DEVELOPMENT OF A SEARCH ENGINE MARKETING MODEL USING THE APPLICATION OF A DUAL STRATEGY

by

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DECLARATION

I, Wouter Thomas Kritzinger, declares that the contents of this dissertation/thesis represent my own unaided work, and that the dissertation/thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology. An exception to this statement is where the supervisor co-authored the three articles in this thesis. In all three cases the conceptualization, actual research, testing, data collection and final write-up was my own work.

Signed: Student

30 July 2017

Date

ABSTRACT

DEVELOPMENT OF A SEARCH ENGINE MARKETING MODEL USING THE APPLICATION OF A DUAL STRATEGY

Background:

Any e-commerce venture using a website as main shop-front should invest in marketing their website. Previous empirical evidence shows that most Search Engine Marketing (SEM) spending (approximately 82%) is allocated to Pay Per Click (PPC) campaigns while only 12% was spent on Search Engine Optimisation (SEO). The remaining 6% of the total spending was allocated to other SEM strategies.

No empirical work was found on how marketing expenses compare when used solely for either the one or the other of the two main types of SEM. In this study, a model will be designed to guide the development of a dual SEM strategy.

Objectives:

This research set out to determine how the results of the implementation of a PPC campaign compared to those of a SEO campaign, given the same websites and environments. At the same time, the expenses incurred through both these marketing methods were recorded and compared.

Method:

Article one was based on an empirical field experimental approach. The authors considered the implementation of both SEO and PPC, and compared the results. Data was gathered from Google search results after performing both fat head and long tail key-phrase searches based in various categories.

The websites that were listed in the top 10 of the sponsored section of the search results were recorded. These websites were then checked to see if they also had an SEO ranking within the top 100 for both the fat head and long tail key-phrases.

The author then researched and produced **article two** where the active website of an existing, successful e-commerce concern was used as platform. The company has been using PPC only for a period, while traffic was monitored. This system was de-commissioned at a given point, and SEO was implemented at the same time. Again, both traffic and expenses were monitored.

Finally, the author proceeded with **article three** where various successful e-commerce websites, utilising both SEO and PPC, were evaluated on their Cost Per Acquisition (CPA). The CPA for the e-commerce websites was calculated over a set period. Also, the cost over that period for both SEO and PPC was divided by the number of acquisitions achieved by each, and compared.

Results:

It was found in **article one** that website owners seldom invest in SEO as part of a SEM campaign. This seemed to confirm some of the findings of other authors. Only SEO and PPC were evaluated, as they are the most used SEM techniques. Possible future research could include investigating other search engines' PPC systems - Bing and Yahoo!, for example.

Article two's results indicate that the PPC system did produce favourable results, but on the condition that a monthly fee must be set aside to guarantee consistent traffic. The implementation of SEO required a relatively large investment at the outset, but it was once-off.

After a decrease in traffic due to crawler visitation delays, the website traffic bypassed the average figure achieved during the PPC period after a little over three months, while the expenditure crossed over after just over six months.

It was found in **article three** that the cost per acquisition (CPA) for SEO, for each of the e-commerce websites, was significantly lower than that of the CPA for the PPC campaigns.

Conclusion:

While considering the specific parameters of this study, an investment in SEO rather than a PPC campaign appears to produce better results at a lower cost, after a given period. This research has important implications for SEO and PPC practitioners, and for website owners. It should influence the way budgets for SEM are applied.

Finally, it could be used by marketing managers in better utilising their limited SEM budgets. No evidence could be found that this kind of empirical research has been done before, hence the results are considered to be unique and contributing in a major way to the body of knowledge.

Model:

As a conclusion, a dual strategy model was proposed. This model should be used in designing a cost-effective SEM strategy, tailored to a specific business. It involves choosing between one or both of SEO and PPC as marketing platforms. The results of the three research articles have been combined and articulated to design this model, which should allow any digital marketer to plan a marketing strategy in a way that will, for a specific situation, reduce costs and increase yield.

ACKNOWLEDGEMENTS

My lovely wife, Eleanor, I thank you for your boundless patience and love, unwavering commitment and dedicated support during the long hours, days and years of study and research.

