Assessing the Levels of Knowledge Transfer within e-Commerce Websites of Tourist Organisations in Africa

Tonderai Maswera, Ray Dawson and Janet Edwards
Research School of Informatics, Loughborough University, UK
t.d.maswera@lboro.ac.uk
r.j.dawson@lboro.ac.uk
j.edwards@lboro.ac.uk

Abstract: This paper reports research to investigate how tourist organisations based in Africa acquire, disseminate and apply knowledge through their websites. Interactivity is the key to put information into context to become knowledge. A survey found there are some interactive knowledge-transfer tools provided on the websites of African tourist organisations, but only on the few, fully-fledged e-commerce websites was knowledge transfer being effectively utilised. The authors recommend that organisations incorporate more tools to acquire and apply knowledge as it is fundamental for e-commerce success.

Keywords: knowledge transfer, e-commerce, tourism, Africa

1. Introduction

The importance of information and communications technology (ICT), especially of the Internet in the travel and tourism industry, has greatly increased in recent years (Gratzer et al 2004). The Internet has led to the rapid growth of electronic commerce (e-commerce) because of its ability to reach every corner of the world and also provide an unprecedented level of connectivity and the ability to communicate efficiently at modest cost. E-commerce and tourism compliment each other very well. The tourism industry is an information intensive industry in which the Internet is already playing a significant role by allowing information to flow on a worldwide basis with virtually no entry barriers.

E-commerce forces companies to look for new ways to make themselves more competitive. The Internet enables companies to attract and retain customers by customising products and services according to their needs and to restructure the way they do business to give an efficient and effective customer service delivery (Shin, 2001). This can be achieved through electronic Customer Relationship Management (eCRM) in which companies use web-based facilities to communicate with their customers (Schoder and Madeja, 2004). This entails companies gathering data and information about their customers’ needs, wants and preferences, to bring together e-commerce transactions and traditional customer service.

According to Grover and Davenport (2001), knowledge is defined as the most valuable form of content in a continuum starting with data, encompassing information, and ending at knowledge. Therefore, information collected from customers obtains greater value when it is converted into knowledge. The tourist organisations who are able to process their information to turn it into knowledge and who manage their existing knowledge effectively will emerge as winners (Schmid & Bach 2000). The competitiveness of companies active in areas with a high rate of change depends heavily on how effectively they acquire, maintain, exchange and access their knowledge, and whether they can relay the right information to the right person at the right time wherever they are. This paper reports research to discover whether there is any exchange of knowledge between the organisations and the customers in an effort to improve customer service which, according to Garvey (2000), is a topic that has been largely ignored. The effective sharing of ideas, knowledge, or experience between tourist organisations and their customers will encourage customers’ understanding of contextual knowledge and foster collaboration and trust. The ability to find, interrogate and exchange knowledge is fundamental for business-to-business and business-to-consumer e-commerce.

The emergence of the Internet has also created a dynamic, electronic marketplace, where a new species of e-commerce organisation is being established (Singh & Kundu, 2002). At the heart of the e-commerce organisation is the website through which all the transactions take place. Besides supporting online transactions, a website can also give customers a means to obtain information about products and services (Kohavi, 2001) and companies the means to obtain information about their customers. With the growing importance of knowledge in e-commerce, one of the main purposes of a website is the ability to acquire knowledge by the both the customers and the organisations (Fang & Holsapple 2003).
This study of African tourist organisations examines the website facilities for sharing ideas, knowledge and experience between themselves and their customers. Tourist organisations in four African countries were studied, these being South Africa, Kenya, Zimbabwe and Uganda. These four countries are well known as popular tourist destinations in Africa south of the Sahara and they have been chosen because they all have the safari type of tourism for which this region is so well known.

2. Knowledge transfer in e-commerce systems

According to Paprzycki et al (2002), knowledge, and in particular knowledge management is becoming more important for e-commerce systems for the following reasons:

- There is fierce competition in the e-commerce industry and anyone with a slight competitive advantage will potentially gain a large market share. As the competition increases in the travel and tourism sector, most organisations are now moving beyond transaction centric systems, where the main focus is to efficiently process transactions, to more customer centric systems, which carry out meaningful conversations with customers to address their concerns before efficiently processing their transactions (Accenture, 2002). If African organisations are to compete with the organisations of north America and western Europe, who have dominated the online travel industry, they need to invest more in knowledge acquisition. With the emergence of the global marketplace, an organisation’s capacity to create and sustain competitive advantage lies in what it knows not what it owns (Johannessen & Olsen, 2003).

