

Analysing Traffic Rankings of Websites of Tourist Organisations in Four African Countries

Tonderai Maswera

Computer Science Department, Loughborough University, t.d.maswera@lboro.ac.uk

Ray Dawson

Computer Science Department, Loughborough University, r.j.dawson@lboro.ac.uk

ABSTRACT

As part of their Customer Relationship Management activities, tourist organisations should try to find out whether their websites are not only generating the right amount of traffic (Internet users) but also find out if they are attracting the right users and that the users are getting what they want or prefer. This can be done by analysing website traffic. An analysis of the web traffic information of websites of tourist organisations from South Africa, Kenya, Zimbabwe and Uganda was carried out using an Internet tool Alexa. The main purpose of this survey was to find out how websites of tourist organisations from these four countries are ranked according to the amount of traffic out of a possible 36million websites on the Internet. The tool Alexa automatically generates this information as the website is downloaded. The findings show that most of the websites are lowly ranked and they could not attract enough traffic to have information on specific pages generated. It is recommended that tourist organisations will benefit from performing their own analysis of their website traffic and by making it easier for users to find their websites so that web traffic is increased.

INTRODUCTION

As tourist organisations in Africa embrace e-commerce, websites become a very important extension of an organisation. Websites now act as an interface between the tourist organisations and the users, most of whom are remotely located. Therefore after a website has been set up the organisations should be interested in knowing whether they are realising the objectives for which they were set up for. One indication of this can be found by analysing traffic to a website.

Studies by Vellamsetty et al (2003), Kant and Venkatachalam (2002) and Cherkasova et al (2003) focused website traffic in relation to network performance and design. Abrahamson and Ahlgren (2000), Karasaridis and Hatzinkos (2001), Thompson et al (1997) used models to measure Internet traffic and website performance while Kobayashi and Takeda (2000) used traffic data from different sources to project the number of Internet users, hosts and websites. The Internet Profiles Corporation (2002) devised standards for auditing website traffic. According to Internet Profiles Corporation (2002), a website audit is a validation of traffic by an independent organisation by analysing the web log files. Thumlert (2001) defined e-metrics as the scientific examination of a website's traffic data and broke it down into the following phases:

Data collection: As the websites are downloaded and visitors navigate the website the essential data will be recorded in the web log files.

Analysing data: The data from the web log files are examined with the aim of trying to find out if meaningful trends can be established from which conclusions can be drawn.

The main aims of this survey are to find out:

- how websites of tourist organisations are ranked by traffic
- the number of pages visited per website
- which pages Internet users visit within the websites

Information generated by Alexa does not only help organisations know if they are attracting enough traffic for online transactions but also justify the existence of a website.

WEBSITE TRAFFIC ANALYSIS

When analysing the website traffic, the following were some of the components which were examined:

- How many people visit the site? (Chaney Systems, 2000; Inan, 2001; Sceats, 2003)
The number of people visiting the website in a given period of time will give organisations an idea of the amount of potential business that can be generated through them. It will be important for the organisations to try and establish the number of unique visitors, as a figure, which includes repeated visitors, could be misleading.
- Where are the visitors from? (Sceats, 2003)
Most of the tourists to Africa are international, with the bulk coming from Western Europe and North America. To know where most of their tourists are coming from would help in trying to determine their wants, needs and preferences. For example, this information could establish the main language in which to display the website content.
- Do you know which pages they use? (Chaney Systems Inc., 2000; NZ Internet Consultants, 2003; Sceats, 2003)
Knowing the answer to this would help organisations decide which pages need to be redesigned and to know whether the visitors are accessing the most important pages. On an e-commerce site most visitors are expected to visit pages with transactional facilities while on information centric sites more will be expected to visit pages with product information.
- How are visitors finding the site on the Internet? (Sceats, 2003)
As part of the eCRM activities web designers should find out how the visitors are locating the websites on the Internet. Today Internet users can find out about a website through advertisements (newspaper, pop-ups), articles (newspaper, journal, magazine), links on other websites and recommendations from a friend. This information could help in devising other means or improve some of the existing ways of publicising the website.
- How do visitors navigate within the website? (Inan, 2001; Sceats, 2003)
Knowing how visitors navigate or interact with your website can help organisations improve the navigation and contain unwanted traffic leakage. There are visitors who are elderly or with different forms of disability who also need to access websites so there should be facilities that could make this much easier for them.