To my parents, Wouter and Marina Kritzinger for their constant love, support and financial assistance.

A special mention needs to go to my family and friends for their understanding and support during the time of hard work, and sacrifices that were required to complete this research project.

My mentor and supervisor, Prof. Melius Weideman - I cannot convey enough the appreciation I have for all the guidance, support and dedication you've provided in aiding me to complete this research project.

BIOGRAPHICAL SKETCH

Wouter Thomas Kritzinger holds a Master's degree in Business Information Systems from the Cape Peninsula University of Technology (CPUT) in Cape Town. The dissertation focusses on the role web page keywords play in website visibility. Passed with distinction, the dissertation was entitled 'The effect web page body keyword location has on ranking in search engine results: an empirical study'.

He is currently employed as a Senior SEO Strategist at Takealot.com, one of the most successful South African e-commerce retail stores. He is involved in a range of responsibilities which enables him to analyse a situation quickly and take steps to rectify omissions and/or website coding errors, interpret analytical data, convert user behaviour to management reports, and conduct SEO site audits to name but a few. He has also learnt to be sensitive to operational needs, while considering the company's goals, strengths and limitations. He has an in-depth understanding of the principles of SEO, and have solved complex problems using this knowledge.

Before being employed by Takealot.com he worked at the CPUT as Research Assistant for Prof Melius Weideman; one of only a handful of individuals in the world who holds a Professorship in the field of SEO. For eight years, he researched various aspects of SEM, more specifically SEO under Prof Melius Weideman's supervision.

PREFACE

There are vast differences between SEO and PPC. SEO is driven from an algorithmic perspective, which attempts to interpret website contents and link it to search queries. Although search engines have come a long way, the fact remains that the search engine algorithms depend on several factors, including what has been stipulated on the website as well as the links from 3rd party websites which acts as votes in favour for the target website.

PPC, on the other hand, is a model of Internet marketing in which the advertiser pays a fee each time one of their advertisements is clicked. Essentially, it's a way of buying visits to your website, rather than attempting to earn those visits through SEO. PPC is also currently one of the most popular online marketing practices and appears to be remarkably successful, considering the revenue it produces for search engines.

One of the most prominent differences between SEO and PPC is that unlike PPC, SEO is very much a long-term strategy. For PPC, as soon as the bidder start bidding on his/her targeted keywords, he/she will see almost immediate traffic to their website. During the early days of PPC, many users have complained that unlike SEO results (organic results), PPC results were sometimes irrelevant.

PPC results will be displayed because the bidder had the highest bid for a given keyword/key-phrase. This was maybe true in the past, however, PPC have come a long way in becoming more relevant. Currently the quality of the landing page is coupled to the bid price to determine PPC ranking, yielding more relevant PPC results as compared to the previous mode of operation.

SEO requires a lot of technical knowledge to implement correctly and thus not many users can do SEO successfully. It has become a very specialised field of online marketing. PPC though, also requires knowledge, understanding and experience, but a simple PPC campaign can be implemented by almost anyone. Though, whether it is successful depends on the bid price, the advertisement and the quality of the landing page.

This thesis explores the differences between these two online marketing models, investigates how it is currently implemented by digital marketers, and determines the value versus investment of each.

Glossary

An alphabetical list of terms is given in the glossary, with definitions used throughout the thesis.

Chapter 1: Background and research problem

A brief overview is provided followed by a statement of the research problem. This background overview to the research problem concludes with the research design, questions, predicted results and the research limitations. All tables and figures listed in Chapter 1 form part of the sequential thesis list of tables and figures. All references made in Chapter 1 form part of the thesis reference list.

Chapter 2: Literature review and analysis

The literature review provides an overview of different marketing viewpoints, including website marketing, with a holistic overview of PPC and SEO. The contradictions are

briefly discussed, preparing the foundation for the three journal articles to follow in Chapter 3, 4 and 5. All tables and figures given in Chapter 2 form part of the sequential thesis list of tables and figures. All references made in Chapter 2 form part of the thesis reference list.