- As the Internet and e-commerce targets a global market space and is not constrained by geographical barriers, it must deal with a very broad spectrum of knowledge. Tourist organisations need to accommodate the different needs and preferences of international customers through knowledge sharing.

- Internet customers are characterised by a different attitude to buying, with expectations that e-commerce sites will provide all the information they need. Today’s customer is more demanding than before so, to keep up with this ever increasing demand, organisations need to employ an effective eCRM which gathers the necessary information to adapt their products and services to meet the demand.

- A wide range of information is available on the Internet for those who know where to find it. For a tourist organisation to be able to provide up-to-date information, specific to a customer’s needs, it must be able to access this information and channel it to the customer. A customer who uses a wheelchair, for example, may need to know about access to a building, facilities on the ground floor and availability of an elevator. Providing information in a context relevant to the customer is a means of turning information into knowledge.

- The Internet enables the supply of extended information not directly linked with a product. In the tourism and travel industry this could involve providing information which a traveller may need to decide whether to embark on a particular trip. This includes information about immigration and customs procedures, health and safety issues and the latest weather forecast.

- E-commerce organisations can have many thousands of customers and data can be collected from each one. However, customers can usually be categorised into different types which often need to be treated differently. By collecting information from its customers the company can build its knowledge of the needs for different customer types which can enable it to personalise its website content even for new customers.

This management of knowledge through e-commerce is essential for African organisations to remain competitive as the global reach of the Internet means that tourist organisations based in Western Europe and the United States can attract tourists away from Africa and can even compete to handle the tourist trade within Africa itself.

3. Research background and justification

Knowledge, and in particular knowledge management, has received the attention of many academics and practitioners (du Plessis & Boon, 2004; Pyo, 2005; Wickramasinghe & Mills, 2002; Hall & Graham, 2004; Chua, 2004; Hustad, 2004; du Toit, 2003; Reid & Slazinski, 2003; Lueg, 2003; Biggam, 2003; Benetti et al, 2003, Scott, 2003; Johannessen & Olsen, 2003, Holsapple and Jones (2004)). Studies by Scott (2003), Bennett et al (2003), Wickramasinghe & Mills (2002), Johannessen & Olsen (2003), Holsapple & Jones (2004) and Biggam (2003) have recognised the importance of knowledge management in e-commerce in today’s global marketplace and how the two can be beneficially integrated. They have emphasised that knowledge management can help e-commerce organisations achieve a competitive advantage.
Knowledge management is a wide subject involving technical, social, organisational and environmental aspects. To keep the study within a manageable scope, therefore, this paper focuses on one aspect of knowledge management, that of knowledge sharing. Hustad (2004) and Reid and Slazinski (2003) carried out studies on knowledge transfer by focusing on how knowledge can be transferred between multinational organisations and project team members. This paper examines knowledge transfer between organisations and customers.

The proliferation of network access has led to the growth of virtual communities who are connected by computer networks. These are generally known as online communities. Lueg (2003) and Hall & Graham (2004) have looked at how people can be urged to collaborate in order to generate knowledge and to share this knowledge and information within their organisations. These two studies have mainly focused on social and cultural aspects of knowledge transfer and have ignored the role of information technology. To complement these other studies of social and cultural aspects, this study examines an important, technical medium for knowledge sharing, namely the website.

Pyo (2005) and Ruhanen and Cooper (2004) have carried out studies on how knowledge can be used to support the tourism industry. Although these studies have shown how applying a knowledge management framework can increase competitiveness in this sector, they have not tried to establish how the various tourist organisations can acquire the knowledge and how that knowledge can be disseminated. The authors’ study reported in this paper examines the facilities for knowledge sharing within the websites of the different organisations. Frechtling (2004) carried out a survey to assess the transfer of knowledge from 13 tourism, hospitality and related academic journals to managers, researchers and other practitioners in the US tourism and hospitality industries. However, the study reported in this paper concentrates specifically on e-commerce websites as the medium for knowledge transfer.

There have not been many studies carried out for e-commerce organisations based in Africa. The few studies carried out (du Plessis & Boon, 2004; du Toit, 2003) focus on the impact of knowledge management on customer relationship management and the business environment in general and how knowledge management can increase competitiveness in the manufacturing sector in South Africa. These empirical surveys did not look at other sectors of the economy and again did not seek to establish the methods of collecting and transmission of the knowledge. This survey described in this paper looks at the tourism sector of Kenya, Zimbabwe and Uganda as well as South Africa, examining the technological imperatives of knowledge transfer between tourist organisations from the four African countries and their customers, most of whom are international, and how this knowledge is acquired and disseminated.

