PRACTICAL CASE STUDY OF «INFORMATION SYSTEMS AND TECHNOLOGIES IN THE MANAGEMENT OF FOREIGN ECONOMIC ACTIVITY»

Case Study: Management Information System at Dell

Management information system involves the information system and the organization. MIS begins where computer science ends. Computer scientists deserve accolades for developing and delivering even more advanced forms of information technology: hardware technology; software technology; and network technology. Yet because no technology implements itself, there is more to MIS than just information technology. MIS has dimensions. The four interrelated dimensions of MIS are as follows: First, MIS involves not just information technology, but also its instantiation; second, MIS involves, as reactive and inextricable elements, both an information system and its organizational context; third, MIS involves information technology as a form of intellectual technology; and fourth, MIS involves the activities of a profession or corporate function which are integral to the essence of what MIS is (Currie & Galliers, 1999).

Dell Computer Corporation: Company Background

Dell Computer Corporation is a major manufacturer of personal computers, computer peripherals, and software. Among the leading producers of computers in the world, Dell sells its products directly to customers through the Internet and mail-order catalogs rather than through retail outlets. The company is based in Round Rock, Texas. At Dell Computers, customers are brought into the product planning and manufacturing processes, with all employees encouraged having contact with customers. Through effective collaboration across boundaries, ideas can be shared about product designs and value propositions. The result is faster and more customer-focused product and service innovation. To produce the capacity for this, considerable attention must be placed on organizational structures, processes, skills and culture. Such elements may need a radical overhaul in established companies (Dennis & Harris, 2002). Dell was founded in 1984 by

Michael Dell. In 1983, during his freshman year at the University of Texas, he bought excess inventory of RAM chips and disk drives for IBM personal computers from local dealers. He resold the components through newspaper advertisements at prices far below retail cost. By 1984, his sales totaled about $80,000 a month. In April 1984, Dell dropped out of school to launch his company (Ford, Honeycutt, & Simintiras, 2003).

The new company soon began manufacturing its own IBM-compatible computers under the name PCs Limited. Because Dell sold computers directly to users through advertisements in magazines and catalogs, the company could price its machines lower than those sold through retail stores. Sales reached nearly $6 million during the company's first year, climbing to $34 million the following year. By 1987, Dell was the leading mail-order computer company in the United States. In that year, it created a sales force to target large corporations and began adding international offices to capture the direct-mail market outside the United States (Ford, Honeycutt, & Simintiras, 2003). While the company continued to grow rapidly; Dell experienced a series of setbacks that hurt profits. In 1990, the company began selling computers through retail stores, an effort it abandoned in 1994. In 1991, Dell launched a line of notebook computers, but quality problems and inadequate production planning forced the company to stop selling for a year. In 1994, Dell launched a new line of notebook computers and expanded efforts to increase overseas sales. Dell also began focusing on the market for servers, which used the computers to run local area networks. By the late 1990s, Dell was firmly in place as the world's number one direct seller of computers. More than 50 percent of the company's computer sales transactions took place via its website, which generated worldwide sales in excess of $40 million a day (Ford, Honeycutt, & Simintiras, 2003).

Information Processing Tools

Information processing or Data processing is the analysis and organization of data. It is used extensively in business, engineering, and science and an increasing extent in nearly all areas in which computers are used. Businesses use data

processing for such tasks as payroll preparation, accounting, record keeping, inventory control, sales analysis, and the processing of bank and credit card account statements. Engineers and scientists use data processing for a wide variety of applications, including the processing of seismic data for oil and mineral exploration, the analysis of new product designs, the processing of satellite imagery, and the analysis of data from scientific experiments (Thierauf, 1978).

Data processing is used extensively in business, engineering, and science and to an increasing extent in nearly all areas in which computers are used. Data processing is divided into two kinds of processing: database processing and transaction processing. A database is a collection of common records that can be searched, accessed, and modified, such as bank account records, school transcripts, and income tax data. In database processing, a computerized database is used as the central source of reference data for the computations. Transaction processing refers to interaction between two computers in which one computer initiates a transaction and another computer provides the first with the data or computation required for that function. Most modern data processing uses one or more databases at one or more central sites (Thierauf, 1978).

Transaction processing is used to access and update the databases when users need to immediately view or add information; other data processing programs are used at regular intervals to provide summary reports of activity and database status. Examples of systems that involve all of these functions are automated teller machines, credit sales terminals, and airline reservation systems (Thierauf, 1978).

The information processing tools that Dell uses include computers, the internet, maps, spreadsheets, models, and databases. For the operational level of Dell, the most appropriate tool for information processing is maps. Through the said information processing tool, decisions on how to operate the organization can be initialized and made. Maps can be used to determine which country/place information will be acquired from, it can also assist in determining the demographic level of people and information will be gathered . Maps can be in the form of charts that can also provide necessary information. The information

gathered in turn can assist in helping to decide how an organization will be operated. For the tactical level of Dell, the most appropriate tool for information processing is databases. Through the said information processing tool, the records that can assist in finding out the strength and weakness of the company can be used to determine the tactic that will be used by the organization. For the strategic level of Dell, the most appropriate information processing tool is the internet or World Wide Web. Through the internet, trends and strategies by other companies can be known. After analyzing the trends and strategies used by other companies, an appropriate strategy can be formulated to use by the organization.

Inventory control systems

Individual businesses need, first and foremost, an efficient inventory control system. This implies the minimum amount of inventory that will provide the consumers with what they need whenever and wherever they need it. Effectiveness of the inventory system means basically having an inventory mix that is most likely successful in satisfying consumer needs (Samli & Sirgy, 1995). The inventory control systems used by Dell is up to date and reliable to prevent problems to arise. The inventory system of Dell makes sure that anything the consumer need will be available to them at any given time. It is also what the company uses to know if certain products are still available or misuse of the inventory system may cost problems to the company.

Conclusion

Management information system involves the information system and the organization. Dell benefits a lot from the management information system. The system helps the company create strategies that will help the company conquer any problems and threats from competitors. The system also assists the company in processing the needed information. Management Information Systems also helps a company to create or update its inventory control system.

Recommendations

Since the MIS of a company is a vital part of its operations and its survival in the modern world, it must be well updated and it must compete well with MIS's

competitors. The MIS of a company should be created from high standards so that it can be of stiff competition against its counterparts. The MIS system should help the company to achieve its goals and assist the company in reaching its potential.

Questions:

1. Comment on the MIS in Dell and suggest the positives and negatives of MIS in Dell?

2. The dell directly sells its computers to the customer whether it will give them good and reliable information or they are lacking in information system due to this move?

3. Develop the information flow diagram for dell and suggest some improvement in the same.

4. MIS is a combination of Management, Information and System otr of the three parts of the information system in which area does the Dell lacking?

CASE STUDY OF CEMEX: INCORPORATING IT INTO BUSINESS

Founded in 1906, Cemex is one of Mexico's few truly multinational companies, with market-leading operations in Mexico, Spain, Venezuela, Costa Rica, Philippines, Panama, Dominican Republic, Egypt, Colombia, and a significant presence in the Caribbean, Indonesia, and the southwest United States. It is the largest cement company in America and one of the three largest cement companies in the world, with revenues of $4.8 billion and close to 65 million metric tons of production. Cemex and its subsidiaries engage in the production, distribution, marketing, and sale of cement, ready-mix concrete, and related materials. Its strategy includes focusing on cement and concrete products, diversifying globally to cushion against volatility in local markets, developing efficient production and distribution processes, using IT to help increase flexibility, improve customer satisfaction, and reduce bureaucracy and excess staffing, and providing training and education for employees. Its state-of-the-art Tepeaca facility supplies one fifth of the Mexican market and may be the lowest cost cement producer in the world, with operating costs of $25 per ton, roughly $10 lower than the industry average, and emissions far lower than legal requirements. In 1992 Cemex purchased Spain's two largest cement companies, reviewed, their operations thoroughly, invested in facilities, and reduced the workforce dramatically, such as by consolidating 19 offices into one.

Although it was a laggard IT user through the 1980s, Cemex is now widely recognised as a company that uses IT extensively and views IT as an integral part of its long-term strategy. Lorenzo Zambrano, a Stanford MBA whose family owned a third of the stock, became its CEO at age 41 in 1985. In 1987, he hired an information system director and gave him the mandate of developing Cemex's then primitive IT capabilities. Within a year, dispersed operations were being linked via satellite. In one case, a cement plant in a town with only 20 telephones used a satellite dish to transmit voice and data, thus bypassing Mexico's chaotic phone system. By 1998, managers could use the satellite-based communications

network to monitor operations and market conditions all over the world and to communicate using voice, video, Lotus Notes, and other technologies.

