Impact of Information and Communication Technology (ICT) on Service Delivery in selected Hotels in Coast Region, Kenya

ANGORE MBITHA, SAWE BELSOY AND KAMWEA JAMES

Moi University, School of Tourism, Hospitality and Events Management

Abstract

Information and communication technology is important in the provision of services in the hospitality industry. It not only speeds up the services being provided but also ensures that guests are satisfied and can therefore bring about repeat purchases. The hospitality industry is very delicate and the manner in which the services are offered determines the number of customers to frequent the establishment. Therefore, to enhance competitive advantage, managers will need to incorporate more guest-service technologies within their key offerings to customers or be left behind. The pace of technological change is presenting the hospitality industry with many new opportunities and the management of information technology will be a key business activity in the future. Therefore, the purpose of this study was to examine the impact of Information and Communication Technology (ICT) on service delivery in the hospitality industry.

Keywords: Competitive Advantage, Information and Communication Technology, Service Delivery

Introduction

Information and Communication Technology (ICT), is the processing and distribution of data using computer hardware and software, telecommunications, and digital electronics. The use of ICT in the hospitality industry has changed greatly over the years. The launch of low cost personal computers in the early 1980s started an explosion in the use of technology that is still continuing today. Technology development, such as, integrated hotel systems and internet-based reservations subsystems have a profound effect on how hospitality organizations transact their business and perhaps even on the structure of the industry itself (Buick, 2003). For hospitality business it is no longer a question of whether to computerize but which system will give the most benefits and should be adopted first (O'Connor, 2004).

The role of computers in the hospitality management and operations has become increasingly complex. Many different types of hardware and software are used and it can be difficult even to begin to understand the array of technical terms that can be encountered. Computing is not just about PCs anymore; it's about connectivity, networking and communication (Onunga, 2002). Integrating this connectivity poses one of the greatest challenges for the future. The pace of

change is also very swift and thus it can be difficult to keep up to date on what is happening in the area. Thus the knowledge of both the capabilities of computer systems and the benefit that can be gained by using them is essential for every hospitality manager (Sheldon, 1997).

The purpose of the study was to examine the impact of ICT on service delivery in the hospitality industry. The study sought to answer the following questions: What is the extent of ICT utilization within the hospitality industry?; What are the various computerized application systems in use within the hospitality industry?; What are the benefits/impacts of ICT on service delivery within the hospitality industry?; What are the challenges faced when using ICT within the hospitality industry? And what could be done to overcome the challenges?

In the today's competitive business world, the establishment of an appropriate information technology infrastructure provides organizations with the flexibility and responsiveness to adapt to the ever-changing business environment (Stare *et al.*, 2006). The hospitality industry as one of the service industries faces the greatest challenge of the need to increase the productivity of service and delivery of quality services. With changes in lifestyles and priorities, time has become an important commodity. This has led to service expectations of a different nature, where speed is increasingly important. Because of these consumer expectations, time has become an important focus for competitive activities. Problems of guest dissatisfaction, low consumer turnout, poor quality service delivery, ineffective management, low productivity and failure to reduce costs in the hospitality industry are prominent issues requiring attention. These can be addressed by the use of ICT (Desinano, 1996).

Literature Review

Information and Communication Technology and the Hospitality Industry

The world is experiencing some of the most dramatic changes in its history. Borders are dissolving and countries, people and firms are connecting more and in different ways than they ever have in the past. Increase in international trade agreements, global business activities, telecommunication networks, personal and education travel is linking the world together like never before. These linkages are being forged and supported essentially by two of the largest and fastest growing industries in the world today- tourism and information technology (Sheldon, 1997).

Information and Communication Technology (ICT) is the technology required for information processing, in particular the use of electronic computers and computer software to convert, store, and process, transmit and retrieve information (Onunga, 2002). Although there has been a rapid increase in the volume of electronic commerce, a majority of the countries, especially in the developing world are still in the early stages of so-called Internet revolution. Consequently, experts continue to disagree on what its ultimate impact will be. However, what is clear is that many customers are choosing to move away from traditional commerce setting into more remote contacts anywhere, anytime (Lovelock, 2002). Human interaction remains the foundation of most traditional relationship. Waiting days for a response to a more traditional form of communication has come to be tolerable but it does not do much for the productivity and customer satisfaction (Sheldon, 1997).

