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KNOWLEDGE AND INFORMATION MANAGEMENT SKILLS FOR THE WORKPLACE

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INTRODUCTION

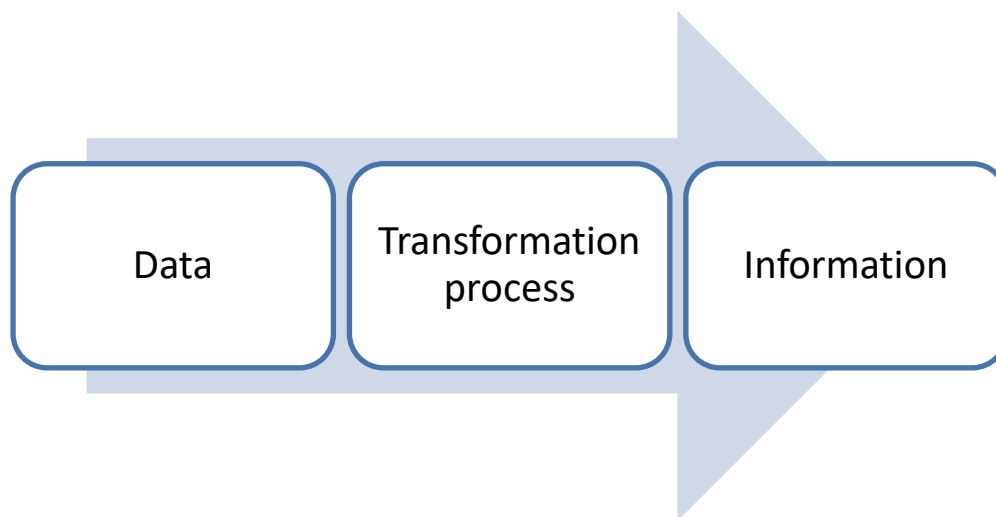
Founded in 1919 Tesco plc is one of the largest international retail chains in the world.

The merchandising chain which started off as a humble grocery store in London now deals in everything from general food & Drink, clothing, household appliances, electronics to financial service and telecommunications. With a revenue of over £60 billion pounds and employing over 500,000 people it is the largest British retailer by both global and domestic market share.

This report will look at the essential Information Technology Systems used by Tesco and describe the input, processing, and output of these system. The report will also discuss Porters Competitive Strategy when applied to Tesco's IT use.

WHAT IS DATA

In its raw form DATA is a collection of facts and observations with very little or no meaning. According to Wersigand Neveling (1975) and Rowley (2007) data can be a culmination of non-random symbols which are qualitative or quantitative. Data can have many forms, it could be numeric, alphabetic, visual, audible, or even symbolic. When seen in its original form it can often be misleading or confusing since it does not have any meaning (Stonier, 1993). For data to be understood it must be converted into information (Zins, 2007). If one took a mixture of numbers such as 27041975 and asked an individual to decipher the number's they would be hard pressed to decipher it, however if the letters DOB were entered before the numbers a wise person might decode that the DOB was an abbreviation for the words 'Date' 'Of' 'Birth' and come to the conclusion that the numbers following DOB where the day, the month and the year of a person's birth. An individual could then translate the first two numbers (27) as the day of the month, the second two numbers (04) as the month of the year and the last four numbers (1975) as the year off birth. it could then be concluded that somebody's date of birth is the 27th of April 1975.

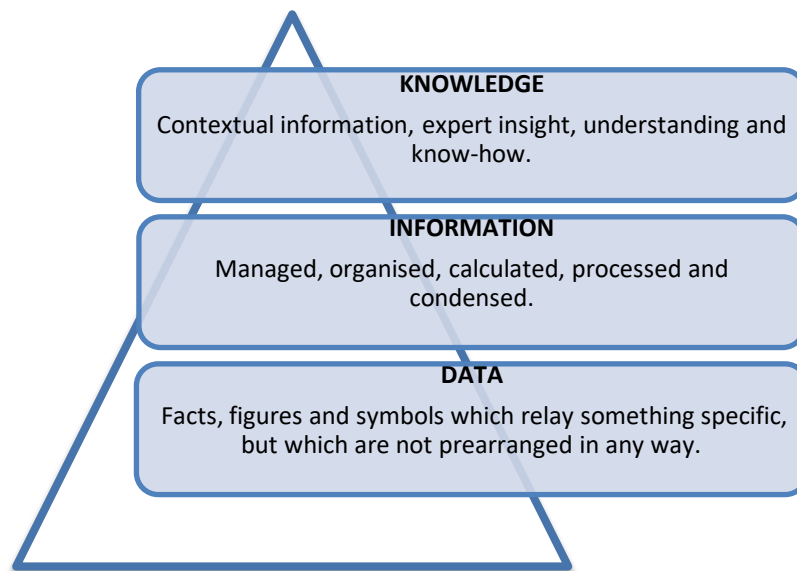


(Tutorials Point, 2019).