Application areas that demonstrate the importance of IT include management information and control of operations. Cemex managers can immediately link to any of the 18 plants in Mexico and immediately access the status of each cement kiln, recent production data, and even the deployment of trucks dispatched by different cement and concrete distribution centers.Financial statements are available two days after the end of the fiscal month, an endeavor that used to take a whole month. Eliminating these lengthy delays in evaluating production, costs, and sales volume helps in running a lean, low-cost operation by making it possible for management to take action quickly instead of waiting almost two months to just receive the data in some cases.

Use of IT in controlling operations occurs at many points. Cemex's ready-mix delivery trucks are equipped with dashboard computers that allow tracking using global positioning satellite technology. A central dispatcher in a region constantly reroutes the trucks as customers cancel, delay, or speed up orders. In 1995, because of traffic gridlock, capricious weather, and labor disruptions at the construction site, Cemex could promise delivery no more precisely than within three hours of the scheduled delivery time. Such conditions often forced customers to cancel, reschedule, or change half of their orders. Today, at its largest operations in Mexico and Venezuela, Cemex is committed to delivering ready-mix shipments within 20 minutes of the scheduled time. The reason for this dramatic improvement in customer service is its dynamic synchronization of operations, which has increased the productivity of the company's trucks by 35%. The result is significant savings in fuel, maintenance, and payroll costs, and a considerable increase in customer goodwill.

A Cemex news release in September 2000 announced the launch of CxNetworks, a new subsidiary that will build a network of e-businesses, as an integral element of its overall e-enabling strategy. CxNetworks will leverage Cemex's assets onto the Internet and extend the reach of the company into

marketplaces that complement its core business. CxNetworks will initially focus on three business areas: the development of online construction marketplaces, the creation of an Internet-based marketplace for the purchase of indirect goods and services, and the expansion of Cemtec- Cemex's information technology and Internet consulting services company into new markets. CxNetworks is in the process of developing and will soon launch a series of online construction market places with a variety of local partners in South America, Europe, the United States, and Mexico. These businesses will offer an array of construction products, including cement, as well as online services and information to small and large contractors, builders, and other construction industry participants.

Questions For Discussion:

• How did Cemex fundamentally change the way it conducted its business?

• What role do information systems play in Cemex's strategy and business model?

• How much do information systems help Cemex deal with its problems and compete in the industry?

CASE STUDY OF CHINA TELECOM: ERP IMPLEMENTATION

China Telecom Corporation, the world's largest operator of fixed-line communications, was formed when the state owned China Telecommunications Corporation reorganized. China Telecom employs 350,000 workers throughout China, who attend to the company's operations in domestic and international fixed-line networks; fixed-line voice, data, and information services; and the settlement of international telecommunications accounts. The company has maintained steady growth despite heavy competition from mobile phone services.

In 2002, the company became a public company listed on the New York Stock Exchange (NYSE). That same year, the United States (US) granted China Telecom a license to provide international telephone and Internet service between the countries. These steps were part of a transition from a traditional state-run enterprise to a modern enterprise based on larger profits and a wider customer base. However, to succeed as an international telecommunications powerhouse, China Telecom had to solve several problems. First, the company required a state-of-the-art IT infrastructure. Second, it needed to comply with international reporting regulations for publicly traded companies. Third, it needed to integrate all of its business functions and enable real-time management. Together, these initiatives would increase organizational efficiency, tighten control over internal operations, and promote better collaboration among different departments.

For a solution, China Telecom decided to invest in Enterprise Resource Planning (ERP) software. The company could have written its own software to link its different business functions and organizational units, but this would have been very costly and time-consuming. It was much easier to use an ERP software package from a recognized vendor. The software is based on best-practice business processes, which would help the company meet international reporting requirements.

According to Shiping Liang, director of the application division at China Telecom, the company chose MySAP ERP from SAP as the backbone system because of its powerful functionality and integration capabilities. Among the core

business processes that MySAP ERP supports for China Telecom are engineering project management, finance, controlling,procurement, and human capital management. SAP's ERP financials module supports local currencies, markets, and languages, including Chinese. The SAP human capital management module automates human resources processes and integrates them across global operations. The software meets regulatory requirements for more than 50 countries.

To promote data integration, China Telecom also adopted two components of SAP Netweaver: SAP Business Intelligence (SAP BI) and SAP Enterprise Portal (SAP EP). SAP Netweaver uses XML and Web services to link the enterprise system with a company's existing systems to create new cross-functional applications. SAP Enterprise Portal provides a single point of access to data from multiple systems, integrating the data in a single view for the user. SAP Business Intelligence provides data warehousing capabilities to integrate business data from multiple sources for company-wide reporting.

After considering a number of vendors, China Telecom selected Hewlett-Packard (HP) hardware to run its ERP software because of its scalability, flexibility, low total cost of ownership, and ability to support SAP. Specifically, China Telecom chose the HP 9000 server family to run its SAP applications and HP StorageWorks XP128 Disk Array for its network storage infrastructure. Eventually, more than 30,000 employees will use the SAP and HP solution at more than 20 China Telecom subsidiaries. The deployment of the SAP software reflects the needs of each subsidiary. For example, most of China Telecom's business comes through Guangzhou and Shanghai, so those offices will use the financial, operations, human capital management, and analytic capabilities of MySAP ERP. The headquarters in Beijing will use MySAP ERP to run human capital management functions to centralize human resources management and consolidate enterprise-wide information.

The integration of data from MySAP ERP has accelerated the flow of information among accounting, procurement, and engineering management functions and encouraged collaboration among departments. Integration of data

between the human resources and accounting functions facilitates analysis of personnel costs and <u>performance- based compensation plans</u>, which were previously very time-consuming. The software provides users with quick and easy access to unified data and applications through a Web browser. The hardware platform has stood up to the test of making large volumes of critical data available 24/7.

Going forward, China Telecom will focus on using MySAP ERP to further integrate with other systems so the company has a complete view of all its processes with customers, employees, and supply chain partners.

Questions to Discuss:

1.   What problems did China Telecom face? How did these problems affect China Telecom's business? How has the company chosen to solve these problems?

2.   What other solutions might the company have tried? Analyze the solution that China Telecom chose from the people, technology, and organization perspectives.

3.   Did China Telecom choose the best solution? Explain your answer.

CASE STUDY ON INFORMATION TECHNOLOGY MANAGEMENT: FRITO-LAY'S LONG-TERM IT PLAN

Because the rate of technological change is so rapid, most people see IT through the narrow lens of short-term, silver-bullet solutions. IT vendors want you to believe that their important new technologies will blow away what has come before. You can't blame a salesperson for trying to sell, or CIOs for having a queasy buy-or-lose feeling, but this attitude is precisely the opposite of the one companies should be taking. We would argue that because the winds of change affect IT more than any other area of the organization, IT benefits most from a long-term, disciplined, strategic view, and a square focus on achieving the company's most fundamental goals.

For example, Frito Lay's strategic goal has always been to make, move, and sell tasty, fresh snack food as rapidly and efficiently as possible. That goal hasn't changed since 1930s, when founder Herman Lay ran his business from his Atlanta kitchen and one delivery truck. He bought and cooked the potatoes. He delivered the chips to the stores. He collected the money and knew all his customers. He balanced the books and did his own quality assurance. Herman Lay knew how to conduct the perfect "sense and respond" e-business before such a thing ever existed, for he held real-time customer, accounting, and inventory information all in one place – his head!.

After years of spectacular growth, the company became progressively distracted from this simple business model. By the early 1980s, the company's sales force had swelled to 10,000, and information grew harder and harder to manage. The company's old batch-based data processing systems were all driven by paper forms that took 12 weeks to print and distribute to the sales force. All sales transactions were recorded by hand; reams of disparate data were transferred to the company's mainframe computers. Much was lost in the process of setting up a dozen different functional organizations and a variety of databases, none of which communicated with each other.

This modus operandi made it impossible to change prices quickly or develop new regional promotions, streamline production, or improve inventory management. It was as if Herman Lay's company had suffered a spinal cord injury, with the brain and body no longer connected. At the same time, the company was seeing the rise of strong regional competitors. The leaders realized that if trends continued as they were, its overall revenues would fall significantly by early 1990s.

Mike Jordan, who took over as CEO of Frito Lay in 1983, decided to tackle the problem. He reconstructed the company as a hybrid organization that was neither totally centralized nor decentralized. His goal was to teach the company to "walk and chew the gum at the same time", as he put it, by separating the company's two <u>competitive advantages</u>: the purchasing, production, and distribution leverages of a national powerhouse, and the local resources that gave the company regional speed and agility.

