Full Length Research Paper

State of affairs in ICT usage within tourist hotel operations: A case of Zanzibar

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Abstract

Rapid and meaningful development of information communication technologies (ICTs) and the expansion of the internet have entered in all aspects of human life. Tourism as one of the currently fastest growing industries across the world cannot progress without ICT support so are the tourism based hotels. The study focused on tourist hotels in Zanzibar. Using a descriptive and cross-section design, this study investigated the nature of ICT resources and the prevailing encumbrances to the utilization of ICT in Zanzibar. Results indicated a high level of awareness and usage of ICT applications in Zanzibar's hotel industry. However, utilization in e-booking and e-reservation is still low. Theoretical and policy implications are discussed.

Keywords: ICT, tourism sector, tourism hotels, Zanzibar.

INTRODUCTION

Background of the Study

Rapid and meaningful development of information communication technologies (ICTs) and the expansion of the internet have entered in all aspects of human life. Tourism as one of the currently fast growing industries across the world cannot go further without ICT support. In today's world, the tourism industry must have appropriate adoption of ICT innovations in order to gain a new shape which is acceptable in the modern business world. This study investigates the usage of ICT and its application in the tourism hotel industry.

Tourism hotels in Zanzibar are important sources of employment as well as creation of new interrelated business opportunities to increase the stream of revenue to the government in terms of tax and improving innovation. Similar views are supported by Yuan *et al.* (2006) and Kolter and Armstrong (2008) that tourism contributes to employment, innovation and entrepreneurship. In Zanzibar, the tourism sector grows at an average rate of 4% per annum (MFEA, 2005).

Although the tourism sector is reported to have economic and cultural benefits (MFEA, 2005), the drivers of the sector's competiveness have not received rigorous academic attention for a reliable and valid competitiveness framework. In the context of tourist hotels, Jennifer *et al.* (2003) argue that businesses attain competitive advantage by either offering competitive prices or differentiating products and services. On the other hand, Kumar (2001) suggests that hotels as service providers cannot gain competitiveness to deliver superior value to their customers without the appropriate adoption of ICT. Because of the dispersed and varied tourist needs, hotels that focus on tourism can leverage their offerings through ICT to acquire advance knowledge of their clients and provide one-stop centers by utilizing online applications.

As argued by Porter (1980), ICT serves information from the buyers to sellers and forth. Through ICT especially the internet, the world has become more transparent and interconnected. Networks, information, knowledge, skills and ideas are transmitted, accessed easily and shared at a minimum cost. This leads to efficiency by reducing the communication barriers that

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affect customer satisfaction and enables suppliers to be efficient and effective in their production. In a general perspective, Boyne and Williams (2003) and Kumar (2001) support the idea that ICT reduces organizational costs and this leads to overall performance of tourism firms.

When used appropriately, ICT is thought to help and strengthen the relevance of tourism to the increasingly digital sector, raise tourism quality, accelerate service participation and increase customer citizenship in form of loyalty. Despite the appealing role of ICT in reshaping the interaction between tourist hotels and their dispersed market, research relating to ICT and the hotel sector appears to have ignored emerging economies (Zanzibar inclusive). Notable studies include, reinforcing hotel operations efficiency through ICT in Italy (Baggio, 2004), role of ICT in operational productivity in Thailand (Sirirak, 2010), ICT and competitiveness in Slovenia (Muhalic and Buhalis, 2013) and others. Despite these studies, their generalisability is not yet beyond doubt because emerging economies have not been considered to the extent that even the nature of ICT used in developing economies hotel sector as well as their burdening challenges are not yet well studied. This has left the understanding about the relevance and role of ICT and related applications in the tourism hotel sector a debatable matter. In an attempt to fill this empirical gap, this study was set out to establish the state of affairs of hotel related ICT in Zanzibar so as to provide an academic springboard for future research. The descriptive nature of the article is because it attempts to explore the prevalence and level of application of ICT.