Technology has increased efficiency in the hospitality industry. Use of computers has enabled organizations to store, process, manipulate and distribute information. They have enhanced utilization to store, process, manipulate and distribute information. They have enhanced utilization of staff in the hospitality service and guest contact points. This has led to improvement of productivity and service quality in hotels.

Hotel Computer Application Systems

Other applications software are both industry–specific and function-specific. Applications of this type are highly specialized, and can only be used for a very specific set of tasks. Some examples from hospitality industry as categorized by O'Connor (2004) include; Central Reservation Systems/Offices (CRS/CRO). Individual hotels or properties receive growing number of telephone calls, letters and telexes from potential customers wanting to book accommodation. Large clerical squads are needed to sort mail, type letters, send telegrams and handle other requests. Bottlenecks are frequent, administration costs are skyrocketing high and experienced staffs are in short supply. To solve the inefficiencies of the existing systems, the best way to serve the customers, and at the same time provide a valuable service to the hotel or chains, is to centralize the reservations functions into Central Reservation Offices or systems (CROs/CRSs) (Sirirak *et al*., 2011).

Centralizing the reservations function also brings other advantages. Bottlenecks are reduced while at the same time, reservations agents are used more intensively than would be at unit level as centralization helps to average out the busy and slack period. A more professional level of customer service is possible because of the use of dedicated well trained staff, and service quality is also more consistent as centralization makes it easier to monitor and control (Jeong, 2003).

Unit Level Reservation Systems

The use of dedicated computer systems for day -to- day support in hotels has become commonplace. Most hotels continue to maintain a reservation system at the property level, despite the benefits of single image inventory. This manages the room inventory for the individual hotel, tracking availability, helping to sell individual and group reservations and generate reports such as arrival lists, reservation forecasts, travel agents commission due and pre – registration cards (Cho, 2001).

Although its important will decrease as usage of electronic distribution grows, direct reservations are still the most important sources of business for most hotels and thus it makes sense to have a reservation system at the property. Where the hotel is part of a chain or consortium, the unit level system should be interfaced or integrated with the central reservation system to help increase co- ordination and reduce confusion (Bocij *et al*., 2006).

Property Management Systems (PMS)

A property management system helps manage the front office interaction and at the same time acts as an information hub for other computer systems. The functions of a PMS may be broken down into the following systems (O'Connor, 2004): (i) registration; allocating vacant rooms to incoming guests and marking those rooms as being occupied (ii) housekeeping; tracking which rooms are occupied, waiting to be cleaned, waiting to be inspected or ready to be passed back to the front desk for allocation to incoming guests (iii) guest accounting; tracking all guest charges and payments and producing the final guest bill and (iv) night audit; automatically performing end- of – day routine such as posting room charges to each guest folio.

Ancillary Systems

These are systems which although not part of the PMS itself, interface with it and increase efficiency and control. Many of these systems generate valuable incremental revenue for the property, while in other cases the provision of the system becomes a differentiator in the mind of the guest, helping to make the property stand in the sea of similar looking hotels all providing the same facilities and amenities (Clifton, *et al*., 2002). As a result, the number and complexity of ancillary systems is growing.

An electronic door-locking system uses small plastic cards instead of metal keys. The combination that opens the door can be recorded on these cards in a variety of ways; either by puncturing holes in the card, by storing into a magnetic strip on the rear of the card or storing it on the embedded chip of a smart card. Because of the way the system works, it does not matter if the guests forget to return the key at check out as the combination in the door lock is changed and a new unique key is issued for each new guest (O'Connor, 2004).

Most guest rooms have a TV, a hairdryer, a refreshment centre, business equipment and many other in-room facilities, more electricity is being used throughout the hotel and managing energy costs have become a priority. By using technology-based system hoteliers can now take control of room lighting, temperature and electricity and minimize energy use while at the same time maintaining guest comfort and control. Electrically controlled systems allow more accurate control to be maintained over temperatures, which can lead to further energy savings (O'Connor, 2004).