So the raw data which had very little or no meaning because it was not converted, once converted has become useful because it has some meaning. Data which has been converted and given meaning is known as information.

WHAT IS INFORMATION

Once data is processed and converted it begins to have meaning and importance and is known as information. Information by itself can also be a little confusing unless the information is assigned to something or brought into context. If one looks at the raw data which has now been converted into somebody's date of birth, that information alone has very little meaning or value because the date of birth has not been assigned to a person or living thing. For this information to be very useful it must be assigned to someone. If this information appeared on someone's passport with their name, address, and photograph then that information would have more value. A culmination of all this information would give the viewer knowledge about the said individual. A series of information blocks once evaluated and understood is known as knowledge (Zins, 2004).



(Knowledge Management Tools, 2018).

WHAT IS KNOWLEDGE

Knowledge is contextualised information. It is the deciphered version of data after it has been decoded into information and organised in a systematic way. Understanding the relationship between Data, Information and Knowledge is a vital factor of organisational infrastructure. Information Technology Management Systems are often created and developed by organisations

at great expense to gather and utilise data to facilitate operations, reduce cost and effort and enable profit and growth.

A BRIEF HISTORY OF TESCO

Tesco was founded by Jack Cohen At the end of the Great War In 1919 and started by selling groceries in the East End of London. It has now become a global conglomerate and deals in all aspects of products and services. At present It is one of the leading retailers in the world and has diversified into banking, telecom, fuel, tech support Clubcard's and many other Markets. Tesco operates a variety of different stores which include Tesco express, Tesco Superstores, Tesco extra, Tesco metro and many Petrol Stations. Tesco also has a major online presence and sell a huge variety of goods and services online. Tesco's marketing strategy is based on customer wants and needs with a value for money approach. At present Tesco's in store and online sales amount to £56.5 billion pounds.

Tesco identifies Its information management system as a key part of its operational process essential part of its overall success.

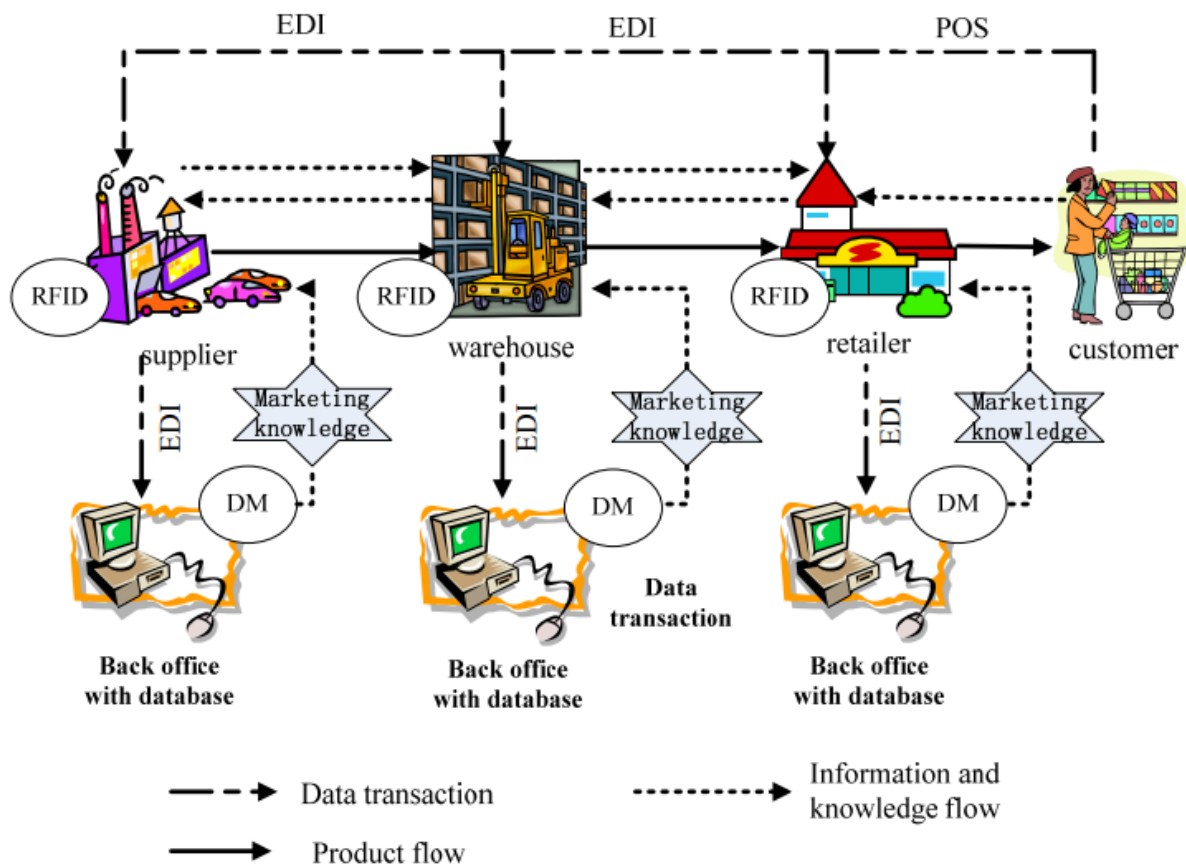
WHY ARE INFORMATION SYSTEMS ESSENTIAL TO TESCO?

