Supermarket information system essay sample

Economics, Trade

M&M is a chain of supermarkets that operates in Gatwick, UK. Their daily trading includes transacting of groceries, frozen foods, dairy products, brews, fizzy drinks and other consumable items. Their processing is mostly manual and run based on cash register concept of processing transaction. Lately they have discovered that their valued customer are quite unhappy at the amount of time spends at the cashier’s counter to pay for their purchases. Some customer has suggested the implementation of cashless mode of payment as well as phone-delivery mode of services so that they would avoid the hassle of shopping during the winter days.

Hence the management of M&M has decided to upgrade their service by introducing automated processing tools in the area of entering transaction, processing and storage of items as well as in producing receipts and other related areas.

As a consultant, I will provide the necessary recommendations as to what type of input, output and storage devices I could implement. In other words I have to implement the Local Area Network model concept with their branches and to connect to the main head office through Internet.

Mission

Maximize speed and uptime at the Point-of-Sales

Grocery shoppers hate to wait. That’s why the BIS system offer durable solutions that work hard run fast and provide consistently outstanding uptime. Our retail-hardened POs systems, high performance operating

system and speedy thermal printers allow you to move more shoppers through your lanes while protecting your long-term investment.

Increase sales to fight shrinking margins

BIS system makes it easier for grocery retailers to strengthen customer loyalty and grow sales. With software developed specifically for grocery, you can quickly roll out a loyalty program designed to reward and retain your best customers and track shopping patterns. You can also use targeted marketing to increase sales and impulse buys.

Reduce labor turnover, improve service

Higher throughput means higher sales, making it essential for your employees to work at peak efficiency. The solutions that are BIS system help you maximize cashier productivity, deliver training more efficiently and ensure exceptional customer service–all while minimizing employee turnover.

Use advanced technology to grow share

In grocery, traditional and new types of competitors constantly threaten market share. To compete, many grocery retailers use multiple channels to protect existing share and reach new customers. They deliver personalized shopping lists via the Web, use wireless terminals and handheld devices, print coupons from kiosks, and offer self-checkout lanes. To help you deploy solutions like these and get an e-business edge over your competitors, I developed the BIS system portfolio. This comprehensive set of hardware,

software and services helps you realize the full potential of integrated multi-channel retailing.

The input

As an advisor, I will recommend some input devices, which are rather high-tech as to make the operation of the supermarket activities running quickly, efficiently and accurately.

The first input device is the scanning device bar code readers. Barcode is the vertical marks you see on most manufactured retail products-everything from candy to cosmetics to comic books. It is used to indicate every product’s information. Where as bar-code readers are photoelectric (optical) scanners that translate the symbols in the bar code into digital code. In this system, the price of a particular item is set within the store’s computer. Once the barcode has been scanned, the corresponding price appears on the salesclerk’s point-of-sale terminal and on your receipt. Records of sales from the bar-code readers are input to the store’s computer and used for accounting, restocking store inventory, and weeding out products that don’t sell well.

Every shopping cart or trolleys are equipped with individual bar-code scanners attached to the trolleys. The bar-code readers will look like a PDA with a color screen. The bar-code reader that I recommend has a function of scanning every item that the customers want to buy before they put it inside the trolleys. Once they have finished shopping, at the point-of-sales or cashier, the computer there will automatically read the shopping data from

the bar-code reader and sum up the total bills you have to pay. If the customer has missed scanning one of the items, the reminder from the bar-code reader could recognize it and give a warning. Besides that, the bar-code reader can show many advertising on its screen such as the discounted products of the day, assign the customer to the available or least queued cashier and other news and functions.

The payment method is by using cashless method by means of credit card, debit card, smart card or cash card. The cashless method of payment can be reviewed on the appendixes. There will be the need of the customer to pack their own items after the payment since there is no person in charge of the cashier. In other words this is the DIY supermarket.

About the communication of the processor, I implement a several different method in the LAN area such as; firstly, the barcode reader will interact with the processor at the cashier by using wireless LAN. Each barcode reader and the processor will be equipped with wireless card. From the processor, a modem and router are also needed in order to connect to the multi channels of devices. The printer to print the receipt is attached to the processor in the cashier as well as the card payment slot.

There is also digital camera attached in every point-of-sales (cashier) to record the customer in terms of security.

The input devices will connect to the processor in the point of transaction by using wireless card. Where as from the processor at the point of transaction to the supermarket’s server it will be connected through normal phone line

with modem for storage and backing up purposes. The sever in each supermarket will have the functions of switching off and on the point of transaction depending on the need as well as storing the secondary information before it is send to the main head office for financial and management accounting purposes. The server also has the functions of restoring the supermarket’s updated data, which I will be describing it in the next outline.