- f) What search phrases are they using to find the site? (Sceats, 2003) This information would help organisations find out what motivates the users' visits to their websites. With this in mind tourist organisations could either improve existing products and packages or introduce new ones.
- g) Conversion rate
The conversion rate is the number of visitors who complete a desired action. McElwain (2001) suggested that for a website to have a good conversion rate there has to be a lot of unique visitors to the website. In addition, knowing where the conversions are coming from would help find out what is working and what is not on the e-commerce website. Information on conversions could also be used to measure the effectiveness of an e-commerce website as the proportion of potential business generated can be computed from this information.

Several ways have been suggested on how organisation can improve traffic to their websites some of which are the following:

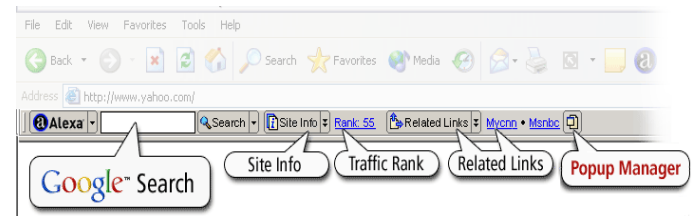
1. More subscribers
One of the ways by which to get repeat visitors is to get them to register on the website and then update them on new products or new information on the site. (Zulkifly, 2002)
2. Major search engines
Organisations should submit their website to major search engines which most people use. Some of the major search engines that will produce 95% or more of the search engine traffic are Google, Alta Vista, Excite, Lycos, Yahoo, HotBot (Dean, 2002)
3. Effective Meta tags
Meta tags are the most basic information for manipulating the search engines. Some search engines will use the meta tags to index web content and give this more weight than the actual content of the page (Aesop Marketing, 1999). Organisations should try to use all possible keywords that are relevant to the website, and with which users believe the site or page should be found.
4. Title Tag
The title web designers give to an HTML page may be used by a search engine as a title for the page in search results as well. It is recommended that a short but very descriptive title be used (Smits, 2003)
5. Reciprocal Links
Having the Uniform Resource Locator (URL) of the website in many places as possible where potential visitors are likely to be would help increase traffic to a website. It would also help if the website could be linked from a popular website whose theme is similar to the organisation's (Norfolk Graphics, 2003)
6. Updating regularly
According to Norfolk Graphics (2003), updating a website regularly would help improve its rankings within a search engine. This would be effective if the organisations are submitting their updated websites to the search engines frequently as well.
7. Free Downloads
Another way of wooing traffic to a website is by offering free downloads such as games, calculators to visitors. As Internet users search for these downloads they would eventually end up at the organisation's website (Norfolk Graphics, 2003)

METHODOLOGY

Search strings were used to find as many websites as is possible of the following tourist organisations: national airlines, hotels and lodges, national parks, car rental companies, travel agencies, tour operators and the tourism promotion organisations, both government run and private, using different search engines on the Loughborough University network. In this survey the search engines which were used were: Google and Excite. To get the most out of a search the researcher used search strings as "Major Hotels in South Africa". The websites were then downloaded and then ranked according to traffic using an Internet tool, *Alexa*.

Alexa is an Internet software tool used to generate traffic rankings of websites by recording and analysing the web usage of Alexa toolbar

Figure 1 Alexa Toolbar



users. On being downloaded the Alexa toolbar is automatically plugged onto the web browser. The traffic information of a website is then generated and displayed automatically as shown in Figure 1.

Alexa produces the following website information:

Traffic Rank - This represents a ranking of a site compared with all sites monitored by Alexa based on the number of visitors, which have occurred for the past three months. The site with the most visitors has a ranking of 1 and so on. Traffic is calculated for sites, which are defined at domain level only.

Website reach - This measures the number of users and is the percentage of all Internet users who visit a given site.

Page Views - This measures the number of pages viewed by Alexa Toolbar users. If a user views the same page several times it is only counted once.