IT systems have become the backbone of every major organisation in the world. IT systems enable organisations to gather and store data electronically and disseminate information instantly. They facilitate the sharing of information between different branches off the organisation and help in strategic planning and implement change management (Gunasekaran and Ngai, 2004). Various IT systems enable Tesco to organise and execute a gigantic amount of work efficiently and accurately reducing human labour.

IT systems are crucial for Tesco's E-Commerce sales as well as in store operations. From electronic data interchange (EDI), internet, intranet, extranet and web-based point of sales (POS), IT systems have enabled Tesco to expand their operations in an efficient and systematic manner. This has resulted in high turnover, low effort and expense and greater customer satisfaction. IT systems have enabled Tesco to add value to customers by integrating every aspect of customer

needs and wants from product search to product delivery whilst minimising time and cost (Simchi-Levi et al., 2003).

Fig 1. IT's adopted in a retail SC.



Tesco's use of IT ranges from product sourcing, supply, storage, marketing, store retail, online sales, data gathering, customer care and a myriad of other applications. Tesco has specific IT systems which deal with projects, procurement, inventory, management, logistics and marketing. All the IT systems are designed to work with each other to facilitate and improve performance (Xie and Allen, 2013).

INFORMATION SYSTEMS IMPLEMENTED BY TESCO

Tesco has adopted and implemented a wide range of systems such as electronic data interchange, point of sales and radio frequency identification. These IT systems have enabled Tesco to keep on top of his logistical and operational activities.

IT	Information technologies
SC	Supply Chain
SCM	Supply Chain Management
EDI	Electronic Data Interchange
POS	Point of Sales
CRM	Customer Relationship Management
RFID	Radio-Frequency Identification

Electronic Data Interchange (EDI)

EDI is a standardised business transaction conducted from computer to computer (Walton and Maruchek, 1997). This technology allows information to be passed from retailer's computers to supplies computers throughout the whole supply chain. EDI allows for the sharing of information in real time across Department and is extremely efficient and accurate. EDI can place electronic orders, bills of landing, invoices and transmit inventory data rapidly. It allows for transactions and orders to be processed quickly over the internet and is efficient in information collection. The timely exchange of information saves of EDI make it an indispensable piece of technology (Bamfield, 1994). EDI is separate from other information exchanging systems because of two features:

- (a) EDI allows Business to business transactions only (not between individual consumers)
- (b) EDI allows transaction only between databases or computers (not individuals)

Tesco uses EDI to communicate with the suppliers, warehouses, and many other internal and external branches.

Radio-Frequency Identification (RFID)

RFID is a microchip tagging system which identifies items. A microchip with a coiled transmitter is inserted into products and gives off a signal which is read by an antenna. RFID store information of a products name, location, manufacture date, expiry date, price, transportation details and many other related information. In fact according to Singh (2003), the RFID can hold 40 times the information of a normal barcode. All this information can then be read by a scanner.

The main difference between radio frequency identification and barcode is the process of scanning. Does bar codes can only do on site scanning radio frequency identification can do the scanning remotely. The Information can then be relayed through transmitter to the necessary locations making this method more versatile. End features of radio frequency identification are the real time application and data capture through automatic processes. These features allow for information collection in a precise and accurate way and enable smooth logistical and operational conduct.