Telephone systems are one of the common uses of technology in hotels. Direct dial-facilities from the guest bedrooms are provided by a piece of equipment known as the Private Automated Branch Exchange (PABX). This is basically a computer system that connects the hotel's internal telephone system to the outside world and manages the allocation of lines to incoming and outgoing calls (Schegg and Murphy, 2003). Another system works alongside the PABX to provide direct dial facilities.

The Call Accounting System records the number dialled from each extension, its duration and calculates the charge for each call. This data can be printed onto paper and then manually posted onto the guests account or in the case of integrated system, automatically posted directly onto the guest's bill. The main advantage for the hotel is increased control. Most systems will also not allow calls to be made from unoccupied rooms, which helps prevents fraudulent use of the telephone system (Schegg and Murphy, 2003).

Catering Computing Systems
A recipe costing system uses up-to-date prices and calculates an accurate cost of food and beverage products. Based on these costs, selling prices that guarantee a particular level of profit can be established. Computerized recipe costing reduces the amount of time and effort needed to keep recipe costs up to date by automatically recalculating costs whenever ingredient prices change. Every recipe that contains an ingredient whose price has changed is accessed and its cost updated in seconds. As a result, recipe costs are always accurate, meaning that profit margins are guaranteed (O'Connor, 2004).

A stock control system helps manage and control the flow of stock through an organization by recording the value of each stock item in different locations (such as the central stores, dry store, cold rooms and the kitchens) and tracking stock movements into, out of and between each of these locations. The concept of stock control is based on the accounting principle that an items opening stock, plus its purchases must be equal to its closing stock plus the amount consumed (Zhou, 2004). Carrying out stock control annually is labour intensive and time consuming.

In looking at the use of technology-based systems in this area, it is important to differentiate between EPOS and the electronic cash registers (ECR) that proceeds them (but which are still widely used). ECRs are primarily stand-alone units that add up prices for customer bills and hold daily/periodic sales totals. EPOS systems, on the other hand, have a more comprehensive range of capabilities including keeping track of current food and beverage orders, transmitting orders electronically to the production area, helping to ensure the accuracy of guest bills and, in the

case of interfaced systems, automatically posting charges into the PMS account folio of guests registered in the hotels. The two biggest controllable expenses in restaurant operations are labour cost and food cost, and the right EPOS system can help operators to lower costs in both areas while at the same time enhancing customer service (O'Connor, 2004).

Conference and banqueting systems assist in managing and controlling reservations and billing in the hotel's banqueting department. Hence the use of computerized conference and banqueting system makes the complex task of event management easier. Accidental overbooking is eliminated. All charges are automatically posted to the clients' bills (Clifton, *et al.*, 2002). The system ensures that the guest is charged for every item consumed and makes restocking easier. Without a computerized system, each unit must be checked each day and the missing items replaced. The mini-bar system, on the other hand, provides a summary list of the items needed to restock all the units (O'Connor, 2004).

Back - Office Systems

These are the administrative- focused computer systems commonly found in a hotel and catering computer operation. These systems generally work behind the scenes and are designed to automate key business functions rather than serve the customer directly (Sirirak *et al.*, 2011). These are computerized packages that assist the calculation of payroll figures. The main benefit gained is that the time needed to complete the task is greatly reduced. In many cases, the entire process can be shortened from days to hours. As a result, where wages are paid frequently, major savings of time (and, as a result, cost) are possible (O'Connor, 2004). Because of the link between the payroll and the human resource department, their computer systems tend to work closely with each other. Human resource systems typically store a variety of information about each employee. However, such systems are still relatively uncommon in the hotel and catering industry. This could be because they give most benefits in businesses that employ a large number of people. Individual hotels or restaurants tend to employ a relative small number of staff, and thus using complex computer systems to help manage personnel might therefore be unproductive (O'Connor, 2004).

The traditional, paper-based method of accounting involves recording transactions in three ledgers; a sales, a purchases ledger and a nominal ledger. Because a 'double-entry' system is used to help ensure accuracy, entries have to be made in multiple ledgers to record each transaction. Computerized accounting packages simplify the process by completing transactions in a single step. In addition, electronic links to other computer systems allow many of the postings to be made automatically (Zhou, 2004).