Chapter 3: Journal Article One - Search engine optimisation and pay per click marketing strategies.

This journal article was published in the Journal of Organisational Computing and Electronic Commerce (JOCEC), but has been formatted to comply with the stylistic requirements of the thesis - a snapshot of the actual publication is available in Appendix A. JOCEC is an international ISI listed journal.

In this study, the relationship between SEO and PPC respectively is investigated and reported on.

Chapter 4: Journal Article Two - Comparative case study on website traffic generated by search engine optimisation and a pay per click campaign, versus marketing expenditure.

This journal article was published in the South African Journal of Information Management, but has been formatted to comply with the stylistic requirements of the thesis - a snapshot of actual publication is available in Appendix B.

This research set out to determine how the results of the implementation of a PPC campaign compared to those of a SEO campaign, given the same website and environment. At the same time, the expenses incurred on both these marketing methods were recorded and compared.

The full-text of all three articles in its journal-specified layout can be found on: http://web-visibility.co.za/website-visibility-digital-library-seo/

Chapter 5: Journal Article Three - Parallel search engine optimisation and pay-per-click campaigns: a comparison of cost per acquisition

This journal article has been submitted to and published in the South African Journal of Information Management, but has been formatted to comply with the stylistic requirements of the thesis. The aim of this study was to determine the best way to plan the spending of an advertising budget.

The objective was to measure and compare the CPA of SEO versus PPC, under comparable circumstances, which would give an indication of the most effective marketing spending pattern.

These are critical issues, especially when companies are spending large amounts of money monthly to ensure the best possible exposure of their marketing efforts through websites, and even through social media platforms. All tables, figures and references related to this journal article were specified within Chapter 5 only.

Chapter 6, Discussion and conclusion

In this chapter, a summary of the literature review is followed by a breakdown of each journal article in terms of literature review, methodology results and conclusion. All tables and figures illustrated in Chapter 6 form part of the sequential thesis list of tables and figures. All references made in Chapter 6 form part of the thesis reference list.

References

The list of thesis references is applicable to Chapter 1, Chapter 2 and Chapter 6 only, as each journal article (Chapter 3, Chapter 4 and Chapter 5) has its own list of references within the respective chapters.

Appendices

Supporting documents have been provided in the Appendices.

Typographical conventions

Italics, bold and quotations have been used interchangeably throughout the entire thesis to indicate *emphasis*.

The terms *variables*, *elements* and *attributes* are used interchangeably throughout the thesis as all three terms refer to components of the appropriate conceptual category.

The respective journals' specifications regarding writing style, referencing and layout were implemented in Chapter 3 (journal Article One), Chapter 4 (journal Article Two) and Chapter 5 (journal Article Three).

The author has used 'he', 'him', and 'his' in the interests of stylistic conciseness, rather than the more cumbersome 'he/she', etc.

RESEARCH OUTPUTS

The author has produced the following research outputs during this research project.

Output Type	Authors	Title	Institution / Event	Status
Academic, Peer Reviewed Journal Article	Kritzinger, WT & Weideman, M.	Parallel search engine optimisation and pay-per-click campaigns: A comparison of cost per acquisition.	South African Journal of Information Management	Published July 2017, 19(1). http://www.sajim.co.za
Academic, Peer Reviewed Journal Article	Kritzinger, WT & Weideman, M.	Comparative case study on website traffic generated by search engine optimisation and pay-per-click campaign, versus marketing expenditure.	South African Journal of Information Management	Published September 2015, 17(1). http://www.sajim.co.za
Academic, Peer Reviewed Journal Article	Kritzinger, WT & Weideman, M.	Search engine optimisation and pay per click marketing strategies.	Journal of Organizational Computing and Electronic Commerce.	Published 2013. 23(3), pp 273 - 286.
Academic, Peer Reviewed Journal Article	Kritzinger, WT & Weideman, M.	Keyword placing in web page body text to increase visibility to search engines.	South African Journal of Information Management	Published April 2007. 9(1). http://www.sajim.co.za.
Academic, Peer Reviewed Journal Article	Lubbe, S, De Kock, D & Kritzinger, WT.	Software Piracy: Some aspects for SA managers to keep in mind.	South African Journal of Economic and Management Science.	Published 2003. 6(4). pp 785 - 801.
Academic, Peer Reviewed Conference Paper: International	Weideman, M, & Kritzinger, WT.	Search engine information retrieval: empirical research on the usage of meta-tags to enhance website visibility and ranking of e-commerce websites.	Proceedings of The 7th World Conference on Systemics, Cybernetics and Informatics.	Published 2003. Orlando, Florida, USA, Volume VI, p231 - 236. July 28 - 30.
Academic, Peer Reviewed Conference Paper: National	Kritzinger, WT & Weideman, M.	Top ranking commercial websites - search engine optimisation versus pay per click.	The 11th annual Conference on WWW Applications.	Published 2009. Port Elizabeth, South Africa. September 02-04.

