machines to access information

Each Advantage Point machine is connected to the Boots computer network and therefore back to the central systems at Head Office. When a customer puts their Advantage Card into an Advantage Point machine, the system reads the customer details from the chip on the card.

It then displays the customer's name and points balance. The customer is then presented with a menu screen which includes regular changing promotions and savings, retrieved from the head office network.

These offers are only available from the Advantage Point machines and most are personalised to the customer and the way they shop (eg feminine products and offers are presented to women and not men). The menu also offers ideas on things to spend points on (products to redeem) and there's an option to update your personal details, eg name and address.

Boots Advantage Card is a loyalty card - a way of rewarding customers for continuing to shop at Boots stores. See the Advantage Card unit on this website for more information.

Customers at Checkout

Customers pay for their goods at the checkout

EpoS (Electronic point of sale) tills are the modern day equivalent of cash registers. They are used for fast and accurate recording of transactions and receipt of payment. They also capture personal data about the shopper (via the Advantage Card); recognise items for sale and their attributes (price, weight, etc.) and request new stock following the sale.



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They also provide additional information at the point of sale, such as technical specifications of cameras or ingredients of healthcare products. Each EpoS till within a store is connected to a local area network (LAN) within the store, which is then connected via a communications hub to the Boots virtual private network (VPN).

EpoS tills account for the money received (cash and other payment types such as cheques, credit cards, gift tokens and vouchers) and produce receipts for customers. Each EpoS till within a store is connected to a local area network (LAN) within the store, which is then connected via a communications hub to the Boots virtual private network (VPN).

Customers at Checkout (page 2)

The till needs to know the price and other characteristics of the products being sold. It does this by reading or scanning a barcode, which is attached to the product or its packaging. The barcode contains a unique number that relates specifically to the product (seven digit item code).

The item code is recognised by the item file held on the EpoS till, which contains product descriptions and special conditions of the sale (for example solvents that cannot be sold to minors). This information can be displayed on screens mounted on the till.

The barcode is a machine readable format that is made up of a series of parallel black lines with the numbers printed below them.

Customers at Checkout (page 3)

Scanning saves time as it enables the EpoS till to quickly recall the accurate price for that product. It does not rely on every item carrying a price label and allows the price to be changed without having to change price tickets on every item (although the shelf edge labelling and any show material must be changed). It removes the need to enter the data manually or relying on memory, thus improving accuracy and compliance with Trading Standards legislation.

Customers at Checkout (page 4)

Every EpoS till has an Advantage Card reader attached to it. This device enables data to be read from and written to, the smart chip contained on the Advantage Card. The smart chip holds the name of the cardholder, the Advantage Card number and the number of loyalty points saved by the cardholder. If a customer redeems some of their loyalty points for products, then, by pressing a specific button on the till, the appropriate number of points for that product is deducted from the points balance on the chip, instead of payment, and the till automatically adjusts the balance accordingly.

A continuity purchase is a record of purchases over a series of visits to the store, for example nappies, and when a predetermined number of purchases is reached a reward is given to the customer, possibly a free pack of nappies in this case.



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Debit and credit cards

Debit and credit card payments

When a customer uses a credit or debit card for payment, the magnetic stripe on the reverse of the card is swiped through a reader. The reader picks up the card details and the amount of the transaction is automatically made available from the Epos till. These details are sent via the LAN and WAN to Head Office and are then forwarded to Boots' nominated bank which authorises transactions for Boots.

The bank then returns an authorisation code via the same route to the Epos till in store, so that the transaction can proceed. If the checks are not successfully completed then the transaction is rejected. The time for this check is normally only a few seconds.

The bank runs a series of checks to ensure that the credit limit will not be exceeded, or that the card has not been stolen. If the checks are not successfully completed then the transaction is rejected. The time for this check is normally only a few seconds.

Data Transmission

Data is transmitted between stores and Boots Head Office

All Epos tills are connected to a local area network (LAN), which in turn is connected to a virtual private network (VPN) or Wide Area Network (WAN). The WAN is then connected to the central systems at Head Office in Nottingham. Although the stores are permanently connected twenty-four hours a day and seven days a week, some data traffic (sales data and stock information) is deliberately stored into batches, which are transmitted from store to centre at the end of the trading day (known as inbound traffic).

Details of re-stocking, deals and promotions and item code information are transmitted overnight from the centre to stores (known as outbound traffic).

Re-stocking

Shelves are re-stocked during the day assisted by handheld devices

Throughout the day constant checks are made to see that the shelves are full, as generally customers can't purchase what they can't see! To help with re-stocking, Sales Assistants use Portable Data Terminals (PDT's). The PDT can scan the barcode on the shelf edge label (if all of the products have been purchased), or the barcode on any remaining stock items.

The Sales Assistant then enters manually, via the keyboard on the PDT, the number of items to replace on the shelves.

Once complete, the PDT is taken to a docking device where the data is transferred to the Epos till controller (a device which links all of the Epos tills together). This produces a picking list for the Sales Assistant to retrieve new stock from the stockroom. In some stores this connection with the controller is made via a wireless network, enabling immediate transfer of data which saves time and effort in store.



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The PDT is a handheld device that includes a scanner similar to that used on the EpoS till. In some stores this connection with the controller is made via a wireless network, enabling immediate transfer of data which saves time and effort in store.

Useful Statistics

- * Boots The Chemists store systems operate 24 hours a day, 365 days a year.
- * They support about 55, 000 users in around 1600 remote locations within two countries (UK and Republic of Ireland).
- * They comprise approximately 20 systems, on 7 different hardware platforms and on more than 100,000 devices.
- * The systems handle about 500 million transactions annually, in two currencies, which generates approximately 60,000 calls for support per year.

Other Applications

Other applications of ICT in a Boots store

A number of other systems run in the administrative area of the store which provide basic office tools such as email, word processing and spreadsheets. A Computer Based Training system (CBT) is one method used for delivering training material to stores staff. The system allows staff to learn at their own pace and at times when it is convenient to them.

This largely unsupervised activity also provides a training record and history which can be collated centrally to ensure that staff have received the appropriate training and have achieved a pre-determined standard.

Other Applications (page 2)

Management and general information is provided by Storenet, which is a dedicated Intranet service designed especially for stores. This provides a mix of general information such as training and procedural manuals and more specific information such as Personnel details, budgetary and financial information for each store. In addition it has general interest pages, internal vacancies and corporate information (i.e. company results and notices).

The Future of ICT

Future of ICT in Boots stores

One of the current trends in retail is the use of radio frequency identification (RFID). By placing a RFID device on individual products or outers (the packaging used to hold several products), or on cases and pallets, it is possible to track and count individual items as they move through the supply chain. For example, items picked in a warehouse and loaded onto pallets are automatically read as they pass between readers in the warehouse.

As the pallet is delivered at stores it again passes between readers providing the local system with a list of the contents of the pallet, thereby accurately adjusting the stock file. As stock is moved around the store it can be traced and this might even result in an automatic checkout without the need to scan each item.