All this led to an organizational design that kept purchasing, manufacturing, distribution, systems, accounting, and R&D as the centralized platform, leaving the decentralized sales and marketing organizations to launch their store-by-store and street-by-street offensives.

Having identified the company's strategy, Jordan then developed a long-term renewal (as opposed to "rip and replace") plan. An executive committee-comprised of CEO, CFO, CIO, and two executive vice presidents- outlined a shift from paper to a risky, emerging handheld technology for the sales people on the street, as well as transformation from batch accounting to online operational systems. The goal was to digitally reconnect the company's nervous system. Equipped with the cool new handhelds, the sales force would be able to manage price, inventory, and customer changes in real time and connect to supply pipeline. The handheld computers would also establish a technological "beach-head"- one sufficiently important to keep business's attention and achieve fast operating results.

Paying for all this, of course, would not be easy. The journey would take from 1984 to 1988, at a huge cost (at the time): $40 million for the handhelds and about $ 100 million for databases and core systems. Some of the executive committee balked, arguing that efficiencies gained by the technology would be lost by the sales people working fewer hours. But the company had no choice but to revitalize its regional sales, and though the systems overhaul would be costly, staying put would be even costlier.

To fund the new computers, Jordan set up a long term, ongoing funding mechanism designed to keep IT spending both predictable and fairly stable from year to year. To get things rolling, each sales region had to commit to a reduction in selling expenses from 22 cents on the dollar to 21 cents within a year of the handhelds' installation. The savings would be achieved by increasing sales at constant cost, reducing costs, or a combination of two.

The scheme worked; with the new system in place, the company saved between 30,000 to 50,000 hours of paperwork per week. By 1988, savings resulting from better control over sales data came to more than 4 40 million per year – savings that in turn funded the renewal of the core data systems. Frito Lay was able to cut the number of its distribution centers, reduce stale product by 50%, and increase its domestic revenues from $ 3 billion in 1986 to $ 4.2 billion by 1989. Today, Frito lay continues to be the dominant player in the snack-food industry.

Frito Lay's technology story received a lot of press at the time, mostly because the handheld technology was sexy. But notice what the story was really about: it was about executing Herman Lay's original, real-time business experience –feeling the money jingling in the pocket and seeing the inventory in the truck!

In 1965 Pepsi cola and Frito Lay merged to form PepsiCo.

Today, Frito-Lays has more than fifteen $100 million brands: LAY'S®, FRITOS®, CHEE.TOS®, BAKEN-ETS®, RUFFLES®DORITOS®, FUNYUNS®, TOSTITOS®, BAKED LAY'S®, WOW!®, SUNCHIPS®, MUNCHIES®,

OBERTO®, ROLD GOLD®, GRANDMA'S® Cookies and Quaker Chewy Bars®, Quakes® and Fruit & Oatmeal Bars®.

Questions:

1.   What IT measures were taken by Jordan to make the company fighting fit in the market?

2.   Were the IT risks taken by Jordan appropriate? Why?

CASE STUDY OF ZARA : APPLICATION OF BUSINESS INTELLIGENCE IN RETAIL INDUSTRY

ZARA is a Spanish clothing and accessories retailer based in Arteixo, Galicia. Founded in 24 May ,1975 by Amancio Ortega and Rosalía Mera, the brand is renowned for it's ability to deliver new clothes to stores quickly and in small batches. Zara needs just two weeks to develop a new product and get it to stores, compared to the six-month industry average, and launches around 10,000 new designs each year. Zara was described by Louis Vuitton Fashion Director Daniel Piette as "possibly the most innovative and devastating retailer in the world. The company produces about 450 million items a year for its 1,770 stores in 86 countries.

The Zara has made of use of <u>Information Systems (IS)</u> and to advance in many areas. This has resulted in huge success for the company. This included application of <u>Business intelligence (BI)</u> involves technologies, practices for collection, integration and applications to analyze and present business information. The main aim of business intelligence is to promote better business decision making.

BI describes a group of information on concepts and methods to better decision making in business. This is achieved by employing a fact based support systems. The intelligence systems are data-driven and sometimes used in executive information systems. Predictive views on business operations can be provided by use of BI systems. predictive views on business operations can be provided by use of BI systems since historical and current data has been gathered into a data bank performance management benchmarking is done whereby information on other companies in the same industry is gathered.

Since the Zara's have large network and therefore dealing with large volumes of data, an enterprise information system has been employed in the firm. This is generally a type of computing systems that involves an enterprise class that is,

typically offering total quality service handling large volumes of data and able to sustain a big organization. With this system, a technology platform is provided which enables the enterprise is provided to that information can be shared in all useful levels of management enterprise systems are important in removing the problem of fragmentation of information. This happens when there are numerous information systems in an enterprise. The problem is solved by developing a standard data structure.

The Zara being big organization, the enterprise systems is housed in many different data centers, and includes content management system as the main application. The Zara team comprises technology professionals. These include content specialists, network and system engineers, flash developers, database business analysts and administrators, software developers, quality assurance managers and computer and applications support technicians. All these specialists work in tandem to bring about competitive advantage to business by allowing for quick-response capability.

The Zara is devoted to integrating information technology appropriately into all areas of its operations and activities. The range of services and resources available to its clients is attributed to the commitment of integration of IT properly in the organization. The client services group in the Zara partners with staff and clients to identify and meet each group's technological requirements. This group of technical advisors associates with departments to execute a roadmap for a team's technological vision and then defines this vision within entity projects.

Much support is required for invariable innovation. The Zara IT group is devoted to developing community through technology and operates closely with business associates. The IT group is devoted to developing community through technology and operates closely with business associates. The IT group has technical support and tools they require to come up with new ideas and spread the ideas to the wider community worldwide. This ensures that client needs are realized. A constantly growing state-of-the-art technology infrastructure has enabled the firm to develop and maintain a fully integrated organization/

enterprise. The infrastructure has enabled the firm to develop and maintain a fully integrated organization/ enterprise. The infrastructure entails a core of systems and attempts designed to produce the flexibility and capacity for innovation and growth.

The Zara thrives in an environment of change, experimentation and learning that is spreading over the boundaries for the application of IT in their business in the enterprises an easy-to-use modular tools, templates and platforms that involve all sides of life at the Zara firms including career development , administration and operations are implemented and developed.

In the Zara other web-based solutions are deployed with an advance knowledge management thereby making a big shift in the quality and speed of work in how the enterprises function. In the exploding growth of the software market a new world growth for the software market a new world of connectivity is realized in the Zara. The urgency of the business recognizing the importance of corporate portal has enabled linkage of information, data, people and knowledge to provide business solutions. The corporate portals come from consumer portals like Alta-vista, yahoo! and Lycos.

The portals (gateways) show the importance of letting clients have a wide scope of varied information on the web. This has given rise to the increase in multitasking, receiving information and checking from varied sources and thereby getting involved in projects that cross geographical boundaries with this technology the needs of the community, employees and even the extended network that is more advanced are served.

The Zara is possibly the most devastating and innovative retailer in the world. With more than 1000 shops world wide, the Zara has turned controlled over garment factories into a competitive advantage by making and designing the garments. By making the garments itself, it can quickly react to varying market trends. The Zara has been able to succeed in building a massive brand, without promotion or advertising but through the information systems and information technology.

CASE STUDY ON INFORMATION SYSTEMS: INTEGRATED CUSTOMER ORDERING SERVICE AT MARKS & SPENCER

Marks and Spencer is one of the leading retail organizations in UK which sell stylish, quality and great value clothing and home products , also quality food. They are one of the most popular brand among people not only in UK but globally. They have more than 600 stores in UK and constantly increasing many more around the world. It was founded when in 1884, Michael Marks opened a stall at Leeds Kirkgate Market. In 1901, its first registered store was located at Derby street, Manchester. By 1924 they started expanding and the head office moved from Manchester to London. Implementation of new policies and maintenance of services and value kept on adding to the success of Marks and Spencer. In 1998, it became the first retailer to earn a profit of £1 billion. The organisation commonly called as M&S has always followed the principles of Quality, Value, Service, Innovation and Trust since its founded. This is the reason why it has been successful, distinguished and popular among people.

Need of the Information System: Integrated Customer Ordering Service (ICOS)

M&S was facing several backlogs in order processing and complaints were increasing day by day. The company had invested a lot to move ahead in this competitive business environment but was unable to overcome this problem. The need of the hour was to have an customer service ordering information system implemented which can accurately and assuredly keep away these problems which were an obstacle in the success of a great retail organisation.