Academic, Peer Reviewed Conference Paper: National	Kritzinger, WT & Weideman, M.	Finding the synergy: search engine optimisation versus website usability.	The 10th annual Conference on WWW Applications.	Published 2008. Cape Town, South Africa. September 03-05.
Academic, Peer Reviewed Conference Paper: National	Kritzinger, WT, Weideman, M & Visser, EB.	Search engine ranking profile maintenance - a case study.	The 9th annual Conference on WWW Applications.	Published 2007. Johannesburg, South Africa. September 04-07.
Academic, Peer Reviewed Conference Paper: National	Visser, EB, Kritzinger, WT & Weideman, M.	An empirical study on the implementation of the Chambers model: Search engine optimisation elements and their effect on website visibility.	The 8th annual Conference on WWW Applications.	Published 2006. Bloemfontein, South Africa. September 05-08.
Academic, Peer Reviewed Conference Paper: National	Kritzinger, WT & Weideman, M.	A study on the correct usage of web page keywords to improve search engine ranking.	The 7th annual Conference on WWW Applications.	Published 2005. Cape Town, South Africa. August 29-31.
Academic, Peer Reviewed Conference Paper: National	Kritzinger, WT & Weideman, M.	The role keyword location plays in website visibility to Search Engines: An empirical study.	The 6th annual Conference on WWW Applications.	Published 2004. Johannesburg, South Africa. September 1-3.
Academic, Peer Reviewed Conference Paper: National	Weideman, M & Kritzinger, WT.	Concept mapping vs. web page hyperlinks as an information retrieval interface - preferences of postgraduate culturally diverse learners.	Annual Conference of The South African Institute of Computer Scientists and Information Technologists	Published 2003. Johannesburg, South Africa. September 17 - 19.
Academic Research Poster at Conferences: International	Weideman, M & Kritzinger, WT.	An empirical study on the relationship between body keyword location and search engine result ranking.	Proceedings of e-society	Published 2006. p373 - 374, Dublin, Ireland.
Academic Research Poster at Conferences: National	Kritzinger, WT & Weideman, M.	Between a rock and a hard place - Search Engine Optimisation or Pay Per Click?	The Twelfth World Wide Web conference.	Published 2010. Durban, South Africa, September 21-23.

Academic Research Poster at Conferences: National	Kritzinger, WT & Weideman, M.	A proposed synergistic framework for website usability & website visibility.	The 10th annual Conference on WWW Applications.	Published 2008. p115, Cape Town, South Africa. September 03-05.
Academic Research Poster at Conferences: National	Weideman, M & Kritzinger, WT.	Website Visibility: Are you seen?	The 6th annual Conference on WWW Applications.	Published 2004. Johannesburg, South Africa. September 1-3.
Academic Research Poster at Conferences: National	Weideman, M & Kritzinger, WT.	Website Visibility.	The first HictE mini-conference.	Published 2004. Cape Town, South Africa. October 19.

SUPERVISOR: Prof. M. Weideman

Signed: Supervisor

30 July 2017

Date

GLOSSARY

Analytics

The analysis of data to research trends, identify the effects of coding or content changes, and to evaluate the performance of a website.