Pages Visited - Alexa can also identify which specific pages most Internet users visit on a particular site.

FINDINGS

National Airlines, National Parks and Tourism-Promotion Organisations

Table 1 shows the web traffic information of websites of national airlines, national parks and government-run tourism-promotion organisations. The Uganda national airlines and the Zimbabwe national parks' websites could not be found. The highest ranked national airline website was that of South Africa standing at 19,169 which does not attract as much traffic as the more illustrious ones such as the British Airways ranked 1,196 or American Airlines (901) but, on the other hand, it certainly does better than the Indian Airlines (35,488). The website for the Uganda national parks website was found but did not attract enough website traffic for it to be ranked by the Internet tool. Alexa requires a minimum level of traffic for a website in order to generate its site ranking and other statistics. From this group of websites Alexa was able to generate the statistics for the pages most visited for the South African airline only. Only two pages from the website are frequently visited and they are both content pages.

Hotels and Lodges

A total of 86 websites of hotel and lodges from the four countries were accessed with South Africa providing the majority (45) (see Table 2). South Africa had 14(16%) websites which had insufficient traffic for information to be generated, Kenya had 7(0.8%) such websites, Zimba-

Table 1 Analysis of websites of National Airlines, National Parks and Tourism Promotion Organisations

Feature	Rank	Reach per million users		Page Views		Number of other sites linked to it
		1 week average	3 months average	1 week average	3 months average	
Organisation						
National Airlines						
South Africa	19,169	42	40	9.5	9.4	1,320
Kenya	213,380	6	3.75	6.7	5.8	287
Zimbabwe	888,380	1.5	0.6	3.0	4.5	284
Uganda	-	-	-	-	-	-
National Parks						
South Africa	163,438	3	4.6	1.5	7.9	408
Kenya	1,216,193	-	0.35	-	5.0	128
Zimbabwe	-	-	-	-	-	-
Uganda	-	-	-	-	-	36
Tourism Promotion Organisations						
South Africa	2,876,213	-	0.1	-	2.0	122
Kenya	307,170	3	2.05	7.0	8.0	157
Zimbabwe	1,317,124	-	0.3	-	4.6	24
Uganda	474,151	1	1.2	6.0	6.4	308

Table 2 Web Traffic Information of Websites of Hotels and Lodges

Feature	Number of websites	Average rank	Average reach per million users		Average Page views		Average Links of other websites
			1 week average	3 months average	1 week average	3 months average	
Country							
South Africa	31	1680060	153.11	47.33	5.13	4.81	204.11
Kenya	18	2047093	309.5	77.55	5.18	5.78	21.30
Zimbabwe	8	1683855	193.89	6.6	6.6		32
Uganda	2	1833976	560	284.28	5.9	5.1	594.6

Sample size: South Africa -45, Kenya -27, Zimbabwe -8, Uganda -6.

Table 3 Web Traffic Information of Websites of Travel Agencies and Tour Operators

Feature	Number of websites	Average rank	Average reach per million users		Average Page views		Average Links of other websites
			1 week average	3 months average	1 week average	3 months average	
Country							
South Africa	33	1845333	5.65	1.88	3.47	4.14	29.68
Kenya	28	2351493	34.9	6.8	4.58	5.8	21.93
Zimbabwe	0	-	-	-	-	-	84.25
Uganda	2	2120729	1	1.2	1	3.9	10.33

Sample size: South Africa -60, Kenya -48, Zimbabwe -36, Uganda -20.

bwe, nil and Uganda, 2 (0.02%). Uganda had the highest average reach, page view and links because of the 6 websites that were found one was that of an international hotel whose traffic ranking was 1407 and it had 2,936 links from other websites to it. Websites of 2 Uganda hotels and another 2 from Kenya were hosted by other organisations and, since Alexa computes for websites at domain level only, the information provided was not for the hotel website. Websites of three international hotels, two of which are found in all the four African countries, had information generated on which specific pages most users visit. Most of the users visit the pages, which contain product information, promotional activities and those with access to the e-mail.