The retail market is immensely competitive and keep on upgrading their information system to meet the requirements of services. M&S started using up-to-date information system in its ordering system which made it stand different from other rival organisations. On 19 April, 2005 Marks and Spencer signed an alliance with Amazon Services Europe. In this agreement, Amazon Services Europe will host and provide with synchronized information system to M&S websites, telephone ordering systems and in store ordering systems. ICOS was

launched in 2006 and was based on Microsoft Windows NT Server and Oracle 10g databases. It also comprises various intelligence tools using DOS applications and is called as Rumba Server in M&S. This system enables ease of access of data and information across all stores and offices of the organisation. The system is efficient in dealing with the orders, vendors, manage information across the organisation, control the supply of incoming and outgoing products through a common database which gives solution to all problems related to above categories.

The business process improvement team has not only developed this application but has also installed it in all stores where in store ordering is available. The information system had to meet challenges like connecting all stores to common database so that all product related information and management related information could be shared across. It was not easy to interrelate thousands of product data and ordering information on websites, in stores and in offices. The system application must be in a way that the data is easily accessible through all channels and can be used through company intranet without paying heed to its location. The system included taking orders, order processing, order dispatch, order location, stock control and order prices. This helped M&S to expand their business systematically.

Working and Benefits of Integrated Customer Ordering Services

ICOS is an information system application used by M&S employees for various in store functions. This information system comprises data of all products like food, clothing, home ware etc. Each product of M&S has a unique identification code called as UPC number which is used in ordering. In a situation where customer wants a certain product for e.g. a TV, and that product is either unavailable or is a special requirement that has to be made or is not displayed in the store, that is when this system plays its role.

Order Taking:

Every user or employee as its unique ID or access code and a password which makes this system highly secured and prevents it from unauthorized access. An employee assigned to take orders enters his ID and password to find out any

information or to take any orders. When a customer orders certain product the agent enters its product code and the whole information from product details to availability and prices is displayed which can be conveyed to the customer. There is a tool bar which consists of different options available for the agent to save information from customer like name and address. This tool bar also has information about billing and lead-time of all products. Some products might not be displayed in the store while some can only be delivered like furniture. The system also proposes extension in delivery time to any date. As and when the agent enters customer name and details, a customer profile is created and a customer code is also generated and saved in his/her profile. The next step is payment. Once all required information from the customer is saved their is an option of payment on the tool bar. When that option is clicked several payment methods are made available on the screen like cash , visa card, credit card or cheque. The agent asks the customer and select the option that is told by the customer. Once all this information is submitted and payment is taken the customer is handed over with a printed receipt of product and money transaction details along with the unique customer code.

Order Enquiry:

If the customer wants to enquire about the order in future he/she just need to give his unique code to the employee. Once the code is entered on an option of enquiry on the tool bar the detailed information about the product is retrieved. This information states the status of dispatch or progress in order and also status notes entered by the manufacturing department. This information can further be stated to the customer. If required a receipt of the order confirmation can also be provided to the customer.

Order Upgrading or Editing:

This option on the tool bar enables an agent to add or cancel certain products from the order. This option is also used to edit customer details like address or shipping date or further payments. When an alteration or amendment is to be made, the agent enters the customer code and the information related to the order pops up

on the screen. This states if a particular order can be cancelled or not e.g. certain product is a special manufacture order already in process.

Special Offers:

Many times there are special offers available with certain products like buy one get 25% off on other. All these offers are already saved in this information system and is updated from time to time. Not that there are so many employees working in M&S and all employees need to be informed, so a hasslefree alternate is that ICOS already comprises these schemes and offers. There is an option of diary where these details are stored. As the agent enters his code to acquires access , he/ she can review the promotions and sales for the whole day and also take a printout if required.

Order Reports:

The orders taken throughout the day are stored in the system and can be retrieved as a whole or product category wise. If an agent or manager wants to know what all is sold or how many orders were taken throughout the day, they need to enter their ID and click on reports. The data is immediately available. If they just want to get report of the number of TVs sold they can get separate report as well. In this way the whole day report or report till a particular time can be seen in a summarized manner.

Order Display Availability:

If an agent in one store wants to know the availability or display of a product in any other M&S store he/she can just use the tool bar for display search or update search. This possible because as mentioned earlier all store are networked and data of all products in all stores are available to each store.

ICOS helps M&S employees to provide hassle free information to the customers and also helps taking quick orders leading to save time both of employee and customer. It also plays a very important role in uplifting customer loyalty.

Critical Assessment

ICOS proved to be boon to the organisations. It replaced the old fashion of ordering through fax or telephone across the units which involved manually entering data. The old process was highly time consuming as well as error prone. The new ordering system entered as an effectual way of providing high customer service, more number of customers handling, quicker response to customer queries, faster processing of orders, and above all having competitive advantage. Integrated Customer Ordering System as set up information flow across all M&S outlets and offices to give quality services.

M&S understood its competitive advantage and focused on exclusive strategy to sustain in the corporate market. Their sales and advancements have achieved higher levels among competitors. Customers are satisfied by the quick order process, be it in the store or home delivery. Marks and Spencer's evaluated utilization of maximum resources and importance of<u>competitive advantage</u>. Implementation of ICOS helped everybody right from employer to employee to customers.

The sharing of data across all units of M&S made the work so easily accessible that it could manage very effectively and efficiently. M&S has now focussed on development and research for expansion which has come into practice because their information system has made them free from most of the hassles. Now they can tactfully just look forward towards expanding of business.

The investments turned out to raise huge profits leading to <u>increase in productivity</u> and also reducing costs. ICOS has proved to be and information system which has given new heights to the company and an ultimate transformation to quality. The investment raised huge profits from this system and it was a transformation to the organisational working and approach.

CASE STUDY OF FEDEX: LEVERAGING INFORMATION TECHNOLOGY TO GROW BUSINESS

Federal Express is a global express transportation and logistics company that offers customers a single source for global shipping, logistics, and supply chain solutions. It was founded in 1973 by <u>Frederick W. Smith</u>. Since its inception FedEx pioneered the express delivery industry. The company focused on the core business of express delivery and provided overnight delivery services to the customers globally. However, the transformation of businesses and customers from old economy to the new economy forced FedEx to reposition itself from 'overnight delivery service' to a 'one-stop-shop' for the entire logistics requirement of the business. The company became the logistics service provider of leading organizations, like, General Motors.

Background of FedEx

During the late 1960s, Frederick Smith (Smith) chanced upon an idea to start an airline courier company. During this period, it was common practice to send packages as cargo on commercial carriers like American, United or Delta Airlines. This practice had a number of drawbacks because passenger airlines usually operated during the daytime and were grounded at night. In addition, freight forwarders (the company responsible for carrying the packages from the airport to the destination address) usually did not offer home delivery. Smith felt the need to start an airline courier company that would address all these problems. During his college years, he recognized that the United States was becoming a service-oriented economy and needed a reliable, overnight delivery service company designed to solely transport packages and documents. He wrote a Yale term paper on this idea, and received 'C' grade. His professor thought it would never work. Fortunately for Frederick Smith, he didn't take it to heart and ended up building that company he dreamed of.Smith found investors willing to contribute $40 million, used $8 million in family money, and received bank financing. He started Federal Express with over $80 million, making it the largest company of its time ever funded by venture capital.

In the last 36 years, FedEx has expanded horizontally with its five subsidiaries to include FedEx Express (formerly Federal Express), FedEx Ground (formerly Roadway Package System), FedEx Custom Critical (formerly Roberts Express), FedEx Logistics (formerly Caliber Logistics), and Viking Freight. As a result, the FedEx family has been able to compete collectively in the express transportation and logistics industries. FedEx's strategy is to corroborate on selling and synergies for all FedEx companies, but run operations separately and keep each company's strengths and markets separate. Today, services offered by FedEx include worldwide express delivery, ground small-parcel delivery, less-than-truckload freight delivery, and global logistics, supply chain management, and electronic commerce solutions. Federal Express is the world's largest package delivery company today.

FedEx began its' operations with the sole focus of improving customer segmentation, pricing and quality of services for the overnight delivery market in the United States. Since then, it has grown to provide leading document and freight services for the entire North America and for over 212 countries abroad.

Federal Express Corporation had the visionary leadership to become the first mover in the express transportation and logistics industry leaving FedEx with one source of differentiation: their ability to help in the control of the entire supply chain management.

The company's ability to use technology and create its own supply of resources has made it difficult for competitors to match the company's standards for service. FedEx has been successful mainly because of their technological advancements. Technology has allowed them to have superior customer service and quality that was unparalleled by any company. No company was able to offer overnight delivery of packages with the speed and precision that Federal Express did.