Marketing is a very broad subject area that focuses on identifying and satisfying customer needs. A variety of computer applications can be used to help achieve these very broad objectives e.g. Guest – history system which track the personal details and preferences of customers had stayed in the past, in an effort to develop a welcoming atmosphere where the guest was 'remembered' and treated like 'an old friend' (Jeong, 2003). Computerized systems help by allowing much more information to be stored and accessed more quickly and easily (Cho, 2001).

Yield management is a room management technique which has been adapted from the airlines to suit the hotel industry. Its main purpose is to maximize room occupancy while at the same time realizing the best room average rate. A computerized yield management system enables the reservation staff to make the best choices as to what rooms to sell and at what price. The system gives the ability to instantly analyze the profit potential of each booking. This is done by adjusting the room rate to suit the need for room at any particular time (O'Connor, 2004). These systems provide cable television and interactive games. Movies-on-demand and internet access on the television in the guest is also possible through these systems (O'Connor, 2004).

Information and Communication Technology Management

According to Bocij *et al*. (2006), computerization promised many benefits to hospitality organizations including improved service quality, enhanced profitability and efficiency, better integration of departments, speedier communications and reduced costs. As a result, hospitality organizations have adopted a wide variety of technology-based systems, a phenomenal rate, with most now using multiple systems to automate different functions. Unfortunately according to the author, the use of information and communication technology within the sector is to a large extent unplanned and unmanaged.

The pace of technological change is presenting the hospitality industry with many new opportunities and the management of information technology will be a key business activity in the future (Buick, 2003). Automation within the hospitality industry will continue to be an important technique to reduce the expenses of doing business. The automating of ICT is exciting frontier with many potential paybacks (Haywood, 1990).

Methodology

The research targeted hotels in the Coast. Different hotels with different star ratings were selected. The sample represented a wide scope of hotels with different ICT devices and utilization. There are an estimated 150 star-rated hotel- this is according to statistics obtained from the Kenya Association of Hotelkeepers and Caterers, Coast Branch. According to Mugenda and Mugenda (1999) a researcher would have to use 30% of the total target population as a sample size for it to be accepted as a good representative sample. A sample of 45 hotels was selected using simple random method. In order to achieve the objectives of the study, data was collected from the identified IT/IS managers. Questionnaires and personal interviews were used to collect data. The study was carried out in hotels along the coastline of Mombasa, North coast and South coast.

Findings

The purpose of the study was to examine the impact of information and communication technology on service delivery within the hospitality industry. The data indicate that, all the hotels had some form of (i) a computerized reservation system, (ii) a telephone/call handling system, (iii) a stock control system, (iv) an electronic point of sale system at 76%, (v) financial accounting system and (vi) a payroll system. The above six systems were considered to be the most vital in the running of hotel operations. The 16% of the hotels had a conference and banqueting system, 14% had an electronic door locking system, only 8% had an in room entertainment system, 14% had an energy management system (EMS). Whereas 14% of the hotels had an in-room mini-bar system, 57% had a recipe costing system, 3% had a yield management system, 19% had a sales and marketing system and 41% had a human resource system (figure 1).
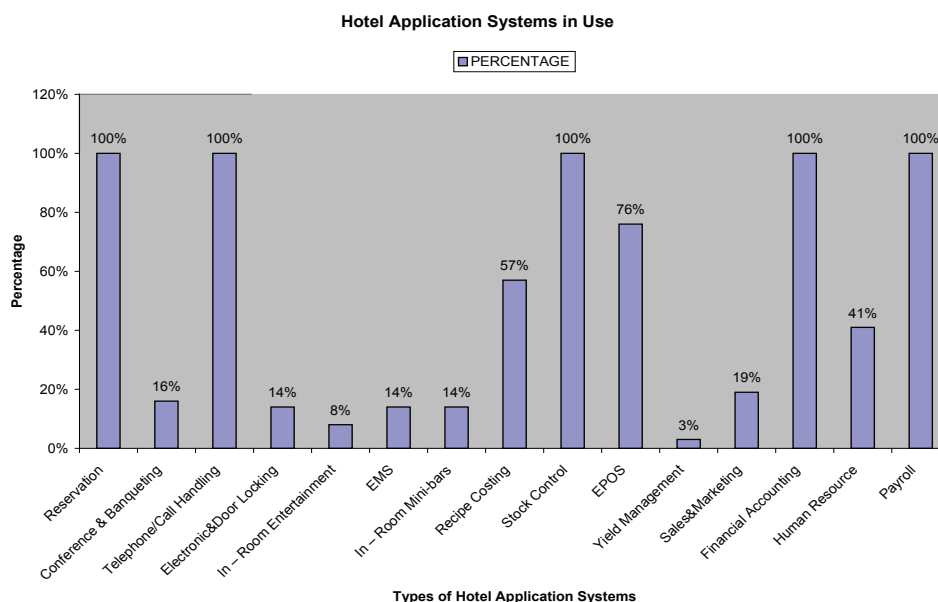
Hotel Application Systems in Use