Body Text

The body area is the main area of an HTML page, which contains all the visible text and images that appear in the browser window.

Crawler

A computer program designed to travel across the Internet automatically, gathering information about websites in the process. Also called ‘robot’, ‘bot’ or ‘spider’.

Dual Strategy

The implementation of two strategies that run concurrently for greater benefit.

e-Commerce

e-Commerce consists primarily of the distributing, buying, selling, marketing, and servicing of products or services over electronic systems such as the Internet and other computer networks.

Front end

That part of a computer program which interfaces with the user.

HTML

Hypertext Markup Language. It is a language which uses mark-up tags which enable browser programs to display web pages in an understandable format.

Index

A file which contains all the data collected by the robot(s) of a search engine.

Indexing

The automatic selection and compilation of 'meaningful' words from a website into a database (often referred to as an index) that can be used by a search engine to retrieve pages.

Internet

A worldwide collection of connected computers.

Keyword

A single word or phrase typed into a search engine query. In a different context it may also be a single word that accurately describes the contents of a single web page or website.

Listing

A listing is the result of a search transaction, as displayed by the search engine software on the user screen.

Metadata

Data about data. Metadata refers to data which can be embedded in a web page, and which describes various aspects of that page (e.g. a description, list of keywords, etc.).

Meta-tag

An HTML tag, placed between the <head> and </head> tags, that supplies information about the content of a web page, such as what HTML specifications a web page follows, or description of a web page's content. A meta-tag however, does not affect how a web page is displayed on a browser.

Optimisation

The process of designing, writing, coding, and submitting web pages to search engines to increase the probability that those web pages will appear at the top of search engine results for selected keywords or key phrases.

Pay Per Click (PPC)

A model of internet marketing in which advertisers pay a fee each time one of their ads is clicked.

Query

A word, number, phrase(s), operator(s) or sentence(s) which expresses the user's information need in a language which the search engine can understand.

Ranking

A method used by a search engine to sort and display search results in such a way that the most relevant answer appears first, the second most relevant one second, etc.

Relevance

It refers to the degree to which a retrieval system provides documents which contain the information a user is looking for, as measured by the user.

Search engine

A program which allows a user to specify a query, and then attempts to find relevant information in its index file.

Search engine optimisation (SEO)

It is the process of improving a website's visibility to search engines. The purpose is to gain higher rankings within the organic search results of search engines.

Searching

The process of attempting to find useful information within a large base of unordered data.

Spam

Spam within a search engine context differs from traditional unsolicited e-mail spam. Search engine spam (spamdexing) is the use of any technique on a website which attempts to manipulate the quality of the results produced by the search engines.

Examples of spamdexing include excessive repetition of a keyword in a page, optimising a page for a keyword which is unrelated to the contents of the site, using invisible text, etc. Most search engines will penalise a page which uses spamdexing.

Traffic

The number of unique visitors to a single web page.

URL

Universal Resource Locator - the standard name for the address of a website on the Internet.

Web page

A single page of a website; it normally includes text, graphics, and links to other web pages.

Website

The entire collection of web pages and other information (such as images, sound, and video files, etc.).

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CHAPTER 1
BACKGROUND AND RESEARCH PROBLEM

1.1 INTRODUCTION

1.1.1 The Internet

It is undeniable that Internet activity is increasing rapidly, making it a viable marketing channel. However, it is impossible for everyone to be fully aware of all business opportunities, website details and information available on the Internet. Search engines were created for this very purpose, to enable users to find relevant information in the shortest time possible.

Internet activity has increased significantly in the past decade, as reflected by the growth from one billion users in 2005 to over 3.5 billion users worldwide in 2016. It was reported in 2011 that the growth rate of Internet uses in Africa is at two and a half thousand percent (Miniwatts Marketing Group, 2011).

It was determined that in Africa alone, Internet user activity was mirrored by an increase to well over 340 million Internet users in 2016 (Miniwatts Marketing Group, 2016).

1.1.2 Search Engine Optimisation

The Internet has altered the way users have access to information about products & services, their pricing, availability and essential information (Panda, 2013). Therefore, website owners need to ensure their websites can be found on search engines for the products and services they offer. They need to invest in search engine marketing (SEM).