FedEx's modeling capability gave them a competitive advantage as they implemented new methods and technology. They currently have a SuperHub with several regional hubs and packages are managed and tracked by a system called

COSMOS. COSMOS – Customers, Operations and Services Master Online System, a centralized computer system to manage people, packages, vehicles and weather scenarios in real time. This system allowed customers to know where their packages are at all times and was later integrated for web use, allowing customers to track packages over the Internet. In addition, the customized delivery service of the company is unique in the market.

Leveraging Information Technology

In the late 1970s, FedEx saw a great benefit in using IT to simplify its business processes. Smith had very early on understood that speed, reliability and customer service was an essential factor for success in the global transportation industry.

The widespread use of the Internet from the early 1990s threw open significant opportunities for FedEx. Since the company already had an EDI based system on which it had spent a lot of money, FedEx decided to use a combination of Internet and the EDI. One example was the implementation done for the purchasing of products. FedEx purchased a product from a company called Ariba. Ariba was a requisitioning system that was housed on the FedEx intranet. The system was set up so that suppliers could maintain a database of catalogs that could be accessed by any FedEx employee.

The company website hosts more than 6.3 million unique visitors per month and handles on an average over 2.4 million package tracking requests daily. More than 2 million customers connected with the company electronically every day, and electronic transactions accounted for almost two-thirds of the more than five million shipments FedEx delivered daily. FedEx operates one of the world's largest computer and telecommunications networks- more than 75,000-networked computers and thousands of hand-held computers that recorded and tracked shipments. FedEx's data center processes more than 20 million information management system transactions daily, more than any other US company.

The company is involved in connecting 39 hubs across the globe, operating 677 planes and 90,000 vehicles, monitoring 200,000 employees and delivering six

million packages daily in 220 countries where every second was important. This is the 'FEDEX EDGE', for which the company is known for. FedEx transformed both customer and business transportation model with higher speed, reliability, <u>application of information technology</u>, improved material handling system and streamlined logistics network. The company popularized the concepts of '<u>just-in-time</u>' and 'build-to-order' which reduced customer's lead time and increased productivity. Apart from venturing into 'logistics solution provider' the company was able to maintain its leadership position in small package and light freight market through its unique 'hub and spoke' model.

The role information technology has played in FedEx's strategy is exciting. By using IT as a major part of its business, FedEx has reached an almost entirely new group of people. It has maintained its reputation and increased its business at the same time. IT has created a greater opportunity for customers in the global market. They can now request service, pay for that service, and track the package online. Customers no longer need to speak to FedEx. They are now free to order as they need, twenty-four hours per day, seven days per week. Because of this, FedEx's strategy has changed. It is now focused on the use of the Internet and other technological advances. Because this is such a critical aspect of the strategy, the implementation of the strategy had to be almost immediate. To compete with other major businesses in the industry, FedEx had to provide a service to customers that could be accessed using technology. They also had to provide a package tracking service. As they developed this service, their reputation and business grew.

FedEx has done several things with its value chain to develop new business. First they have always recognized the need to have technology and IT work to communicate the logistics that they run. They have developed internet technologies that work simply and efficiently to enable customers and sellers to use FedEx as a go between. This has enabled many companies to integrate FedEx technology into their own web sites for customers to use.

CASE STUDY OF FEDEX: PIONEER OF INTERNET BUSINESS IN THE GLOBAL TRANSPORTATION AND LOGISTICS INDUSTRY

Transportation is one of the largest industries in the world, and its sector range is very wide which include taxis, truck, train, ships, barges, airplanes, pipelines, warehouse and logistics service. For the industry, the three main trends were globalization of business, information technology development and new technology to support process efficient, and the market demand for more value-added. Hence, the companies in transportation and logistics industry depend on the global network of distribution centres to gain quick payment cycle and cheaper resources. In FedEx Corporation, as a leader firm in the industry, its centralized structures have always required, and facilitated billion dollar investments in IT and established the website from 1994. It provided a successful technology for the FedEx Corporation as a pioneer in the whole industry for e-business. This strategy became an advantage that they used to undermine their competitors' strengths and localized customer service. With a globally connected IT network, <u>FedEx was able to leverage their IT advantage to service their corporate accounts on a global basis</u>, rather than on a country by country basis.

Pioneer of Internet Business in the Global Transportation and Logistics Industry

FedEx Corporation created its own website form 1994, it is the first step and basis for the company to develop its e-commerce. FedEx.com is the first transportation website which could accept the one line order for package tracking and allow the customers to transact the business by Internet. Both shippers and recipients could access shipping information and print documentation via Internet. As the pioneer in the industry, FedEx should continually improve their system and service due to its competitor also created the Internet service and Internet software. For instance, the DHL launched the website in 1995, UPS spent billions on IT and electronic commerce. The express transportation associated with e-tailing would reach $7 billion in the year of 2000, but FedEx only handled with 10 percent of

purchase on-line goods. All of these brought heavy pressure to FedEx. In 1998, the company paid more than $2 billions to acquire the Caliber System, Inc. to increase the abilities and power on Internet service and e-tailing.

Because of the large potential market and lower cost, the Internet and e-tailing market was continually enlarging in the Global Transportation and Logistics Industry. To evaluate the performance of FedEx in Internet and e-tailing market should be from the view of five performance objectives. Firstly, from the view of cost, FedEx as the first one for Internet and e-tailing in the Global Transportation and Logistics Industry, it focused on long-term investment on IT and led the company to have the specific position in the area. For the intense competition, the company paid more than $2 millions to purchase Caliber System. It could effectively increase their market share in business-to-consumer delivery service. Hence, the investment partly made up the weakness against with UPS. Secondly, flexibility, the Internet service and e-tailing provide the convenience for the customers, increase a easy and quick channel for the transportation and e-tailing business. For instance, in the year of 1999, FedEx Marketplace created a link to the on-line shopping, the on-line shopper could click to the top on-line stores and with FedEx delivery. Thirdly, dependability, the establishing of the website enhanced the dependability between the organization and customers. The computer system supported the customers to know their goods conditions in the whole delivery process. For example, the company created software called FedEx Virtual Order in 1999 which provide Internet order and also provide the customers' catalogues for them on the website. Moreover, the IT system also enhanced the internal management of FedEx Corporation. For the enormous organization, the dependable information system should be the basis for the busy operation process. (I.e. in 1995, FedEx launched AsiaOne Network, it is a transportation routing system) Fourthly, speed, for the transportation and logistics industry, speed is one of the crucial elements for the customers choosing a transportation company. The online order and the unique information system in FedEx deal with the order and storage, goods and shipping process, every process could reduce the time than

before. For example, the FedEx Marketplace provided easy access to on-line merchants to offer fast FedEx shipping. Last but not least, quality, all of the strategies and performances about Internet and e-tailing could be linked to improve the quality providing for the customers and partners. For instance, the FedEx created e-business Tool in the year of 1997 which could support an easier connection with FedEx shipping applications. And the EuroOne network established also provide a powerful transportation routing system which linking more than 30 cities. All of this would enhance the service quality of FedEx's Internet and e-tailing.

Consequently, the FedEx had an explicit objective in the Internet and e-tailing market, for both financial and non-financial performance of organization in this area was focus on achieving their objective. For the customers and partners, FedEx try to provide more flexible, convenient, fast service by the Internet and e-tailing channel, created dependable and loyal relationships with them and build a perfect reputation in the market. For the own organization, it insisted on long-term investment on Internet and e-tailing area, it would lead to earn a long-term benefits. Besides, the organization continually emphasized on the infrastructure building and technology improvement, to create a dependable operation system and transportation team which could support the smooth operation in Internet and e-tailing market. All of these performances lead the development of FedEx. It could not satisfy only by the pioneer of Internet business in the Global Transportation and Logistics Industry but try to be the long-term leadership in this market.

Evaluation of FedEx Acquisition of Caliber System

To evaluate the success or failure for FedEx Corporation acquired Caliber Systems in 1998 should also form the different points of view. From the positive side, the company use $88 million acquired the Caliber System, Inc., it could provide the company a powerful technical support on Internet commercial at that time. In the period, the e-commercial was on the development stage in the Global Transportation and Logistics Industry, the long-term investment and acquisition of

Caliber System made the FedEx Corporation own the abilities and opportunities to be the pioneer and leader in this area. According to summary of benefits for M&A, The strategy helped FedEx Corporation entre a new market, broaden the business range, develop the new product and also gain new information technology. From the result, after the acquisition, in the following year, the company had an excellent performance, the net income increased 30 per cent and posting record earning risen 73 per cent.