Figure 1: Computerized hotel application systems in use

Factors Influencing the Use of ICT in Hotels

From the data in table 1 below, 84% of the respondents indicated that the need to reduce cost in hotel's operation led to the adoption of ICT, while 78% adopted ICT because of the need to increase and remain competitive in the industry. Eighty nine per cent view the need for increased productivity and profitability as their pulling factor, whereas 81% needed ICT in order to be able to boost their marketing functions. However 89% needed to adopt ICT in order to be able to enhance operational control and 73% of them needed ICT in order to keep abreast with the ever changing world as influenced by globalization.

Table 1: Factors that led to the utilization of ICT in the hospitality industry

Factor	No of Response	Percentage
Cost reduction in Hotel's operation	31	84%
Increased competitiveness	29	78%
Increased productivity and profitability	33	89%
Marketing purposes	30	81%
Enhance operational control	33	89%
Other(Globalization)	27	73%

Effects of ICT use in Hotels

Subsequently the study sought to establish the effects (benefits) that were derived from the utilization of ICT in the hospitality industry. The research findings revealed that 84% of the respondents benefited from a high client turnout, while 89% benefited from an increase in revenue. Whereas 78% enjoyed a reduction in administration costs, 86% benefited from labour flexibility. Mostly 92% of the respondents benefited as a result of improvement in quality and service and 95% enjoyed benefit as a result of easy implementation of changes (figure 2).
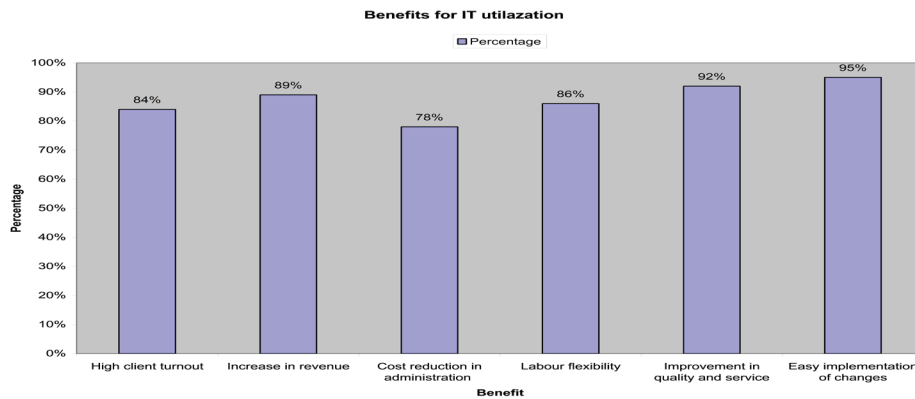
Benefits for IT utilazation

☐ Percentage

Figure 2: Impact of ICT in the hospitality industry

Challenges in using ICT

In finding out on the challenges brought about by utilizing ICT within the hospitality industry a majority of the respondents (97%) indicated that they face the challenge of expensive rectification of breakdown, be it the system or the equipment. Besides, while 95% mentioned the occurrence of expensive restructuring as a challenge, 62% felt that retrenchment of employees was a challenge. Additionally, 89% of the respondents felt that there was a challenge resulting from replacing the much needed human aspect with ICT components. Table 2 below provide the rest of the information.