Search engine optimisation (SEO) is the process of improving a website's position so that the web page appears higher up in the search results of search engines (Curran, 2004). There are some elements used by search engines to determine how relevant a website is (Sullivan and Abela, 2007). These include:

- age of the website,
- frequency of content updates;

- ratio of keywords to the content available on the website and
- the quality and number of incoming links to this website.

Most of the search engines consider backlinks (links to a web page from external website) as an important factor while ranking results. SEO provides numerous benefits, which include better quality search engine result pages (SERPs), a historical trust factor and a lower cost of ownership. These benefits are long-lasting according to Jerkovic (2010).

People generally trust organic search results. Nearly 60% of users click on organic search results and the percentage is even higher for individuals with more Internet experience (Jerkovic, 2010). However, it has to be considered that SEO is very much a long-term strategy.

1.1.3 Pay-per-click

Pay per click (PPC) advertising is paid advertising on search engines and other display websites according to Miller (2011). Furthermore, Clarke & Clarke (2014) state that marketers typically use two distinct SEM strategies of which PPC is one. PPC is where marketers bid on key phrases, develop advertisements to appear based on search queries, and pay the search engines whenever a user clicks on an ad.

Yang, Zhang, Qin, Li & Wang (2012:1141) explain than search auctions (or PPC) have now become a primary online advertising channel. So much so that search auctions now serve as the primary revenue source for major search engines.

For example, Google reported the total revenue at $8.44 billion in the fourth quarter of 2010 of which search auctions comprising about 97% of this total (Yang *et a*l, 2012:1141).

1.2 STATEMENT OF RESEARCH PROBLEM

According to research done by Neethling (2008) there are contradicting results on whether SEO listings or PPC listings are clicked on more frequently by users. Research on SEM has reported that 60-86% of search engine users click in the main section of a search engine result screen when conducting online queries, whereas only 14-40% of these users click on the sponsored links (Hotchkiss, 2004, as cited by Sen, 2005).

By ignoring either SEO or PPC as part of a SEM strategy a company can lose a large number of potential clients (Neethling, 2008).

The research problem can be stated as:

The lack of empirical evidence to guide online marketers to maximise traffic to their websites by employing either PPC or SEO or both campaign types simultaneously, can lead to ineffective budget allocation and wastage.

1.3 BACKGROUND TO RESEARCH PROBLEM

Having an online presence in these modern times is vital for all businesses according to Kennedy & Kennedy (2008). It was estimated in 2006 already that there are over one billion users spending an estimated $102.1 billion on online transactions. Thus, this online presence can hardly be ignored (Burns, 2007). The development of a website that drives potential customers to a physical location or that have the ability to transact online is often the easy part for many companies, including small, medium and micro enterprises (SMME).

A business website can be found in two ways via a search engine. The first is through a PPC listing and the second via an organic listing (the biggest result area on a SERP). The difficult part is being visible to potential clients, and companies should do everything they can to improve their website ranking with search engines (Kennedy & Kennedy, 2008). Search engines are the key to being found by the right customers at the right time according to the same authors.

Previous empirical evidence shows that most SEM spending (approximately 82%) is allocated to PPC campaigns (Sullivan, 2002, as cited by Sen, 2005) while only 12% was spent on SEO. The remaining 4% of the total spending are allocated to other SEM strategies.

Research by Sen (2005) showed even if the total cost of implementing a SEO campaign is the same as implementing a PPC campaign, the PPC campaign would still remain as the SEM strategy most online marketers will choose. This would be true even when the SEO campaign always resulted in a high ranking with search engines. This appears to be a contradiction.

SEO and PPC, according to Neethling (2008), each has their own advantages and disadvantages. PPC can ensure a website being accessible through a displayed advertisement immediately. One shortcoming is that PPC results do not always occupy the main area of a search engine's result page. As a result, it can easily be ignored by search engine users. Another disadvantage is that PPC can be costly, especially with the growing competition for popular keywords. SEO on the other hand cannot ensure top rankings (Neethling, 2008), but may be a smaller financial commitment in the long run.