However, as the passage of time, the competition in the market became more intense, despite of the e-tailing and electric commerce supporting, the report shown that both the volume and the income have a negative trend. From the view of financial report, the result had an obvious falling. This condition was cause of several factors. Firstly, the fuel pricing jumping was unexpected, it will increase the cost for the company. Secondly, it also meant the Caliber System did not blend in the organization completely. The organization was enormous, the operation was complicated, hence, just acquisition strategy without well association could not make the new party perform perfectly. For solving the problems, the FedEx Corporation announced reorganization on 19, Jan, 2000.

Consequently, it is hard to simply judge whether success or failure for the acquisition of Caliber System. The acquisition brought benefits, opportunities and also new operation method for FedEx Corporation. The negative result in the following years was also cause of multiple factors, i.e. the competition in the industry, the fuel price rapid rising and etc.

CASE STUDY OF AIR ASIA: INFORMATION TECHNOLOGY IMPLEMENTATION FOR BUSINESS SUCCESS

<u>Information Technology (IT) is one of the major enablers of AirAsia's successful low cost business model</u>. AirAsia had demonstrated the strategic value of information and communications technology (ICT) in improving competitiveness with a very high majority of its passengers making their bookings online. AirAsia was also the world's first airline to allow SMS (short messaging service) booking and payment of airline tickets. In 2003, AirAsia proud to be the first airline in the world to offer flight booking and payment via Short Messaging Service (SMS) and make their guests flight booking anytime and from anywhere 24 hours and 7 days a week. Apart from making a Flight Booking, AirAsia guests can also make enquiry on lowest fare, departure or arrival information and city codes. All this is available at a normal cost of RM0.15 cents per SMS and without any additional charges. AirAsia guests can also register to be the first to know of new promotional fares as soon as they are made available. AirAsia was also the world's first airline to allow SMS (short messaging service) booking and payment of airline tickets.

AirAsia move from the traditional business into modern business by implementing E-commerce and maximize the information technology (IT) in their business. AirAsia boost their e-commerce business with launching of AirAsia Vista Gadget with Microsoft on 31 January 2007. This gadget enables customers to keep update with live travel information such as destinations, itineraries and pricing and latest promotion. AirAsia enhance their service and maintain their low cost strategy by increasing use of technology and new innovation. They launched self check-in machines on February 2009, the technology introduce to eliminate long check-in queues in counter and minimize the manpower.

Traditionally in airline industry, majority of air tickets were purchase through travel agent or call centers. By 2003, the numbers of population in Malaysia owning a personal computer has been increase to 18%, this technology enable the development of low cost carriers (LCC).

The first successful and pioneered LCC was AirAsia in Asia. It is also the first airline in the region to implement online reservation and fully ticket-less travel. LCC pursued simplicity, efficiency, productivity and high utilization of assets to offer low fares. E-commerce helps LCC to simplify the process of purchase by online reservation and issuing of e-ticket, as such no middleman is required in this process. In terms of efficiency, LCC are able to perform real time transaction to a global customer for 24 hours a day and 7 days a week. The data provide in online booking combine with the right software will ease the business administration task to stored and categorized automatically, update in real time and accessed on demand. This is whereby LCC save cost on manpower to data entry this information. LCC also can fully utilize the resources of information such as booking seat, customer database to plan ahead their business strategy; this will help to minimize the empty seat and maximizes the sales of seat.

The operational environment of an airline industry is complex. Large network in the supply chain, continuous daily operation, and several external uncontrollable variables such as weather condition and government regulations become factors affecting airlines' performance. Given these complexities, operational planning and scheduling across the supply chain are important factors determining the success of any airline. Therefore , AirAsia apply APS system to optimizes its supply chain management. It works as the brain of supply chain activities by gearing activities in relation with customers and suppliers requirements. APS system clusters and classifies customer orders, forecasts future fulfillment requirements, checks resources availability and sets order priorities. Moreover, APS system helps AirAsia in gaining competitive advantage as it provides visibility across supply chain. APS system also improve AirAsia's strategic and operational performances particularly in the inbound and operational activities

AirAsia have better connectivity across the supply chain in terms of cross-functional scheduling and planning with suppliers and customers. APS system ensure each party works together in integration. Relationships among processes and their activities become visible. Furthermore, this shorten scheduling cycle, lead

time, and maintenance cycle leading to improved efficiency. Beside that, APS system enables AirAsia to have better understanding and control of the interrelationship between different variables constituting total performance. Complexity in measuring interrelationships can be manipulated by deploying an APS in a proper way. A good example could be the effect of a delay due to airport facilities or other variables such as bad weather condition. APS can help plan in advance for such situations so that proper actions can be planned to contain such situations. Other than that, The APS system will analyse the flying routes offering optimal profits for AirAsia given constraints such as geographical, short haul flights commitment i.e. AirAsia committed to serve flights no longer than four hours thus it only buys or leases small aircraft e.g. Boeing 737 and AirBus 320. Optimal flying route is imperative in deciding new destinations for AirAsia to serve. Aircraft maintenance quality is critical in airline industry. In AirAsia case, it is even more critical since AirAsia utilizes its aircraft fleet more than standard airlines. The visibility across the value chain given by APS will provide better collaboration between AirAsia and aircraft manufacturers and other suppliers. It will shorten over-haul time thus it will enable AirAsia to improve its fleets utilisation. Using APS system, AirAsia can save large proportion of its maintenance cost. Maintenance cost contributes approximately 9% to the overall cost of an airline.

The excellent utilization of IT have directly contributed to their promotional activities such as email alerts and desktop widget which was jointly developed with Microsoft for new promotions, brand building exercise with over 3 million hits per month and on the most widely surfed booking engines in the world as well keep the cost low by enabling direct purchase of tickets by consumer thus saving on airline agent fees.

AirAsia investment in technology to grow the business across all fronts is bearing fruit. ICT has enabled them to offer cutting edge products and to continue to offer quality service to their constantly expanding passenger base. AirAsia's use of ICT is second to none in the airline industry. All areas of their business are

supported by ICT, which allows them to be fast and efficient in servicing our guests, who use their technological tools to among others check flight schedules, book seats, pre-order meals and buy holiday packages. ICT has been instrumental in the success of AirAsia and over 80 percent of AirAsia's flight bookings are done via the internet.

Other than that, AirAsia also utilize mobile technology to disseminate information to their guests via handheld devices. Guests could look forward to further convenience through the services of their self check-in kiosks and web check-in facility and Air Asia also successfully created an environment that accelerates the all-pervasive use of ICT across all segments of the community. AirAsia has almost literally overnight in corporate terms, demonstrated the strategic value of ICT to increase the competitiveness of businesses, promoted online booking, and helped dispel the myth that people are afraid to shop online because of network security fears.

Beside that, AirAsia online reservation system resides on a secure server that encrypts customer purchase information using Secure Socket Layers. They use all reasonable endeavors to protect personal information from loss, misuse and alteration. Only authorized employees, who are under appropriate confidentiality obligations will have access to their customer personal information. However, customer will be responsible for any user ID or password that is used on web site.

Apart from that, A cookie is a piece of data stored on the user's hard drive containing information about the user. Usage of a cookie is in no way linked to any personally identifiable information while on our site. This enables AirAsia system to recognize their customer browser and remember passenger names and billing information so that customer won't have to retype it. The address and passenger information is saved to their customer hard drive by the AirAsia web server. This information can only be accessed by the AirAsia web server but Internet users and other companies cannot access this information. For security reasons, customer credit card number is not saved.so customer must type the credit card number each time they purchase travel using Ticket-less Booking Online. Beside, AirAsia also

utilize cookies to track the effectiveness of online advertising. This information is treated confidentially and will not be shared with anyone outside of AirAsia Bhd. AirAsia will only use this information to make informed decisions with regard to the purchase of online advertising. This enables AirAsia to maintain low costs and low fares for their customers.

Integration of Information Technology in Core Business

From now a day, the Information technology is fully use by the social. AirAsia know that E-commerce is becoming a business tools. Airasia use this to sell their products(e-ticketing,hotel room and etc), advertise, bypass intermediaries and so on. AirAsia was implementing E-commerce and maximized their information technology usage to make the effectiveness and efficiency in their company and make possible low cost carrier in their business. AirAsia has implement current IT such as Yield Management System(YMS),Computer Reservation System(CRS), and enterprise resources planning(ERP) system.