Table 2: Challenges faced when using ICT in the hospitality industry

Challenge	Response	Percentage
Expensive rectification of breakdown	21	57%
Occurrence of expensive restructuring	24	65%
Retrenchment	23	62%
Regular changes in IT components	18	49%
Slow human operation	21	57%
Replacing human aspect of service with IT	19	51%

How to Overcome ICT Challenges

With respect to how the challenges mentioned above coud be solved or overcome, staff training, strategic installation of IT machines, spreading of IT costs over years and upgrading of software and machines were frequently mentioned (figure 3).
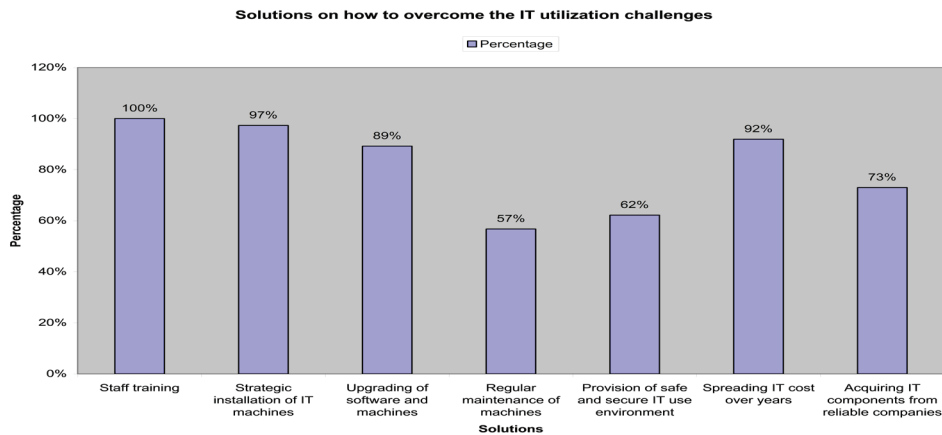
Solutions on how to overcome the IT utilization challenges

Figure 3: How to overcome the challenges as a result of using ICT

Discussions

ICT use and Computerized Hotel Applications in use
The results indicate that there was indeed utilization of information in the hospitality industry. Overall the findings suggest that the hotels have focused on employing technologies that improve productivity and enhance revenue, e.g. reservations systems, telephone/call handling systems, stock control, electronic point of sale systems, financial accounting and payroll systems as well as to some extent recipe costing. However it has not given strategic priorities to technologies designed to improve guest services e.g. electronic door locking systems, in-room mini-bar and in-room entertainment.

It was also established that despite the many computerized systems available for use in the hospitality industry, most of the hotels used the following hotel application systems; reservations systems, telephone/call handling systems, stock control, electronic point of sale systems, financial accounting and payroll systems as well as to some extent recipe costing. These systems were considered to be the most vital in the running of a hotels operation. The research further established that efforts to employ ICT to enhance guest services, such as, in-room entertainment, EMS, In-room mini-bars, electronic door lock systems were underutilized in many of the hotels in Mombasa.

Benefits of Using ICT on Service Delivery (Positive Impact)
Despite the well documented challenges associated with achieving satisfactory return on investments in technology, hospitality companies today continue to spend vast amounts of money on information and communication technology (ICT) in the constant effort to improve their competitive position. With IT spending on the rise, there is little doubt that being able to bring value out of these investments is of paramount importance (Sheldon, 1997). The study found out that there was an increase in client turnout to the establishments, because with the use of ICT, customers anywhere can be able to access promotional material at a time that is convenient for

them and make the necessary bookings even without going to the sales people. Above all the increase in client turnout was attributed mainly to the improved services as rendered by the staff. The accuracy of computers helps to reduce mistakes, which leads to increased guest satisfaction and better control over operations.