Travel Agencies and Tour Operators

About 164 websites of travel agencies and tour operators were accessed and measured for web traffic information (see Table 3). This is where some of the lowest ranked websites by traffic are found. This is because many of them are virtually unknown family-run business entities. A total of 71(43%) websites could not be ranked by traffic because of insufficient traffic, with South Africa providing 27(16%) websites, Kenya 18(11%), Zimbabwe 21(13%) and Uganda 5(0.3%). Zimbabwe had 15 out of its 36 websites being hosted by other organisations, Uganda had 13 out of 20. Not a single website for a travel agency or tour operator from Zimbabwe had sufficient web traffic for information to be generated by the Alexa Internet tool.

Car Rental Companies

Car rental companies provided 9 websites and all from the same country, South Africa. Websites of car rental companies from the other three countries could not be found. The highest rank from this group was 332,246 with a three months reach average of 2.05 per million users and the website belonged to an international company. The lowest rank was 4,354,043 with a three months reach average of about 0.05 per million users and had only 10 other websites linked to it. Alexa could only provide information on specific pages visited of only 3 websites. The information generated showed that most people visit the content pages although on one 10% of the users visit the page with online booking

CONCLUSION

The websites of airlines seem to be attracting more traffic than any other group of tourist organisations that were examined, with the South African Airlines providing the highest ranked website by traffic. The hotels and lodges are also doing well thanks to the international hotels whose websites are in the top 2,000. Although they provided the bulk

of the websites, travel agencies and tour operators seem to be attracting the least amount of traffic. In this group a total of 99 websites could not have its traffic information generated either because they could not attract sufficient traffic or their website is being hosted by other organisations. The car rental companies provided the least number of websites mainly because websites of car rental from the other three countries could not be found.

It can be concluded from the findings of this survey that most of the websites with the least number of links of other websites to it had a lower ranking. The South African airline had about 1,326 other sites that linked to it and a rank of 19,169, while the Zimbabwe national airline had only 284 sites and a rank of 888,380. In the travel agencies and tour operators group where most have a ranking over 1 million had the number of other sites that link to them starting from zero to a couple of hundreds compared to an international travel agency which specialises in student and youth travel, is ranked 30,418 and has 602 other sites linked to it.

The Internet tool Alexa could generate information on the specific pages visited on most websites, except for a few, most of which were for international organisations. Although the number of pages visited the overall site were satisfactory, as information does not relate to specific pages it is not as helpful as it would have been if the traffic for individual pages were known.

From these findings it is concluded that tourist organisations should now make an effort to have websites hosted on their own servers in order that they can carry out their own analysis to improve the service they provide through their websites. The findings show that many of the organisations would benefit by making it easier for the users to find their websites. In particular, having other sites linked to the website will increase the chances of their website getting more visitors.

A limitation of the Alexa analysis tool is that it does not give the total number of website users as it analyses traffic for Alexa toolbar users only. While the number of Alexa users is clearly very large there is no way of being sure that the users are a representative sample of all users who access the sites of interest. For example, it may be that a higher proportion of users are from America and Europe so the tool may not be accurately representing the local traffic. However, as the majority of tourists come from America and Europe this is unlikely to be a significant problem.

This research has discovered that the potential of the Internet is not being fully exploited by many of the tourist organisations considered, but as these findings have shown, analysis of traffic using a tool such as Alexa can give these tourist organisations indications of how to improve the benefits to be gained from their web sites. Further research needs to be carried out to try and find out where the visitors are from, which pages specific pages they visit and also use tools which will compute the number of visitors regardless of whether they have a similar tool by merely analysing the web log files. The authors suggest that if these suggestions are followed the tourist organisations will begin to unlock the full potential of the Internet.