Airasia has use the Yield management System as revenue management system it understand, anticipates and reacts to the behavior of the customer to maximize revenues for the organization. In this system, Airasia take into account the operating cost and aids AirAsia to optimizes price and allocate capacity to maximize expected revenue. Airasia use YMS to optimization the seats to maximum revenue. The price of the ticket can be based on the available of the seats at various time. A reservation done at a later date will be charged more than the one done earlier(for the same seats). This can make the plane when flight in once can be full seat, prevent any empty seats at the plane. Based on the economy theory, when the seats are the fixed cost, for minimize the fixed cost, most effective way is to maximize the seats, this can bring profit maximization. The second is the route, by adjusting prices for routes/destinations that have a higher demand when compared to others). The effective methods however is to combine the seats and routes for all flights, this can lead both of the seat and the route are effeectively priced for all the flight.By using this yield management system, AirAsia can understand the behavior of their customer and offering the

effectiveness and effiency strategy and also can allocate capacity to maximize the expected revenue.

Airasia implemented Customer Reservation System(CRS), it is an integrated web-based reservation and inventory system. It includes internet;call center, airport departure control and more. It is a direct sales engine that effectively prevent the middleman(travel agent) and the sales commission that need to paid to them. By using this system, Airasia can cut their cost and eliminates the middleman(travel agent) and the sales commission to pay them. Other than that, this system are very customer friendly because the entire customer if want to buy or make a reservation, the customer are no need like the traditional way, call go to have reservation the seats or through the agency, the the airline company will deliver the ticket to your house. It can be all done by online, the customer just need to online to make reservation and payment, print out the ticket, when go to the terminal just need to show out the printing ticket to the counter and also your IC(identity card) or passport. This also because of why the flight ticket are cheapest than other airline company because the company have direct relationship with the customer without any intervention middleman. Airasia can save the cost and transfer the benefit to thier customer.

Airasia also implementation of enterprise resources system(ERP) to maximized IT to meet the lowest cost during their business activities. ERP is the system that integrate comprehensive software to make the IT system is more effectively and efficiency. From the managers view in a company, the emphasis is on the word planning; ERP represents a comprehensive software approach to support decisions concurrent with planning and controlling the business. Airasia is looking to successfully maintain process integrity, reduce financial month-end closing processing times, and speed up reporting and data retrieval processes. Then, this system focusing on capturing transaction in daily operation and helping AirAsia to save its operational cost as well as to increase the efficiency and integrity in its operation.

Airasia also implement <u>Customer Relationship Management(CRM)</u>. AirAsia has partnered with travel and tourism solutions provider Amadeus. The partnership will enable more than 10,200 traven agencies using Amadeus Global Distribution System(GDS) to book flights for travelers on AirAsia and all its subsidiaries. AirAsia also provide accommodation, they provided the traveler convenience to book their hotel. Airasia also provided the travel package for the company who need their staff travel overseas, this also can save the cost of the company, and also can build the good relationships with the company. Other than that, Airasia also provide if the flight delay, AirAsia will send a SMS(short massage service) or email to their customer to inform them. AirAsia also using the SMS to advertise their promotion as well.

AirAsia also using the outsourcing to control their cost. By using <u>outsourcing</u>, AirAsia can be eliminated in more resource consumption. And than for the competency, AirAsia competency is not in IT, by implemented outsourcing IT field, AirAsia also can reduce cost in IT system activities which is can make possible more cost in their business. Airasia can easily to control all the system that is outsourced to other vendor or company, the control in this strategy also gives benefits because AirAsia function only to be controlled a system that is AirAsia used. Example like the AirAsia did computer reservation system(CRS) by Navitaire Open Skies Technology Company, and than implementing enterprise resource planning (ERP) by Microsoft Corporation, and also implementing AirAsia X. By implementing outsourcing more better than in house operation, because it can give more lowest cost, reduce risk,more effectively and efficiently, and also can easily control by AirAsia and than more fast in AirAsia company.

CASE STUDY OF AIR-ASIA : STRATEGIC ROLE OF INFORMATION SYSTEM IN BUSINESS

Air Asia is established on 12 December 2001 by Mr. Tony Fernandes, the CEO of Air Asia and expanding rapidly since that. Air Asia is the leading low fare airline in Asia and Air Asia succeed to become the award winning, 'Asia Pacific Airlines of the year 2003' by Centre for Air Pacific Aviation (CAPA) in 2003. Air Asia has successfully positioned itself in customers' mind by using the " Now Everyone Can Fly" slogan. Air Asia had flown over 55 million guests across the region and continually create more extensive route network through its associate companies. Air Asia flies over 61 domestics and international destinations with 108 routes and operates over 400 flights daily from hubs located in Malaysia, Indonesia, and Thailand with a fleet of 72 aircrafts. Air Asia's net profit for the second quarter ending 31 December 2004 was reported RM44.4 million, a 323% increase over the previous quarter (Air Asia 2005). The vision of Air Asia is to serve the 3 billion people who are currently underserved with poor connectivity and high fare and to be the largest low cost airlines in Asia. Their mission is to create a globally recognized ASEAN brand, to attain the lowest cost so that everyone can fly with Air Asia, to be the best company to work for as employees are treated as part of a big family, and to maintain the highest quality product, embracing technology to reduce cost and enhance service levels.

Roles of information system in Airline Business

Air Asia's business strategy is centered on cost leadership and targets specific markets which are price sensitive customers (including 1st time fliers) who needing the short haul flights. According to Porter's generic strategies (1985), cost leadershipis one of them. Air Asia has to offer the lowest possible fare amongst all airlines in LCC (Low Cost Carrier) industry whom compete on costs in order to win the competition in current markets as well as new markets. The central objective of Air Asia is to achieve bigger cost advantages than the rivals by continuously searching areas for cost reduction along its value chain.

Support of Information System

The operational environment of airline industry is complex due to the continuous daily operation, larger network in supply chain and some external uncontrollable variables such as government regulations and weather condition. These issues are giving big impacts on airlines' performance. This show how important to implement advanced planning and scheduling as it will be able to determine the success of airlines.

Air Asia has implemented APS (Advanced planning and scheduling) system which is triggered off by Air Asia current market condition that saturated market with high degree of rivalry among the existing competitors. APS system works as the brain supply chain activities (Ahmed, 2004) by gearing activities in relation with customers and suppliers requirements. It helps Air Asia to optimize its supply chain management as clusters and classifies customer orders, forecasts future fulfillment requirements, set order priorities and checks resources availability. APS system provides visibility across supply chain in term of cross functional scheduling and planning with suppliers and customers. APS system will able to further improve Air Asia's processes performance and it also analysis the flying routes which optimal flying route is imperative in deciding new destinations for Air Asia to serve in future.

Air Asia has implemented the Database Managing System in order to share the centralized date amongst all functional areas to ensure daily operation is sufficient. Perriodot system had been signed up to develop the travel itinerary gateway for Air Asia to process all confirmed bookings with skylights Navitaire, where a final PDF processing will be handle through their XML driven itinerary processing server At the same time, Air Asia has signed up PEP (Process Flow Enterprise Portal) system for their internal intranet operation whereby modules to be implemented including news and announcement, leave management, claims processing lost luggage management and staff scheduling.

In order to successfully maintain process integrity, reduce financial month-end closing processing times, and speed up reporting and retrieval processes (Microsoft Malaysia), Air Asia had implemented a full fledged ERP (Enterprise

Resource Planning) system powered by Microsoft Business Solutions (MBS) on Microsoft technology platform recently (May 2005) by Avanade consultants. ERP is the system that integrated comprehensive software to make the IT system works more effectively and efficiently. ERP system helps Air Asia to collect data from various key business processes in manufacturing and production, finance and accounting, human resources, sales and marketing, and storing the date in a single central date repository. Information is easily shared across the firm to help the different parts of business work together closer and this lead a better decision making of management level.

Air Asia has implemented YMS (Yield Management System) to optimize prices and allocate capacity to maximize expected Revenues. YMS helps Air Asia to understands, anticipates and reacts to the behavior of customer to maximize the revenue of the organization. The optimization is done on two levels:

- Route (By adjusting the prices for destinations that have higher demands in the market).

- Seat (Seat are available with various prices during different time. The reservation fee will be higher for the same seat at the later date. Thus, every seat is considered an opportunity to increase revenue).

Air Asia have actually lowered their revenue as YMS has given Air Asia the window to increase their revenue by offering higher discounts, more frequently during off-peak times while raising prices only marginally for peaks time. Air Asia was able to increase avenue (3-4%) for the same number of aircrafts by charging a premium for late bookings and by taking advantage of the forecast of the high/low demand period.

Furthermore, the other information system that Air Asia has implemented is CRS (Customer Reservation System) which is the Open Skies by Navitaire. CRS has helped Air Asia to grow at a dramatic pace. CRS is an integrated web-based reservation and inventory system whereby it includes call center, internet, airport departure control etc. By implemented CRS that works as a direct sales engine, Air Asia are able to eliminate the middleman and the sales commission which need to

pay to them initially. Open Skies maintained the centralized customer data and helps Air Asia to track booking and schedule flight activities with real time, on demand reporting feature. Open Skies is able to integrate with the already implemented YMS. Thus, the systems be used in unison for pricing and revenue maximizations and driving down the costs of operation. Air Asia is the first airlines to introduce ticketless travel option and provides advanced boarding passes in addition to online booking as the result of CRS implementation. CRS satisfy the unique needs of Air Asia implementing a low-cost business model to transform the business process to efficiently streamline operations.