4. Research methodology

4.1 Sampling

Empirical evidence acquired by this survey was obtained from the evaluation of a total of 554 websites of national airlines, national parks, government-run and private tourism promotion organisations, car rental companies, travel agencies and tour operators. With the size of the World Wide Web, it was decided to use two search engines with different searching methods to find the relevant web pages, Google and Excite. Search strings such as “Major Hotels in South Africa” and “Travel Agencies in Kenya” were used to find as many websites as possible. Google today is one of the most popular search engines with about 88 different language interfaces and has at least four billion indexed web pages. It treats natural language questions as lists of terms and retrieves documents similar to the original query. Excite uses the concept-based indexing which tries to determine the meaning of a search string using statistical analysis.

In this study the sample used was dictated by its availability to the researchers. The contact details of the organisations were obtained through intensive searches on the Internet and from personal contacts in the four African countries. Also brochures from travel and tourism exhibitions such as the World Travel Market and Business Travel were used to get the details of additional tourism organisations. Other details were obtained from websites of different organisational associations such as the Association of South Africa Travel Agents, and the Kenya Association of Tour Operators.

The limitation of this method is that it is difficult to determine the total population represented by the tourism organisations surveyed. However, each of the aforementioned categories of tourism organisations (national airlines, national parks, government-run and private tourism promotion organisations, car rental companies, travel agencies and tour operators) was well represented by obtaining as many companies as possible.

The websites were then grouped according to their level of development, that is, the number and type of e-commerce facilities present:
Level 1: These websites contain mainly information features, both product and non-product, providing sufficient information for the potential tourist to know about the organisation and its products and services, but little else.

Level 2: These websites provide the information of level 1 and also have facilities to carry out limited online transactions. The online facilities include making reservations, submitting enquiries and customer feedback.

Level 3: These websites provide fully-fledged e-commerce facilities. They have facilities to make reservations in real time and allow customers to pay online. These websites also have interactive facilities for web-based eCRM.

By grouping the websites into three different development levels, the researchers aimed to determine at which level knowledge transfer is successfully being achieved in the four African countries.

4.2 Knowledge transfer facilities

The process of knowledge transfer on websites can be conceptualised into the following steps: collection of knowledge, dissemination of the knowledge and application of knowledge. The facilities for knowledge transfer are thus grouped according to the three steps as follows:

4.2.1 Knowledge acquisition

The following allow knowledge acquisition through customer interaction as it is difficult to know customers preferences and needs if the interaction is limited.

- Customer profiling – Capturing the demographics of existing and potential customers enables e-commerce organisations to know individual customer interests and needs.
- Electronic guestbook – This is a simple form for customers to submit comments about products and services. Through this online form customers can report inefficiencies in service provision and monitor the progress of complaints. Customers can use this facility to narrate their experiences obtained during their travels.
- Customer surveys - These can be used to get feedback and other information from customers. Surveys can be used to track the trends and changes in patterns of customer behaviour and tastes. They can help organisations determine which new products to offer.
- Interactive chat - This enables tourist organisations and their customers to participate in a real-time conversation. This could be seen as the ideal replacement for the traditional interpersonal modes which have disappeared with the growth e-commerce.

4.2.2 Knowledge distribution

- Electronic newsletters - One of the functions of customer relationship management is to distribute information to its loyal customers and this can be achieved by publishing an electronic newsletter on the website. The newsletter allows website visitors to know about new products and services and any other information the organisation might deem useful.
- Bulletin boards – These are special areas on the Internet for people to post messages for anyone to read. They can be used by customers to share their travel experiences. The electronic guestbook can also serve this purpose if it is accessible to the public.

4.2.3 Knowledge application

Company knowledge can be used to provide features that tailor services according to the different customer needs.