Statement of the problem and purpose

Tourism industry is a new hybrid of business especially in Zanzibar. Literature argues that tourism cannot go further without a support of ICT application (Buhalis, 1998; Collins, Buhalis, and Peter, 2003; Kumar, 2001; Yuan et al., 2006; Jennifer et al., 2003; Yuan et al., 2003; Kolter and Armstrong, 2008). Although ICT is an important component in the competitiveness of hotels in the tourism sector (Muhalic and Buhalis, 2013), little has been studied in developing countries (Samkange, 2008) such as Zanzibar. This study was therefore instituted to establish the nature of ICT tools used and the challenges faced by the tourism hotel sector in the utilisation of ICT.

Lliterature review

Information communication technology (ICT)

There is no universally accepted definition of ICT because the concepts, methods and applications involved are constantly evolving on an almost daily basis. Badnjevic and Padukova (2006) define ICT as a diverse set of technological tools and resources used to communicate, create, disseminate, store, and manage information. Thus, ICT refers to forms of technology that are used to transmit, store, create, display and exchange information by electronic means. The Information Technology Association of America (ITAA) defines ICT as the study, design, development, implementation, support, and management of computer-based information systems, particularly software applications and computer hardware.

From the above definitions, the term ICT includes electronic information-processing technologies such as computers and the internet, fixed-line telecommunications, mobile phones and other wireless communications, networks, broadband, and various specialized application devices ranging from barcode scanners and braille readers. ICT devices can be embedded in other machines and appliances to increase their functionality.

ICT and tourism

Holloway (2004) defines tourism as the business of providing for different types of visitors; overnight or longer stay and day visitors including accommodation, car parking, entertainment and attractions, food and drink. According to Beech and Chadwick (2006), tourism involves activities of traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business or other purposes.

ICT as a tourism tool allows users to participate in a rapidly changing world in which work and other activities are increasingly transformed by access to varied and developing technologies. By this, ICT is technology's version of economic growth to satisfy the needs and wants of the community over time (Buhalis, 1998). Organizations are forced to adjust and take advantage of the opportunities provided by ICT in order to stay competitive. Businesses that do not take advantage of the ICT run the risk of losing customers and their competitive advantage (Sharma, 2002). Some of the functions that technology has impacted are information search, advertising, consumer buying patterns and behaviors (Hanson, 2000). Globally, all industries have been affected by the emergence and implementation of technological advances.

The information gathered through technology allows organizations to customize their products and services (Ahn et al., 2003) and economic transformation (Lippis, 2007). ICT in conjunction with globalisation and the information revolution have reshaped industries by increasing the speed of international communi-cation (Lippis, 2007). This has promoted innovation, increased productivity and enriched the quality of life (Sharma *et al.* , 2006; United Nations, 2006).

In a tourism perspective, ICTs have been applied in tourism since the early adoption of Computer Reservation System (CRS) in airlines during the 1950s and in the transformation to Global Distribution Systems (GDSs) in the1980s (Jennifer et al., 2003). ICT development brought a great change to the structure of the tourism industry by providing tourism stakeholders an opportunity to sell their products worldwide directly to the consumers especially through internet, World Wide Web (www), e-commerce and e-business by providing a wide range of online business activities that restructured tourism into e-tourism.

The tourism industry in today's business world has become an extremely sensitive hybrid industry that incorporates distinct features of the information society. It is heavily impacted by technological changes due to the nature of the business which is efficiency focused and information sensitive (Gretzel et al., 2000). Yuan *et al.* (2003) suggest that the role of ICT in tourism cannot be underestimated and it is a crucial driving force in the current information driven society. It has provided new tools that facilitate business transaction in the industry by networking with trading partners, distribution of product and providing information to consumers across the globe. The ICT applications (Web-based technology or internet) have helped tourism stakeholders perform effectively and efficiently by sharing information with visitors at their highest level of convenience and speed. In addition, internet technology enables the tourism SMEs to perform activities outside the scope of their organizational boundaries and perform service activities to better service more than their customer expectations.

ICT helps in getting specific customer information needs through interactive searches, assisting a visitor in making a hotel reservation or creating customized information search for the visitors (Hanson, 2000). In this respect the ICT applications especially internet has become an important communication tool for tourism because what and how information is presented has a great influence in the perceived image of the destination (Gretzel et al., 2000).The consumers are using online resources to obtain information and plan their trips to travel. Such plans include identifying and developing tourism sites and destinations (Gartrell, 1988). When an individual decides to make a leisure or business trip they have different options to facilitate the information search, decision and buying process for their travel arrangements.