The output

There are several types of output devices I will recommend at the point of transactions processing in the supermarket. The first output device is the touch screen LCD at every station. This is to indicate the final product list and price amount that the customer has to pay. The customer could modify the items for the last time here before the payment is made. Here is some over view for the monitor,

· Dual bulb, 12- or 15-inch* active matrix IR touch screen LCD · Stereo speakers and on-board audio system · Presence sensor · PC card slot · Headphone and microphone ports · Super-wide viewing angle

Integrated thermal printers attached to each monitor as well as the processor. This printer is used to print the receipt once the payment is made or the payment card is approved. Small build in speakers are also inside the monitor to give some voice comment to the customer such as to say thank you very much and please come again, etc.

At the point of transaction, the monitor will automatically read the data from your mobile barcode reader and display the items chosen before it finalized. It’s all within the wireless LAN system to interact which each other.

The storage and overall connection system

The system that I recommend consists of four level kinds of storage and connection. The first storage system is on the barcode reader. It has its own RAM and build-in 64 megabytes of storage that I think it should be enough for processing of data. The connection of this barcode reader can only interact with the processor at the point of transaction and the supermarket’s server for updating and reload information.

Each barcode reader is only programmed to save the data for each transaction. So after the payment is made, it will erase the previous record because the record has been saved to the processor at the point of transaction.

Secondly, at the point of sales, the processor will have a hard disk drive that capable to store a data up to 80 Gigabytes. The specification can be referred in the appendixes. Each transaction in every terminal in the supermarket will be saved in every processor. It has a capability of saving the data for one week before it will be deleted and record for another week of transaction. The data from the processor it then will be automatically transferred to the server at the every end of the day. It connects the server by using phone line with modem and router.

Thirdly is the server. Each branch of supermarket will have one server. This server will have one person controlling it. It is used to receive messages from the main head office and to updates every barcode reader of the latest promotions or advertisements wirelessly. The server has a bigger storage capability than the processor at the point of transaction of approximately 500 Gigabytes.

The server will collect information from the point of transaction at the every end of the day and save it there, after that it will directly transfer the information again to the main storage at the main head office. It is connected to the point of transaction and main head office through phone line with modem and router. The protocol is using TCP/IP. Note that the server is located in a secured room outside the supermarket for safety and confidential purposes.

Lastly is the processor or may call it server at the main head office have the main storage system. It can store up to minimum of 5000 Gigabytes and can be further extend. In the main head office this main processor used to record all the transaction updated every day and used to make the financial reports as well as the inventory and re stocking purposes.

For example, in one of the branch supermarket items A is empty. It will be notified by the barcode reader then the barcode reader will notify the server in the supermarket for re stocking. After then the person in charge will send a message to the main head office for restocking the item.

With my recommended system there will be no fear of loss data because each processor has its recording history depending on the level of time adjusted. If minor error happened, the server in each branch could have take care of the restoring the data. If the problem is major, then main head office have to reload its back up information recorded since the last update.

Talking about the operating system the BIS system are using IBM’ s operating system such as

· IBM 4690 OS, V3R3 or later · IBM 4690 OS Toolkit o Astra o SureVision · IBM Retail Environment for SuSE Linux7 · Microsoft® Windows® 2000 · Microsoft Windows XP (Professional Edition) · Microsoft Windows XP – embedded · IBM PC DOS 2000

Drivers supported · OPOS 1. 7. 0 · JavaPOS® 1. 7. 0 · POSS for Linux 1. 2. 0 · POSS for DOS 2. 1. 1

Applications supported · IBM SurePOS ACE for 4690 OS · IBM General Sales Application · IBM 4680-4690 SuperMarket Application · IBM VisualStore · Multiple software solutions validated as Ready for IBM Retail Store Innovations · Additional customized IBM applications

The payment method

Electronic cash is a proposed configuration to businesses in processing payables and receivables. The particular advantage is seen when transfers of very large sum of money are concerned. It is computer system that capable of permitting access from remote locations to a central computer file and will

be capable of communicating and receiving answers within a time period so short that the communications process will be perceived by the systems users as taking place instantaneously. Although, electronic cash is so similar to credit card and debit card transactions, they are somewhat different. Electronic cash demands the deposit balance.

For example, when a customer pays for her groceries at the supermarket, she needs to have her funds verification. Assuming that she has her account in Bank 1 while the supermarket has its account in Bank 2. Instead of paying for her groceries with cash or check, she just hands the check out clerk her identification card. The clerk places the card in terminal, and the communication link from the store to the bank. When notification of sufficient funds is complete, activation of the terminal device initiated an automatic transfer of the funds form the customer’s account in Bank 1 to the supermarket’s account in Bank 2.

As a conclusion, nowadays supermarkets are averagely highly sophisticated even though they may not be efficient and effective. With the technology booming in every second, today’s new era and modern society has far better educated then previously. Therefore, it is very important that the supermarkets must be thoroughly checked and maintained in order to give the best out of it.

The expectation from today’s new generation have a lot in common whether, be it a supermarket system or another service or products, the expectation from them are extremely high and demand better quality products or

services to meet their needs. Our quality of service is also very important in order to satisfy their requirement.

We cannot follow what has been the past. Beside the continuing improvements of daily lives, we must be looking forward to the present, and learn from what is in the past and re-engineered the products or services which we are lack behind and improved on it and re-introduces it to the needs of the consumers.