The research also found that the hotels utilizing ICT had an increase in revenue, due to better operational control, where with the use of ICT production processes are easily traceable, and also because of the reduction in operational costs as well as reduction in administrative costs has led to savings which in turn increase the revenue. The use of chargeable internet access to guests has also led to increased revenue as well as the charges resulting from the use of the business centres. The use of websites to mainly provide information to prospective and potential clients may also lead to increase in revenue in the long run. The study further established that there was considerable reduction in administration costs because the use of ICT leads to reduction in staff which can be translated into cost saving by reducing staff numbers. Further reduction was achieved due to the reduction in many of the clerical jobs and much paperwork eliminated hence savings in stationary and related usable. Because of the call accounting systems in use there has been a greater saving in telephone costs. The research also found out that there was labour flexibility because staff utilizing ICT are capable of doing other related jobs, which led to reduction in staff numbers and due to the fact that the staff are multi-skilled.

The study further established there was a great improvement in quality and service rendered to the clients, because technology has increased efficiency in the hospitality industry. Since the use of computers has enabled organizations to store, process, manipulate and distribute information. They have enhanced utilization to store, process, manipulate and distribute information. They have enhanced utilization of staff in the hospitality service and guest contact points. This has led to improvement of productivity and service quality in hotels. ICT also plays a critical role in improving performance because it allows for altering relationships and the flow of information to the right parties. Likewise the research established that hotels benefited from the ease in implementation of changes, since the use of ICT has made it easier for changes to be effected as compared to manual systems. Changes due to globalization of the hotel industry are easily implemented. However, the degree to which service organizations are embracing ICT as a means of building new business capacities varied widely.

Finally, computerization promises many benefits to hospitality organizations including improved service quality, enhanced profitability and efficiency, better integration of departments, speedier communications and reduced costs. As a result, hospitality organizations have adopted a wide variety of technology-based systems, a phenomenal rate, with most now using multiple systems to automate different functions (Nayer, 2011).

Challenges Faced when using ICT (Negative Impact)
The study established that expensive rectification of breakdown for both the systems and associated machines was the biggest challenge; computers and associated components may at any time malfunction due to various causes, and when they do they required a large financial expenditure to return them to normal operation. With the utilization of ICT, it was further established that occurrence of expensive restructuring was another big challenge, where some ICT components required special customized environment, as well as restructuring of the labour force, which may include training or retraining of staff. In the same line purchase of the ICT related components is cost oriented and expensive. The study also found out that retrenchment was another challenge, especially during the initial adoption of ICT, where staffs are rendered redundant due to the the use of

ICT in the functions that they initially performed. The cost or retrenching these staff is high, and in some cases it led to industrial disputes which were sometimes expensive to settle.

The research further established that regular changes in ICT components was a key challenge, newer and more improved computerized systems are developed on a regular basis as well as changes in hardware components. This becomes expensive since other current systems are rendered non functional and may require overhauling. The results also indicated that there was a challenge in replacing human aspect of service with ICT, where due to hospitality services being interactive in nature between the consumer and the service provider, a problem rises which may make the fully computerization of certain aspects impossible. A further finding related to the human aspect was the possibility of slow human operation in case of a system breakdown.

Solutions to Overcome the Challenges
The results indicated that staff training on the use of ICT and related aspects was prudent. The training also includes training staff on the benefits of ICT so that they may not have a negative attitude towards ICT. Staff and other ICT users need also to be trained on how they may spot a malfunction in order to necessitate a check-up to prevent breakdowns. The study also further established that strategic installation of ICT machines was paramount in order to overcome the occurrence of expensive restructuring by identifying the key areas that needed to be computerized and funds dedicated to that area before embarking on other aspects. The research further indicated that upgrading of software and ICT machines could be a solution to the regular changes in ICT components, although there was the indication that this may be an expensive venture. It was also indicated that regular maintenance of ICT machines could be the solution to expensive rectification of breakdown, this enabled problems to be identified and corrected early enough.

The provision of safe and secure ICT use environment was also found to be a solution where operational conditions for ICT machines are maintained. The study also established that the solution for the heavy expenditure involved in ICT utilization was to spread the ICT cost over years, in which just a fraction of the total expenditure is actually charged during the current financial year and the rest in the subsequent periods. Finally, the research indicated that acquiring ICT components from reliable companies was indeed vital so as to be assured of reliable updates and or repairs in case of a breakdown of the systems.