REFERENCES

1. Abrahamson and Ahlgren(2000), Using Empirical distributions to characterise web client traffic and to generate synthetic traffic, *IEEE Global Telecommunications Conference, No 1*, pp 428-433
2. Aesop Marketing (1999), Here's another Market My Dot Com recommended Website Marketing Tool!, <http://www.marketmy.com/internet-marketing/>
3. Chaney Systems (2000), Analysing Web Traffic, <http://www.chaney.net>
4. Cherkasova et al (2003), Measuring and characterising end-to-end Internet service performance, *ACM Transactions on Internet Technology, Volume 3, Issue 4: pp 347-391*
5. Dean (2002), 5 Tips For Bringing Traffic To Your Site For Free Using the Major Search Engines, <http://webmastery.com/members/article8-deanSE.htm>
6. Inan (2001), Website Traffic Analysis Untangled: What to Look for in Website Traffic Analysis, <http://www.ebusinessresourcecenter.com/articles?A009p.asp>

7. **Internet Profiles Corporation** (2002), A Standard for Auditing Web Site Traffic, http://www.ipro.com/downloads/ipro/ipro_audit_standard.pdf
8. **Kant and Venkatachalam** (2002), Transactional characterisation of front-end e-commerce traffic, *IEEE Global Telecommunications Conference*, No 1:pp 2535-2539
9. **Karasaridis and Hatzinakos** (2000), Network heavy traffic modelling using \pm -stable self similar processes, *IEEE Transactions on Communication*, No 7:pp 1203-1214
10. **Kobayashi and Takeda** (2000), Information retrieval on the web, *ACM Computing Surveys*, Volume 32, Issue 2:pp 144-173
11. **McElwain** (2001), A Good Conversion Ratio Takes a Lot of Visitors! <http://www.sitepoint.com/print/421>
12. **Norfolk Graphics** (2003), How do I increase my website traffic? http://norfolkgraphics.com/website_traffic.php3
13. **NZ Internet Consultants** (2003), Website Traffic Analysis Service – WebMetrics, http://www.nz-internet.com/Site_Traffic_Analysis.html
14. **Sceats** (2003), Web Site Traffic Analysis, <http://www.viz.co.nz/traffic-monitoring.htm>
15. **Smits** (2003), Web Promotion – Increase Website Traffic, http://www.mpsmits.com/highlights/web_promotion.shtml
16. **Thompson et al** (1997), Wide-area internet traffic patterns and characteristics, *IEEE Network*, No 6:pp 10-23
17. **Thumlert** (2001), E-Metrics: Understand Your Website's Traffic Data, <http://www.sitepoint.com/print/354>
18. **Vellamsetty et al** (2003), Characterisation of E-Commerce Traffic, *Electronic Commerce Research*, 3: pp 167-192
19. **Zulkifly** (2002), 4 ways to Increase Website Traffic, <http://www.theinternetprofit.com/articles/web-business-promotion/archive1/article0036.html>

0 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/proceeding-paper/analysing-traffic-rankings-websites-tourist/32388

Related Content

A Personalized Course Resource Recommendation Method Based on Deep Learning in an Online Multi-Modal Multimedia Education Cloud Platform

Ruiping Zhang (2023). *International Journal of Information Technologies and Systems Approach* (pp. 1-14). www.irma-international.org/article/a-personalized-course-resource-recommendation-method-based-on-deep-learning-in-an-online-multi-modal-multimedia-education-cloud-platform/319344

A Proposed Novel Description Language in Digital System Modeling

Péter Horváth, Gábor Hosszúand Ferenc Kovács (2015). *Encyclopedia of Information Science and Technology, Third Edition* (pp. 6966-6980). www.irma-international.org/chapter/a-proposed-novel-description-language-in-digital-system-modeling/112395

The Single Patent for Portuguese or Spanish Language Countries

Sofia Vairinho, Tara Branstad, Joao Guerreiro, Francisco J. Leon Sanzand Sonia R. Sanchez (2015). *Encyclopedia of Information Science and Technology, Third Edition* (pp. 3265-3277). www.irma-international.org/chapter/the-single-patent-for-portuguese-or-spanish-language-countries/112757

Dynamic Interaction and Visualization Design of Database Information Based on Artificial Intelligence

Ying Fan (2023). *International Journal of Information Technologies and Systems Approach* (pp. 1-13). www.irma-international.org/article/dynamic-interaction-and-visualization-design-of-database-information-based-on-artificial-intelligence/324749

Advances in Audio Restoration

Don Maueand Joseph C. Kush (2015). *Encyclopedia of Information Science and Technology, Third Edition* (pp. 6064-6079). www.irma-international.org/chapter/advances-audio-restoration/113063