- Recommendation engine - Recommendation engines are eCRM decision support applications that offer a new level of personalisation through customised travel recommendations. Basically this facility helps a customer make a decision which is the best fit for that individual person. The information this interactive tool uses to help make decisions is gathered at the knowledge acquisition stage and could include past purchases and customer records. The combination of in-depth customer profiling, the knowledge acquired and the rules embedded in this tool provides an accurate, interactive, and automated customer service, resulting in high quality customer education (Vacation Coach Inc, 2002).
- Loyalty systems – Customer profiling together with records of customer transactions can be used to reward customers in the form of cash discounts to repeat clients. It also enables the organisations to calculate the value of their loyal customers. In this case both the customer and the organisation benefit, thus creating a symbiotic relationship
- Customised content - This is personalised content which can be accessed by registered repeat clients. The content and services displayed on the websites is tailored to individuals based on knowledge about their preferences, needs and behaviour.
5. Research findings

5.1 Level 1 - Information websites

There were 161 organisations at this level, representing 29% of all the organisations surveyed. At this level, the website represents a facility for information to be transferred from the organisation to the customer. There is no facility for the customer to transfer any information or knowledge back to the organisation other than sending a message to a contact address given on the site. Even in the direction of organisation-to-customer the transfer is really only that of information rather than knowledge as there is no means to tailor the information to the customers own context.

5.2 Level 2 – Websites with limited interactive facilities

The closest facility to a knowledge transfer is the electronic newsletter available on a few sites (about one in every four). The more descriptive form of a newsletter does give some knowledge as the readers can pick up elements of context from the descriptions that they can then relate to themselves. The information available through the newsletters varied from information on new or planned products and services to information about major events taking place at the tourist destinations which might be of interest to potential tourists.

| Table 1: Analysis of knowledge transfer facilities on level 2 websites |
|---------------------------------------------------|----------------|----------------|----------------|----------------|
| Features                                         | National Organisations | Hotels and Lodges | Travel agencies and Tour operators | Car rental companies |
| Knowledge acquisition                             |                 |                 |                 |                 |
| Customer Profiling                                | -               | -               | -               | -               |
| Electronic Guestbook                              | 2 (50%)         | 25 (25%)        | 12 (6%)         | 7 (13%)         |
| Customer Surveys                                  | -               | 1 (1%)          | 2 (1%)          | -               |
| Interactive Chat                                  | -               | -               | -               | -               |
| Knowledge distribution                            |                 |                 |                 |                 |
| Electronic Newsletters                            | 4 (100%)        | 42 (42%)        | 49 (23%)        | 4 (8%)          |
| Bulletin Board                                    | -               | -               | -               | -               |
| Knowledge application                             |                 |                 |                 |                 |
| Recommendation Engine                             | 1 (25%)         | -               | 3 (1%)          | -               |
| Loyalty Programmes                                | -               | -               | -               | -               |
| Customised Content                                | -               | -               | -               | -               |

Sample size: South Africa - 226, Kenya - 89, Zimbabwe - 32, Uganda – 21

This level had the most organisations within it, 368 organisations represent two thirds of the total surveyed. The percentages in Table 1 are calculated as a percentage of the organisations in that category of tourist organisations. The survey showed that about one in every twelve of these organisations acquired knowledge through electronic guest books. Although there was some customer profiling, it is not included in Table 1 as the depth of the information entered by customers would be insufficient to study and analyse customer behaviour. About a quarter of the 368 organisations from this category used the electronic newsletter to disseminate information and knowledge to customers. Evidence from the results obtained from the survey shows that there is little application of knowledge obtained from the customer with only four organisations providing facilities to make recommendations to their customers.

5.3 Level 3 – Fully-fledged e-commerce websites

Of the organisations surveyed, only 25 had fully-fledged e-commerce websites (see Table 2), with none of these in Zimbabwe or Uganda. About two thirds of organisations from this category had at least one of the knowledge acquisition features of customer profiling, electronic guestbook and customer surveys. None of the organisations had facilities for interactive chat or links to bulletin boards. Similarly, nearly two thirds of the websites had the knowledge distribution feature of an electronic newsletter, but none had access to bulletin boards where customers find information about tourism-related topics. At least three websites from the hotels and lodges category used knowledge acquired through customer interaction for the benefit of the customer through recommendations and loyalty programmes. However, not one website from the travel and tour operators’ category had any of the knowledge application facilities.
Table 2: Analysis of knowledge transfer features of fully-fledged e-commerce website