IT infrastructure

To power Air Asia website, www.airasia.com, it has selected the Dynamic Site Acceleration solutions from Akamai for 10 years deal on this front. Air Asia was looking forwards to provide the high quality services to the customers and features such as flight scheduling and easy to make online bookings due to the heavy visiting load which is an average of one million unique visitors per month. By handling the specific requirement, Akamai's Dynamic Site Acceleration solutions offer website performance up to five time faster than the origin web infrastructure and it can be achieved without the costly hardware. Air Asia also make use of Akamai's globally-distributed delivery network of 48,000 secure servers equipped with specialized software to increase site speed and performance due to Akamai provides turnket managed service that increases the scale, reach and performance of even the most complex Web sites and offers a full set of tools for enterprises to monitor and control the online business of Air Asia.

Air Asia has collaborated with Microsoft by implemented the Air Asia sidebar gadget which developed by TMS (The Media Shoppe Berhad), a Microsoft-certified independent solutions provider, for the Window Vista Platform. The Vista Gadget is available for downloading purpose at AirAsia.com. The gadget allows customer to access live travel information directly from the Window Vista interface. This gadget helps Air Asia to boost up their e-commerce

business as it enable the customers to keep up to date with latest news and promotions, and continue to drive traffic back to Air Asia website.

CASE STUDY ON BUSINESS SYSTEMS PLANNING AND IMPLEMENTATION : MCDONALD'S CORPORATION

McDonald's has worked hard to be more than a restaurant chain. It has become a marketing icon and is part of the routines of millions of people. Its success is so far reaching that it has developed its own culture and identity. It has become a symbol of the success and desirability of American popular culture.

McDonald's operates more than 24,000 restaurants in 114 countries. It has a 21 percent share of the very competitive US fast food industry. Overseas restaurants now account for half of the company's profits. McDonald's plans to open 10,000 new restaurants by the year 2005. It has been the forerunner in the recent industry trend of co-branding and satellite locations.

What has set McDonald's apart from the average hamburger restaurant is its ability to recognise customers' needs and desires. It seems customers want fast, friendly service in a clean and orderly environment. McDonald's sees this as its main objective and addresses it as its primary business function. One of McDonald's most important critical success factors has been the ability to apply manufacturing functions to service activities. McDonald's has used this approval to bridge the dichotomy between service and manufacturing.

The McDonald brothers identified simplicity as being important. Dick McDonald explained,

> *We said let's get rid of it all. Out went dishes, glasses and silverware.*
>
> *Out went service, the dishwashers and the long menu.*
>
> *We decided to serve just hamburgers, drinks, and French fries on paper plates.*
>
> *Everything prepared in advance, everything uniform.*
>
> *All geared to heavy volume in a short amount of time.*

This simple system was felt to be ideal for franchising as it was ideal to duplicate. A strong system of operations was conceived. The system consists of four distinct parts:

1.   Develop supplier relationships.

2.   Train and monitor franchises.

3.   Improve products.

4.   Improve equipment through technology.

Networks are particularly important to McDonald's because they provide a mechanism to manage the franchises spread over large geographic areas. Networks reinforce the centralisation of power by enabling headquarters to communicate with the franchises. This ensures standardisation and quality control through the analysis of inventories and franchises. Networks achieve these functions at a comparatively low cost and without the time constraints of more mainframe-based communications.

Both McDonald's and Burger King are testing smart card technology in selected markets. The cash value of each card is stored on a computer chip or a magnetic strip on the back of each card. Value can be added to the card through machines that accept cash or through ATM-like machines that add value by transferring funds out of a customer's bank account. Customers can use the cards, instead of cash to make their food purchases. Corporate goals for smart card implementation include cost savings in relation to money handling, reduced shrinkage, and increased loyalty through incentives and premiums. Smart cards eliminate the need for merchants to communicate with banks for the authorisation of purchases.

McDonald's is testing this technology at 870 restaurants across Germany. McDonald's Deutschland continues to use smart card terminals in 55 stores. During the first 10 weeks of the trial, 30 thousand transactions were conducted, using Hewlett-Packard Co.'s VeriFone unit, which provides the terminals. McDonald's is hoping to lead a trend toward the wide-scale acceptance of smart cards in Germany. Technologically, smart cards were designed to function in place of credit cards in the fast-food environment. Historically, credit card transactions were too slow. Their associated costs were too high in the face of small margins. Smart cards are an important step in resolving these issues. They enable restaurants to leverage sales and enhance the ease of credit card use.

Authorisation and settlement technology are rapidly improving. The costs of network connectivity are decreasing.

McDonald's first announced a web presence in 1994 with McDonald's interactive, an area in NBC Online on America Online. In 1995, the company developed and implemented a web site called McFamily (www.mcdonalds.com). It is aimed at families, perceived by McDonald's as its most important target market. The site features "seasonal ideas for fun family activities such as block parties, travel games, and household safety information." The Auditorium sponsors monthly guest speakers, including celebrities and parenting experts, and a Hey Kids area houses a gallery with McArt submitted by children with downloadable games and contests. The goal of all these web pages is to enhance the brand image that McDonald's is for families. McFamily includes a section on "helping others". This section features information on Ronald McDonald House and other related children's charities. This section also features information on McDonald's efforts to preserve the environment.

The McDonald's web site cannot be used to sell food. However, it can capture revenue through sales of merchandise related to McDonald's sponsorships. The "McStuff for You" section offers gear from McDonald's racing teams and the Olympic Games. The web site is used to collect customer information and profiles through on-line surveys.

Decision makers at McDonald's Corporation realise that customer preference is paramount. The chain is implementing a restaurant-level planning system, dubbed "Made For You." This enables each restaurant to eliminate its inventory of foods prepared in advance. Instead, workers make sandwiches based on actual demand without sacrificing any of the efficiency.

About 800 McDonald's restaurants use the system, which consists of PC-based cash registers running in-house software. Orders are routed to monitors at different food preparation tables to balance the workload among employees. In McDonald's restaurants without the new system, workers must anticipate demand for each type of sandwich in advance and place them in bins. When a customer

wants a sandwich that is not ready-made or one with a different topping, the person at the register shouts out the order and workers move out of the assembly line for the special request. This slows the process and extends the customer's wait.

McDonald's introduced the new system in March at a meeting for its franchisees. The company is encouraging its 12,400 US restaurants to incorporate the system, but the actual decision is left to each franchise. The technology eases the workload and could add up to a percentage point to the company's profit margin because it enables it to sell more food faster.

Wal-Mart and McDonald's have jointed together to share retail space. These two companies have been partners since 1993, with over 800 restaurants in Wal-Mart stores around the US. Now, McDonald's has taken this one step further. It actually uses Wal-Mart clerks and registers to sell McDonald's food. In several test locations, when Wal-Mart shoppers pull their carts up to the checkout, there is a mat on the counter displaying the McDonald's products, much like what you would see at one of the restaurants. Each product, from hamburgers to Happy Meals, has a code number that the clerk scans into the Wal-Mart system while ringing up the customer's purchases. The orders are automatically relayed from the register to the kitchen using software jointly developed by McDonald's and Wal-Mart. The food is brought to the customers as they leave the store. Since the food appears on Wal-Mart's registers and receipts, customers can pay for it with a single credit card purchase. At the end of the day, the companies balance McDonald's portion of the proceeds. Individual organisations are starting to use one another's environments and skills to reach as many potential customers as possible. To better manage its inventory, McDonald's has implemented supply-chain software that enables better management of inventory by sharing demand and supply information among its restaurants, suppliers and distributors.

McDonald's appears to be at a crossroad. The company can continue on its traditional (and very successful) path of consistency and quality through standardisation, or it can alter the basic strategies by allowing franchisee autonomy and continuing to provide a variety of offerings and service. As a company noted

for standardisation, emphasis on flexibility is quite a feat. This new outlook includes granting more freedom for franchisees to experiment with food and marketing, test new venues, such as satellite locations and co-branding, and develop new menu items.

These changes are innovative and risky. Current management is not considering minor adjustments. Experimenting with the much copied system of operations is a gamble. The system is a precisely organised machine; by introducing flexibility, the machine is in danger of becoming mired down with complexity. The danger lies in straying too far from what McDonald's has done in the past.