Furthermore, it can take a long time to effectively implement SEO for a website and eventually achieve high search engine rankings according to Neethling (2008). The main hurdle to implementing a successful SEO campaign is the fact that each search engine has its own unique requirements, which means that when a website is optimised for one search engine it is not necessarily optimised for the others (Sen, 2005).

Search engines also continuously change search engine ranking algorithms in order to prevent search engine spamming. Due to this factor, websites need to be constantly updating their SEO strategy, which can become costly. SEO also has advantages, the biggest being that SEO listings occupy the biggest area of a search engine's result page, and thus search engine users cannot easily ignore them as is the case with PPC (Neethling, 2008).

1.4 RESEARCH DESIGN

1.4.1 Ontological stance

Corazzon (2009) defines ontology as follows:

'Ontology is the theory of objects and their ties. Ontology provides criteria for distinguishing various types of objects (concrete and abstract, existent and non-existent, real and ideal, independent and dependent) and their ties (relations, dependences and predication)'.

Nel & Com (2007) considers that ontology precedes epistemology. Ontology is the characteristic of things (Darwin, 2007) concerned with the 'how' and not concerned with the 'what' as with epistemology. Ontology looks at how the researcher as the observer

may acquire knowledge (Nel & Com, 2007). The researcher must first determine the target before he/she can gather information from the target. In this case it would include the Internet, SEM, SEO & PPC:

Internet: 'The Internet, sometimes called simply 'the Net,' is a worldwide system of computer networks - a network of networks in which users at any one computer can, if they have permission, get information from any other computer' (Anon, 2006).

SEM: The term SEM was proposed by Sullivan (2001a) to cover all the activities involved in performing SEO, managing PPC listings, submission to directories, and developing online marketing strategies for organisation, individuals and businesses.

SEO: The process of improving website visibility is referred to as SEO, which involves designing or modifying websites in order to improve Search Engine Results Page (SERP) ranking (George 2005:3).

PPC: PPC is a term used to describe the linking of individual websites to specific keywords for payment, which in effect involves a number of overlapping practices (Moxley, Blake & Maze, 2004:61).

1.4.2 Epistemological stance

Defined narrowly by Steup (2005): 'Epistemology is the study of knowledge and justified belief. As the study of knowledge, epistemology is concerned with the following questions:

- What are the necessary and sufficient conditions of knowledge?
- What are its sources?
- What is its structure, and what are its limits?

Epistemology is the characteristic of knowledge (Darwin, 2007) concerned with the study of knowledge, how to obtain it and how we can reason (Nel & Com, 2007). With epistemology, it requires evidence to back up its findings to show it is more that an opinion whereas with ontology, it need not be proven as it is evident, it is what already exists e.g. the Internet.

The researcher can be a participant, an insider or an outsider (Mouton, 2001:137-142). In this research project, the study consists of elements that are established, indicating that the researcher can take an objective and detached epistemological stance.

As a result, the researcher should utilise a methodology that considers the researcher to be an outsider, such as a Positivist / Realist approach (Quantitative).

1.4.3 Conceptual Framework

A conceptual framework, according to Perez & Anthony (1995), is a map of concepts and their relationships. More specifically, it describes the things of significance of the research (entities) and characteristics of and associations between pairs of those things of significance (relationships).

Figure 1.1 is a conceptual framework of the elements of this research and the relationships between them. From this conceptual framework, it is clear that website designers and online marketers have different goals and do not necessarily co-operate when a website is being constructed.