Conclusion
Information and communication technology is used to take advantage of slower moving competition by providing better service, improved decision making and increasing revenue. In the hospitality industry there is continued development of information and communication technology with a special emphasis on computer reservation systems. The pace of technological change is presenting the hospitality industry with many new opportunities and the management of information and communication technology will be a key business activity in the future. Automation within the hospitality industry will continue to be an important technique to reduce the expenses of doing business. Unfortunately, many hoteliers are slow to invest adequate amounts on technology on a regular basis. This may be because the functions automated by hospitality systems are generally one where previous capital expenditure lasted for a very long time. However new products, new technologies and new features are constantly evolving, and systems need to be continually updated to take advantage of the benefits that such development can offer.

Recommendations

To enhance competitive advantage, managers will need to incorporate more guest-service technologies e.g. electronic door locking systems, in-room mini-bar and in-room entertainment, within their key offerings to customers or be left behind. The infusion of technology to provide personalized services, service recovery, and other guest-service needs is the next wave and potentially the most sweeping new use of IT to affect the hospitality industry. To enable successful adoption of IT: the IT managers should include, (1) gaining support of top management, (2) involving marketing and operations personnel in IT decisions, (3) providing adequate training, and (4) selecting flexible systems that can be modified and upgraded easily to maximize return on investment. There is need for the hotels to adopt and use systems such as conference and banqueting systems, electronic door locking systems, energy management systems, yield management systems as well as sales and marketing systems. These systems will improve the hotels operational capabilities. There is also a need to adopt and use the e-commerce more for procurement in order to enjoy benefits as provided by the use of the tool.

References

Bocij, P., Chaffey, D., Greasley, A. and Hickie, S. (2006). *Business Information Systems: Technology, Development and Management in E- Busines,.* Prentice-Hall. London.

Buick, I. (2003). "Information technology in small Scottish hotels: is it working." *International Journal of Contemporary Hospitality Management,* 15 (4): pp 243-247.

Cho, D. R. (2001). Tourism Distribution Channels: Practical Issues and Transformations, Continuum. London.

Clifton, H., Ince, D. and Sutcliffe, P. (2002). *Business Information Systems*, Prentice - Hall. London.

Desinano, P. (1996). Developing Information Technology: Options in the Hospitality Industry, The Value Chain Approach, John Wiley and Sons. New York.

Haywood, M. (1990). A Strategic Approach to Managing Technology, Cornell Hotel and Restaurant Administration Quarterly, 31(1): 39-45.

Jeong, M. (2003). "Conceptualizing Web Site Quality and its Consequences in the Lodging Industry.*" International Journal of Hospitality Management,* 22 (2): pp 161-175.

Kenya Association of Hotel Keepers and Caterers. [Online]. Available from: http://www.kahc. co.ke/ members' directory. (Accessed on 10th April 2010).

Lovelock, C. H. (2000). Service Marketing: People, Technology, Strategy, Prentice Hall. NY.

Mugenda, O. and Mugenda, A. (2003) Research Methods: Quantitative & Qualitative Approaches, Acts Press. Nairobi.

Nayer, M. (2011). Will Technology Replace Hospitality? [Online]. Available from: http://www.4hoteliers.com/features/article/6071 (Accessed on 15th June 2012).

O'Connor, P. (2004). Using Computers in Hospitality, Prentice Hall. New York.

Onunga, J. (2002). Introduction to Microcomputers and programming (3rded.), ISA. Nairobi.

Schegg, R., and Murphy, J. (2003). "Five-Star Treatment? E-Mail Customer Service by International Luxury Hotels." *Information Technology and Tourism,* **6** (2): pp 99-112.

Sheldon, P. (1997). *Information Technologies for Tourism*. Oxford: CABI.

Sirirak, S., Islam, N. and Khang, D.B. (2011). Does ICT adoption enhance hotel performance? *Journal of Hospitality and Tourism Technology,* 2 (1), pp 34-49.

Stare, M., Jaklič, A. and Kotnik, P. (2006). Exploiting ICT potential in service firms in transition economies. *The Service Industries Journal*, 26 (3), pp 287-302.

Zhou, Z. (2004.) *E-commerce and Information Technology in Hospitality and Tourism,* Thomson. New Delhi.