According to Palmer and McCole (2000), the definitive goal of tourism is to create a competitive advantage over other destinations and to promote the use of its services for the customers' future visits. Tourism related companies, have used websites as an information portal, transaction engine, and decision-making tool for customers (Yuan. et al., 2006). The use ICT in tourism industry has an important role in reducing geographical barriers and leading the tourism stakeholders into a

global market with unlimited alternatives of products and suppliers at low transaction costs. This alters the structure of the entire industry and develops a whole range of opportunities for all stakeholders. Not only does ICTs empower consumers to identify, customise and purchase tourism products they also support the globalization of the industry by providing effective tools for suppliers to develop, manage, and distribute their offerings worldwide (Buhalis, 1998).

ICT as a competitive advantage strategy in tourist hotels

According to Jennifer *et al.* (2003), a well managed ICT system helps to gain competitive advantage by either maintaining price leadership in the market or by differentiating products and services. Hence the strategic implementation of ICT and internet becomes critical for all companies trying to survive. ICT has crucial role in creating sustained a cutting edge in information access and utilisation for superior customer access and loyalty (Yuan et al., 2003). According to Kumar (2001) the impact of ICT in tourism allows hotels to reach global audiences. Tourist Lodges hotels and governments across the continent maintain sophisticated websites and advertise their unique features, handling booking order and promoting specials to potential guests.

ICT has the potential to change the tourist hotels in improving their productivity at a lower cost and to raise the quality of information. It contributes to tourist attraction around the globe. In today's world, people want to find the appropriate tourist destinations, booking and buying airline tickets, check in and getting boarding passes when they are in their home or offices. All these can be done with the support of ICT.

Tourism and the economy of Zanzibar

Tourism is currently one of the fastest growing industries in Zanzibar. Tourism is a service industry as it does not manufacture but renders services to various classes of people and sectors. It is a combination of various interrelated industries and trade such as food, transport, entertainment and hospitality. It involves multiple socio-economic activities like attracting people to a destination, transporting, housing, dining and entertainment.

Zanzibar is rich in tourist attractions spanning from a peaceful atmosphere and friendly people, historical sites including stone town, wealth of cultural and folkloric tradition, healthy sunny climate, and proverbial sandy beaches graced with cool and fleshing sea breezes including accommodation, tour operations and tourism related heritage centers (VCA, 2009). In the process, it brings about tremendous infrastructural improvements and helps development of the region. An often cited

Table 1. Types and classes of hotels

Types of Hotels	Frequency	Percentage
Luxury hotels	4	20
Retreat hotels	1	5
Resort/bungalows	11	55
Boutique hotel	3	15
No response	1	5
Total	**20**	**100**
Classes of Hotels (* Means Star grading)		
*	4	20
**	5	25
***	8	40
****	1	5
*****	2	10
Total	**20**	**100**

achievement of Zanzibar economy during the last decade has been the emergence of an ICT sector which has shown vibrancy in terms of output and export growth. However, the contribution of ICT to an economy can be viewed at two different levels; contribution on account of ICT growth and latter diffusion. While the former refers to the contribution in output, employment and export earning, the later refers to ICT including development through enhanced productivity, competitiveness, human capital development and welfare on account of the diffusion to the different sectors of the economy and society (Kramer and Derick , 1992). Tourism earns foreign exchange without exporting national wealth but needs high level of ICT diffusion to be able to deliver quality and peak experience.

In Zanzibar, tourism contributes 20% to GDP and the sector is growing at an average rate of 4 percent per annum (MFEA, 2005). The sector has emerged as a single largest net earner of foreign exchange. The Zanzibar Government established a commission for tourism to plan develop and promote Zanzibar as tourist destination (VCA, 2009). In most developing countries like Zanzibar, tourism is an important sector because of the absence of other sectors such as manufacturing, economical agriculture and major innovation break throughs. Hence, in such economies, tourism is of indispensable value because of its high linkage factor and stimulation of other sectors such as trade and commerce.