Due to the potential huge cost of tagging every item with RFID, Tesco applies its RFID technology to only transport-unit or case level (Karkkainen, 2003). Tesco tags the containers with RFID, and the containers are rolled out to different stores. Due to the radio frequency, Tesco knows which containers are destined for which store. If any errors occur whilst loading cases or containers to the wrong destinations, an alert is sent out to the operator who can take corrective action. By using RFID technology Tesco reduces errors and balances the inventory stock of each store accurately. Asda first started the RFID trials in 2003 and has been expanding its uses ever since.

Data Mining

Data mining is a very important aspect of supply change management and has five primary uses:

1. Checking the customer's credit history to reducing the level of risk to the business (Kusiak, 2006)
2. Reducing stockout or overstock by analysing the movement of warehouse stock in relation to product type, product location and shelf space (Lee and Siau, 2001)
3. analysing customers' previous behaviour and performance to Forecasting customer demand and requirement (Kusiak, 2006; Katsaras et al., 2001), and justifying resource allocation by segregating customers based on their contribution to the company (Aeron et al., 2010)
4. Improving CRM by providing a deep understanding of customer behaviour and needs (Kusiak, 2006)
5. Optimising strategies relating to market segmentation, market targeting, market differentiation and positioning (Forcht and Cochran, 1999; Katsaras et al., 2001).

Data mining is the process of gathering specific data from a large amount for the purpose of predictive management models and decision-making (Han and Kamber, 2006). Generally companies gather a huge amount of data through computer and business transactions and all the data is sent to a warehouse where it can be examined and analysed to extract useful and relevant data from the not so useful (Lee and Siau, 2001). Useful data gathered from this mining process can be used by executives and management for decision-making purposes and operational procedures. In Tesco stores data mining using loyalty cards provide a deep and profound amount of information on consumers and their habits. Data mining allows retailers to understand consumer habits and buying patterns and enables them to Taylor their services to the customer's needs (Byrom, 2001).

Tesco operates a customer reward scheme through its customer loyalty cards. Customers can apply for a Tesco loyalty card and receive one point for every pound they spend on a product or service from Tesco. The points are then redeemed later against the cost of other purchases. Tesco also mail and email vouchers to customers for products the customers normally buy. Whilst the loyalty card offers consumers reward for their purchases it also allows Tesco to monitor their

customers buying pattern and tailor their marketing strategy based on the customers desires and needs.

Tesco is a pioneer when it comes to effective Data Mining and analysis and According to Marketing Week (2008) one third of the UK population has a Tesco Club-Card.

If this information is correct, it would mean that Tesco holds information and knowledge to the purchasing habits of one third of the UK population and can use this information for future management and marketing strategies. According to Marketing Week (2008) Tesco now embed the Clubcard information into their product ranges, prices, promotions, space allocations, store designs and locations, and marketing communications, which improves its operations and offers competitive advantages.

TESCO'S POTENTIAL KNOWLEDGE MANAGEMENT CHALLENGES

Tesco is a pioneer in the field of IT system management and utilisation. Its outlook towards the use of technology is positive and ahead of its competitors such as ASDA and MORISONS. The consumer market for both products and services are however shifting more and more towards the online sector. Customers are now able to compare prices between different products and services through comparison websites. Customers can now search for specific items online and find retailers close to them. The competition for Tesco now is not only the other supermarkets with physical stores, but the online giants such as AMAZON and EBAY. Amazon has a very easy to use interface, is trusted by users, has a fast delivery system and is very customer centric.

EBAY has millions of independent retailers under one umbrella offering goods at rock bottom prices. There are many other online services which cut into Tesco's market share. Tesco will need to find a way to appeal to the customers who use those services and find ways to acquire and retain those customers.

