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Case Study 1
Pervasive Computing At Royal Mile Pub

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Why would customers appreciate this pervasive computing system?

This pervasive computing system has brought with it a list of advantages that have greatly benefited not only the shop but also the customers. Here are some of the advantages that have benefited the customers:

➤ Orders are served correctly and efficiently

As errors are minimized through the use of pervasive computing system, customers get their order served correctly. Orders that are available and not available are displayed out in the screen of the PDA allowing the servers to be able to inform or to advise the customers on the availability of the orders.

➤ Food gets served faster

As orders need to be sent to the kitchen manually, the traditional method takes up a lot of time from the point the order is taken to the point the order is ready to be served. With pervasive computing, orders are sent systematically and wirelessly to the kitchen through the local area network. Apart from that the computerized system allows the servers to immediately identify what are the dishes that are unavailable and also reduces the probability of an error occurring as human intervention is minimized.

➤ Customers feel more comfortable

As servers are not required to run back and forth from the customer's table to the kitchen to pass the orders, the servers can spend more time on each customer and table attending to all the needs of the customer.

➤ Efficient billing system

Besides all of the above, the pervasive computing system implemented in the Royal Mile Pub also offers the functionality of automatically totaling up the bills accurately and efficiently. This has further eliminated any arithmetic errors and indirectly gained the confidence and trust of the customers. This is due to the fact that customers that come to the Royal Mill Pub know that they are not overcharged or undercharged.

intentionally as the billing process is done automatically without any human intervention.

What Strategic advantage is created?

➤ Probability of Errors happening is minimized

The traditional method of placing an order has left a lot of space for errors as a lot of human intervention takes place. Errors can happen from the point the order was placed up to the point the order was served in the traditional method. The pervasive computing system has eliminated most of the errors such as errors due to bad hand writing, striking out those orders which is not available, automatically sending the orders to the kitchen and a lot more. Not only does the pervasive computing system eliminated or minimize all the mention errors, it also eliminates arithmetic errors that may potentially arises due to human mistake.

➤ Reduced the turn around time needed to serve an order

Apart from minimizing the possible errors that could occurred, pervasive computing have also reduced the turn around time needed to serve an order. For example orders in Royal Mile Pub is sent automatically and wirelessly to the kitchen instead of being sent to the kitchen manually. The manual process requires a waiter or server to walk all the way from the customers table all the way to the kitchen once he or she is done taking the orders. As orders are sent automatically and wirelessly through the restaurants wireless network, the chef in the kitchen can immediately work on the orders instead of waiting for it to be delivered.

➤ Better inventory control

One of the strategic advantage created by the pervasive computing system is better inventory control. Through the pervasive computing system the kitchen managers to track raw material purchases against the food orders and immediately identify waste and other delivery and processing problems.

➤ Cost Reduction

Pervasive computing system also brought with it cost reduction benefits apart from all that is mention in the above. Waste and replacement orders that is prevented all contributes to the reduction of cost. The pervasive computing system also reduced the amount of servers needed to 3 servers only leading to lower and lasting cost.

➤ Increased Customer Satisfaction

One obvious strategic advantage created is the increase in customer satisfaction. Customers satisfaction is increasing rapidly as less errors are made, the turn around time needed to serve the food is greatly shorten and arithmetical errors are reduced.

➤ Information at the tip of the hand

One of the advantage of implementing an IT system is the ability to access to information anytime. In Royal Mile Pub, servers have immediate access to information pertaining to the availability of the orders allowing them to communicate or advise the customers immediately. The kitchen manager on the hand have access to information pertaining to availability of the raw materials. All this further leads to better and more efficient service.

If such a system is beneficial to all, why have not all restaurants adopted it?

Despite bringing a lot of advantages and benefits to both the customer and the restaurant itself, a pervasive computing system might not be suitable to some or most of the restaurants in the market based on the following reasons

➤ High startup cost

A computerized system such as the one implemented in Royal Mile Pub requires a high startup cost ranging from \$20,000 to \$50,000 depending on the size of the business. Apart from the installation charges, the training cost incurred should also be taken into consideration as the more people or worker in a restaurant , the higher the training cost will be.

➤ Maintenance Cost

Apart from the high startup cost, the business should also consider the cost needed to maintain the efficiency of the system and its hardware. As the system is made up sub hardware, a failure in any of the hardware needs to be immediately fixed or replaced which indirectly means the outflow of money. Some of the component that may require monthly or frequent servicing / maintenance is the server, database and pda.

➤ Computer Literacy

Despite the world is slowly moving into the digital era, the level of computer illiteracy in most part of the world is still on the high side. Implementing a pervasive computing system in a restaurant might not be so suitable as most of the time a restaurant is run by people who are not so well verse with computer or has absolutely no knowledge or experience in operating such system. The cost and trouble to train this people has proven to be extremely expensive and draining.

➤ Compatibility with nature of business

It is undeniable that a computerized system brings with it a whole load of advantages but the success of such system is dependent on its compatibility with the nature of business. Nature of business here refers to the type of food sold or served by the restaurant. A restaurant selling home cook food will definitely have compatibility issues with the computerized system. Restaurants selling home cook food often project a cozy and warm atmosphere, while on the other hand a pervasive computing system will project a high tech atmosphere which may not go in line with the atmosphere of the restaurant selling home cook food.

A fast food outlet like KFC or McDonalds will have minimal or no compatibility issue with the computerized system

Why is it classified as Pervasive Computing?

Before we look into why the system installed in Royal Mile Pub is classified as a pervasive computing system lets look at the definition of pervasive computing system. Pervasive computing system is a trend being brought about by a convergence

of advanced electronic - and particularly, wireless technologies and the Internet, where computing devices are all connected in an environment. Often being confused with personal computers, pervasive computing devices are not personal computers but very tiny or invisible devices either mobile or embedded in almost any type of object imaginable all communicating through increasingly interconnected networks.

The system in Royal Mile Pub is classified as a pervasive computing system because the usage goes beyond the traditional user interfaces, it can be used at any where and at any time. It does not use the traditional personal computers instead it uses hand held devices like Ipaq to connect to the wireless network