MATERIALS AND METHODS

This study was descriptive in nature and crossectional. It was carried out in Zanzibar. Zanzibar is an archipelago of two Islands; Unguja and Pemba. Unguja is the most active tourist area compared to Pemba. The units of

analysis for this study were hotels which were licensed and legally registered by Zanzibar Tourist Cooperation (ZTC). 62 hotel owners and owner managers were surveyed.

Stratified sampling was used to group the NEC hotels into three geographical strata; Kiwengwa, Matemwe, and Pwani mchangani. Out of 42 hotels situated in NEC (ZCT, 2010), thirteen hotels are at Pwani mchangani, fourteen hotels in Matemwe and 15 hotels are in Kiwengwa, representing 31%, 33% and 36% respectively of the entire hotel population in NEC area. 20 hotels were selected proportionally according to the number of hotels in each area as follows: Pwani Mchangani (6 hotels), Matemwe (7 hotels), and Kiwengwa (7 hotels). Different classes of hotels were selected to avoid the bias of smallness and/or client homogeneity. This heterogeneous nature of hotels and clientele enabled the study to obtain a balanced view of ICT usage. The key premises of analysis were the nature of ICT facilities available in Zanzibar, prioritization of ICT usage and challenges faced in utilizing ICT facilities. These aspects were purposely selected because they affect the diffusion of ICT in many sectors. Descriptive data was collected using questionnaires and analysed using SPSS. Results are presented in statistical tables.

RESULTS AND DISCUSSION

This section presents and interprets the results of the study. It shows the general statists and later the key area of ICT state of affairs (Table 1) Majority of the hotels were the resort bungalow type where one takes an entire facility. They are usually taken by family package tourists. The least were the retreat type of hotels with only 5%. As for classification, majority of the hotels were 3-Star (40%) and the least were 4-Star (5%). This implies that most

Table 2. General statistics

Educational level	Percentage		
Certificate	40		
Diploma	30		
Undergraduate Degree	20		
Master**s**	10		
Non-formal education	0		
Gender			
Male	60		
Female	40		
Age			
Under 21	0		
21-30	20		
31-40	35		
41-50	30		
50+			

Table 3. ICT facilities in the Zanzibar's Hotel sector

ICT Facilities	Mean	Std. Deviation
Telephone and fax	4.40	.503
Internet	4.30	.733
e-mail services	4.05	.999
TVs and other communication media	3.60	1.188
Bank card services	2.85	1.089
e- booking	2.75	1.020
e- reservation	2.60	.940
e- commerce	1.85	.587

5= Highly available, 4= Available, 3= Less available, 2= Very scarce, 1= Not available at all

tourists to Zanzibar prefer bungalows and medium class (Table 2)

The authors were interested in establishing the education levels of the ICT staff at the hotels. It was established that majority (40%) had only attained Certificate level of education. In the Zanzibar higher education hierarchy, this is the lowest level of education. Only 30% had undergraduate and master's level of education. It is important to note that education is an indicator of the quality of human resources therefore this low level of general education may imply some degree of incompetence and subsequently affect the quality and intensity of ICT diffusion in the hotel sector.

For gender, majority of the respondents were males (60%). As for age, the majority group were in the 31-40 category while the least represented age group were those aged 50 years and above. Considering the newness of ICT applications in Africa's hotel sector, the age groups that lead in the sector's staffing seems to be slightly ahead of the sophisticated versions of ICT. For example those above the age of 31 up wards make 70%. This may mean that they are still comfortable with old technology and use computers for mailing correspondences only not the e-business applications (table 3)

One of the main objectives of this study was to establish the nature of ICT facilities used by hotels in Zanzibar. It was established that telephone, internet, and email applications were more available with each having a mean of 4 and above. Banking services, e-booking and e-reservation were less available with a mean of less than 3. The least used was e-commerce which was very scarce. This means that the ICT applications do not meet the current global standards of offering an all encompassing hotel service package that is self contained and can facilitate a full service offering. Such may weaken the competiveness of these hotels especially with the upper class of tourists and other

Table 4. Challenges of ICT usage by tourist hotels in Zanzibar

ICT challenges	Mean	Std. Deviation
Low internet speed	4.00	.918
Un reliable power	3.90	1.252
Very costly	3.70	1.261
Un skilled labor	3.65	1.040
Unreliable service providers	3.50	1.147
Cyber security	2.85	.988
System failure	2.45	.686
Unreliable out sourcing personnel	2.35	.813
Outdated ICT tools	2.20	.616

5=Very prevalent , 4= Prevalent 3= Less prevalent, 2= Sometimes prevalent, 1= not sure

guests that may wish to carry on their routine transactions without moving out of the hotel to search for other ICT enabled facilities such as credit cards.