<table>
<thead>
<tr>
<th>Features</th>
<th>Organisations</th>
<th>National Organisations</th>
<th>Hotels and Lodges</th>
<th>Travel agencies and Tour operators</th>
<th>Car rental companies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge acquisition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Profiling</td>
<td>2 (100%)</td>
<td>4 (36%)</td>
<td>-</td>
<td>4 (80%)</td>
<td></td>
</tr>
<tr>
<td>Electronic Guestbook</td>
<td>-</td>
<td>1 (9%)</td>
<td>2 (29%)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Customer Surveys</td>
<td>-</td>
<td>1 (9%)</td>
<td>2 (29%)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Interactive Chat</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Knowledge distribution</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic Newsletters</td>
<td>2 (100%)</td>
<td>8 (72%)</td>
<td>2 (29%)</td>
<td>2 (40%)</td>
<td></td>
</tr>
<tr>
<td>Bulletin Board</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Knowledge application</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommendation Engine</td>
<td>2 (100%)</td>
<td>6 (55%)</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Loyalty Programmes</td>
<td>1 (50%)</td>
<td>4 (36%)</td>
<td>-</td>
<td>2 (40%)</td>
<td></td>
</tr>
<tr>
<td>Customised Content</td>
<td>-</td>
<td>3 (27%)</td>
<td>-</td>
<td>1 (20%)</td>
<td></td>
</tr>
</tbody>
</table>

Sample size: South Africa - 23, Kenya - 2, Zimbabwe - 0, Uganda – 0

6. Conclusion and recommendations

The Internet today enables new data collection strategies which can generate volumes of useful data, but only a few organisations from the information-intensive tourism industry in the four African countries are taking full advantage. The analysis of the results from the survey clearly shows that there is little knowledge acquisition taking place on the websites of the tourism organisations surveyed. Managing customer relationships within social interactions for knowledge creation is increasingly becoming a critical area within e-commerce (Romano & Fjermestad, 2003). To enable eCRM to take place some form of interactivity is needed to obtain information about the customer. The organisations whose websites have some interactivity are the ones who provide facilities for web-based knowledge acquisition. With no facilities for customer interaction on information websites no knowledge acquisition can take place on these websites. Knowledge transfer requires a high level of interactivity to allow users to place the information provided into their own context.

Knowledge generated is useful only when it is disseminated to people who can use it. Although there has been little knowledge acquisition taking place, there were more websites with facilities that could be used for knowledge and information distribution. A total of 127 websites, including some level 1 sites, had at least the electronic newsletter feature to distribute knowledge and information, though this is a limited feature for knowledge transfer as it requires the customers to extract the context information themselves. The reason the electronic newsletter seems to be the most common method of distribution is probably that it needs very little programming effort to set up on a website. However, this simplicity also means that there are no barriers to additional organisations providing this feature, so they should be encouraged to do so.

The knowledge acquired should be applied on request whenever the customer accesses the e-commerce system. The number of websites with systems or tools that use acquired knowledge increases with the level of interactivity within websites. There were no level 1 websites with facilities which applied knowledge, and only four out of 368 level 2 websites. Only in the 25 fully-fledged e-commerce websites was there any significant number using the acquired knowledge to make recommendations to customers or to provide customer loyalty schemes, with more than three quarters of websites in that category doing so.

For an e-commerce system to succeed within the emerging global marketplace it must be able to properly transfer knowledge, whether it is generated within the system or derived from external environments. The increased competition within the tourism industry, the exponential growth of the Internet and the size and distribution of target markets are some of the reasons why knowledge transfer is so important in e-commerce systems today. The following is therefore recommended to organisations:

- Incorporate interactive services which can be used for knowledge acquisition as knowledge transfer generally requires extensive personal contact.
- Adopt more knowledge and information distribution methods as tourism is one of the most information-intensive sectors.
• Apply knowledge acquired from customers or other sources to return value to the customer as well as keeping them interested. Customers are usually prepared to part with knowledge or information if they receive something in exchange.

Further research needs to be carried out in order to find out if the tourism organisations are aware of the potential of knowledge within e-commerce and how it can be generated, stored, distributed and applied to serve their customers and increase business. It will also be useful to determine which facilities are most important for the different types of tourist organisation. For example, information on weather conditions may be more important for a national park than it is for a car hire company.

This study has revealed that although the opportunities of knowledge transfer have increased with the growth of the Internet, most of the organisations in the tourism industry of sub-Saharan Africa are not taking full advantage of its potential. The analysis of the results has also shown that only limited knowledge transfer can take place without customer interaction. As tourism is regarded as the pinnacle of the economies in sub-Saharan Africa and as there is stiff competition from Western Europe and North America, it is recommended that the organisations from Africa follow the suggestions made in this paper to remain competitive.

References


Kohavi, R. (2001) “Mining E-Commerce Data: The Good, the Bad and the Ugly”, Proceedings of the 7th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, San Francisco, USA, pp. 8-13