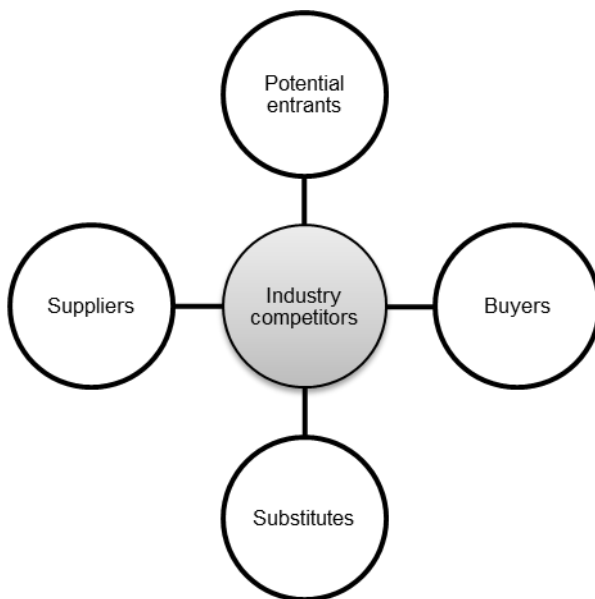
Amazon began as a facilitator company helping to sell books. They then began to facilitate the selling of other items for individual retailers before launching and selling their own brands. They are now one of the largest companies in the world.

Tesco is big enough to create an online e-commerce open platform allowing other retailers to sell their products alongside Tesco products. Rather than compete with the individual retailers bring

them under the same marketing fold and give competition to the online giants such as AMAZON and EBAY.

TESCO AND PORTERS COMPETITIVE STRATEGY.

Figure 1: Porter's five forces framework



Source: Adapted from (Karagiannopoulos, Georgopoulos and Nikolopoulos, 2005, p.68).

Porters 5 forces developed in the 1980s by Michael E. Porter identifies 5 factors which contribute to the success and failure often organisation.

Competitive rivalry

This identifies the number of competitors competing for the same customer base. These are rival companies offering the same or similar products or services. Tesco is the biggest superstore in the UK and had a 30.4% market share (Tesco, 2010) compared to its closest rival Asda which has a 17.5% market share Asda (2010). Other superstores fall far behind. Both the stores sell groceries, retail food, clothing and general merchandise and produce. They compete for the same market however they use different IT approaches. Whereas Tesco adopted a Customer Clubcard reward system thereby mining data and using it to further their marketing policies, Asda took on an approach of 'consistently low-price policy' which whilst gaining

customer confidence did not equip them with any information of power to further their goals.

Supplier power

This is the power the supplier has over the company. Supplier power can result in price increase, shortage of goods, delay in goods arrival. Tesco is a conglomerate with huge buying power. Suppliers would need to conform to Tesco's need and the risk of them being under the power of suppliers are minimal.

Buyer power

Buy a power is the power the consumers have over the company. Can consumers buy the products from other suppliers? do they consumers have the power to dictate the price? Tesco has the biggest customer membership out of all the superstores. According to Marketing Week (2008) one in 3 UK shopper has a Tesco Club Card. However the chances are moderate that customers will shop around for better quality and prices and will visit rival stores in the search of better bargains. But the chances of customers holding them to ransom are quite slim.

The threat of substitute

Is there a probability that another product like yours exists on the market at a reduced price? Can your product be substituted easily? A substitute version exists for all the products and services that are available at Tesco. Other retailers such as ASDA and MORISON are also competitive substitute stores.

The threat of a new entry

Can new competitors easily enter the market? What kind of capital is required for a similar start-up? Fortunately, the threat of new entrants is very low due to the huge start-up investment required as well as many other dynamics. The only threat of new entry would be from multi-national companies of other industries who may decide to enter the industry.

HOW COULD TESCO IMPLEMENT ENTERPRISE RESOURCE PLANNING

Enterprise systems have three properties (Mabert, Soni and Venkataramanan, 2001):

1. ERP systems are multifunctional in scope, tracking a range of activities such as financial results, procurement, sales, manufacturing, and human resources.

2. They are integrated in nature, meaning that when data are entered into one of the functions, information in all related functions is also changed immediately.
3. They are modular in structure and usable in any combination of modules. A firm can implement all the modules or a subset of them, as well as connect to other support systems, including 'bolt-ons'.

Tesco could benefit greatly by implementing Enterprise Resource Planning (ERP). To begin with ERP would eliminate the need to store different information on different computer systems and integrate everything under one system, this would make the whole SCM easier (Davenport, 1998). The cost of maintaining so many different systems would be reduced, and the companies financial and human resources would be freed up. The consolidated data would provide better insight and make accounting, procurement, project management, risk management and compliance, and supply chain operations easier to oversee.

The Transition to a fully integrated system will cause some disruptions to the standard processes for a while and there are bound to be teething issues, however with careful planning and a staged transition the full integration could be achieved.

The process would not be as hard for Tesco as other organizations with less familiarity with IT. Tesco already has the right outlook and has initiated many of the groundbreaking initiatives needed to fully enter the ERP system and will bring greater functionality and transparency to the whole global Tesco Network.

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