Prioritization of ICT use

Considering the role of ICT in strengthening competitive advantage, the authors were interested in establishing the extent to which hotels prioritize the use of ICT in facilitating their operations. It was established that 40% of the hotel owners regard ICT as extremely important while 55% just regard it as important. On the other hand, 5% did not see the need for ICT applications in their operations. Although the prioritization seemed to be high, the implementation and actual commitment to the usage of the applications was low. Therefore, the nature of ICT tools is very important to consider while analyzing its prioritization. For example, most of the people tend to think that ICT is about having computers connected to the internet. Yet, ICT goes beyond that to include business operations systems with technology applications.

Generally, ICT tools such as usage of internet, e-mail services, telephone, fax, and TV were common for all respondents. These results are similar to Natujwa (2001) who found that most of the SMEs in Tanzania used telephone, mobile phone, fax and computers. The findings revealed a significant low utilization of ICT in the area of e-booking, e-reservation and e-commerce yet most of them have own websites (95%). But again the question of how often they update and use the websites raises a concern. Asked whether they frequently train their staff in ICT applications, only 45% do it more frequently while the rest do not. Again future research needs to consider the nature of training received and its relevancy in hotel ICT applications. Moreover, Natujwa (2001) reports that most of the SMEs in Tanzania do less or no investment in ICT. Such could be the reason less is budgeted for ICT updates coupled with only 25% having

dedicated ICT units (table 4)

It was revealed that low internet speed was the leading prevalent strain and appears to have affected almost every one because of a low standard deviation. Other challenges included unreliable electricity, high ICT costs in form of subscription and upgrading, unskilled labour and unreliable service providers. Others although with less prevalence included cyber security, unreliable outsourcing personnel and outdated ICT tools. Looking back at the level of education, it becomes evident that some of these hotels have heavily invested in the tools but their main challenge is lack of the organizational desire to diffuse the technology especially at operational level. The low level of internet speed compared to outdated ICT tools may imply that either the hoteliers import cheap used tools for purposes of feeling that they are part of the mantle to use them. However due to their outdated state, the tools may become inefficiency and sometime ineffective by failing to become compatible with modern servers used by the targeted markets.

Similar challenges are reported to prevail in Kenya (Samkange, 2008) especially the lack of local capacity to manipulate imported ICTs to suit the local situation. In Italy, it was also established that the hotel sector still records low levels of ICT usage (Baggio, 2004). Because of the high level of digital divide between the developed and developing economies, the latter are still burdened by high costs and low level of subscription to enable cost reduction through economies of scale. Similar observations were made by Shanker (2008) during the international conference on tourism in India. What needs to be done is to empower the ICT staff with the knowledge and positive attitude towards embracing the upgrading of modern hotel aps.

Addressing the challenge of staff competences in the application of the ICT tools in these hotels will help to solve other challenges such as system failure and unreliable outsourced ICT staff.

Related findings were also established in previous studies. For example, research by Badnjevic and

Padukovas (2006) found that the negative factors in ICT adoption were lack of education, bureaucracy and physical infrastructure. They noticed that slow internet connection and band breadth were also obstacles. Related findings are also seen in Malaysia (Kasim and Ern, 2010).

CONTRIBUTIONS, CONCLUSION AND RECOMMENDATIONS

Contributions of the study

This study introduces insights about the state of ICT in Zanzibar. Despite its descriptive nature, the study attempts to identify some of the key aspects that the tourism hotel sector in Zanzibar utilises ICT tools. This of course points to the business opportunities for those involved in the supply chain as well identifying the unexploited technologies such as destination management systems. The article further explores the challenges faced by the hotel sector in utilizing the ICTs. Zanzibar being a tourism dependent economy, this study informs regulators and decision makers about what could be the reasons behind the poor performance of the sector at a global level especially on the digital divide between Zanzibar and the rest of the world. For tourism and research scholars, the paper ignites a debate on the role of ICT in destination and hotel competitiveness as well as performance in different perspectives. So the most important question becomes; is it because of ICT that developing countries are not competing favorably in a global context? Does ICT matter? and; to what extent. This paper triggers the debate and proposes areas for further research.

CONCLUSIONS

The Tourism industry has been and will be, facing a technology-based revolution. High-tech services have become a requirement for demanding and sophisticated hotel guests. A new challenge for managers in this century is how to integrate the new, complex and varied services and ICT systems into their existing business operations. As previously stated, the emphasis in most Zanzibar tourism industry ICT applications is primarily on administrative and operational functions.

The low level of ICT diffusion and application may be attributable to challenges such as low speed connectivity of internet, inconsistency of power, high cost, cyber insecurity, unskilled labor and unreliable ICT service providers. This means that ICT utilisation is still low and may not deliver value for money. Such may make the investors in the sector perceive ICT tools as not worthwhile. The key action to take at this point is to arouse the owners, managers and ICT staffs in those

hotels to maximize the utility of ICT by creating more products and branding opportunities. Such may be through more training and close interaction with the ICT service providers for more skills on how to create and utilise the hotel and tourism ICT aps.

Managerial and policy implications

There is need for the hotel sector investors to incorporate ICT in their efforts to improve service quality so as to strengthen the loyalty of their clientele whilst creating an impressive image and convenience in reaching out to their potential customers. It was also established that there is low rate of diffusion of ICT applications related to the hotel marketing sector. This may be due to lack of enough training and awareness about these tools. When one looks at the nature of the staff especially those in the ICT departments, their general level of education is low. This may limit their intellectual networks. Therefore in the long-run, the awareness and applicability of the ICT tools may be limited. This raises a need to either overhaul the recruitment policy of these hotels and attract ICT professionals that can apply the ICT tools to utilise e-commerce and other e-marketing tools to be able to link to the rest of the world with more entrepreneurial aggressiveness to attract better quality guests.

One of the key established challenges was the high cost of ICT applications and unreliable power to run the tools. This appears to be an external threat to the development of ICT. In this case, the authorities such as the government in conjunction with TANESCO (the official power distributor in the country) need to improve the voltage and reliability of power supply. If this is not done, the other policies of fostering ICT usage in the country will be compromised because people will fear to invest in the technology because of the associated losses ranging from technical breakdowns with heavy repair costs and massive loss of business when there is no communication with other stakeholders such as the travel agents to connect with their visitors and hosts.

In the advent of smart phones and the availability of extant mobile aps including the hospitality aps of real time communication, there is an ardent need for the investors in the hotel sector in Zanzibar to look beyond the usage of desktop computers as the only applicable ICT tool. They are expensive and sometimes unreliable. To avoid or at least minimize the challenges associated with unreliable electricity, there is need by the sector players to embrace new mobile ICT technologies. Such include the use of smart phones, iPads and other tools because they can retain power for long whilst using many tourism and hotel aps such as e-booking, e-payment, e-check-in and a host of other competitive aps.

What needs to be done is therefore to educate and encourage people to use these tools beyond calling and receiving messages to a level that can help them make

their businesses more competitive through business to business networks, electronic payments, market search and business to customer networks. Although it sounds like the role of the government, the service providers need to make extra effort to educate their clientele on how to maximise their service utility. What the government can do is to regulate the charges associated with these apps and setting up policies that emphasise reliability and security to avoid cyber crime. This can be through strengthening the Zanzibar Communications Commission in terms of expertise and policy.

Suggestion on the direction for future research

The objective of this study was to establish the nature of ICT usage and diffusion. Due to limited resources in terms of time and finances, the survey was made only for Zanzibar East cost tourist zone based on the hotel tourism sector. There is a need therefore to conduct a study across the whole island so as to get a holistic view of the state of affairs. This will help to establish a comprehensive perspective to easily guide policy and the practitioners on how to improve the diffusion and application of ICT in the hotel sector for better competitiveness.

Future studies can also consider assessing the extent to which the incorporation of ICT can improve different areas of business such operational efficiency, market accessibility, client loyalty and market attractiveness.

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