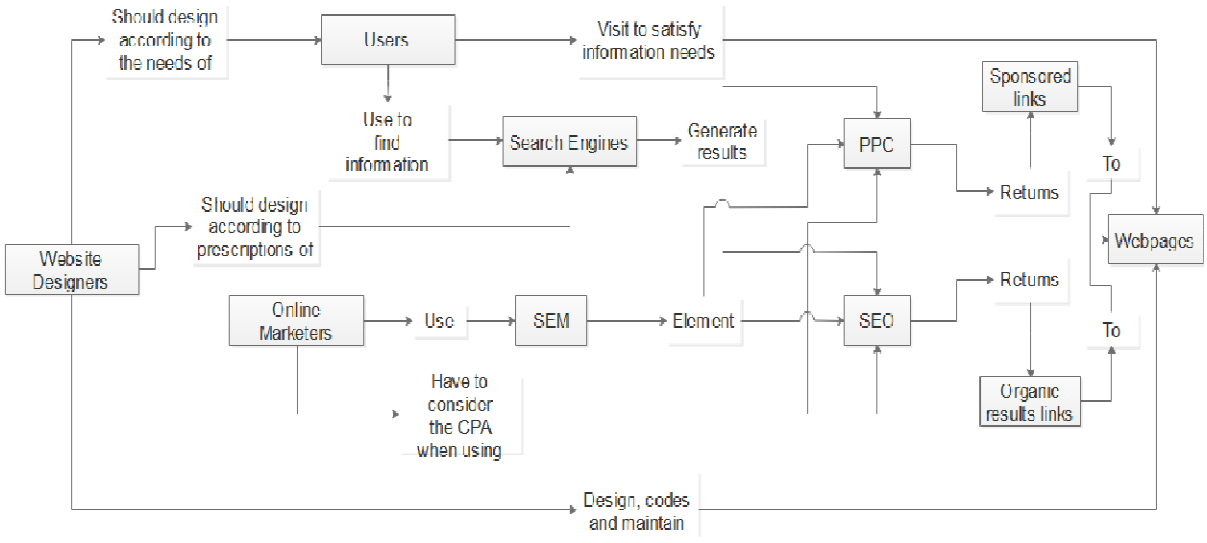

Figure 1.1: Relationship between the various elements of the research

The online marketer uses SEM to promote websites, and the two elements of SEM that will be considered for this research are SEO and PPC. It is these two elements which search engines consider when returning results for a user's query.

SEO and PPC will return organic result links and sponsored result links respectively. However, there is no rule that states that website owners cannot use both methods for promoting his/her website.

The purpose of this research project is to develop a SEM model within the scope of the framework depicted in Figure 1.1 to determine how to implement a dual strategy to be more effective in driving traffic to a website.

1.4.4 The research phases

The research project has been divided into three sections:

(1) Journal Article One, which was an empirical field experiment where the authors investigated websites that invested in PPC, and determined if they also invested in SEO.

(2) In Journal Article Two, the author proceeded with an experiment where a successful e-commerce concern invested in PPC for some time. The campaign was de-commissioned and SEO was implemented across all pages of the website. The author then recorded traffic and expenses and compared the PPC with the SEO campaign.

(3) Journal Article Three aimed at comparing successful e-commerce websites that utilised both SEO and PPC, and evaluated their Cost Per Acquisition (CPA).

1.4.4.1 Journal Article One

The research design used in this research article was an empirical field/natural experimental design. For the purpose of this research the author has investigated only SEO and PPC. An experiment was conducted to test whether or not the website owners in the sample who invested in PPC marketing, also did so for SEO.

Thirteen industry categories were selected as defined in Google's directories shopping section (http://directory.google.com/). These categories are:

Beauty & Personal Care
Computers
Consumer Electronics
Family & Community
Finance
Food
Gifts & Occasions
Home & Garden
Hobbies & Leisure
Real Estate
Sport & Fitness
Travel & Tourism
Vehicles

Next, a large number of experimental searches were done to gather data. Two search queries were generated for each of the 13 categories - one a fat head search phrase (short, wider and less focussed - the key-phrase consists of at most two keywords) and the other a long tail key-phrase (longer, more focussed and specific - the key-phrase consists of at least four keywords).

The fat head queries for each of the categories were then entered separately in Google. In each instance, the top 10 websites that invested in PPC were identified from the SERP results, and recorded. A search was then performed to test whether or not these same websites also had an organic listing within the top 100 results for the fat head key-phrases.

After the fat head search queries were inspected and recorded (both PPC and SEO results), the author searched again, this time using the long tail key-phrases. The top 10 websites that invested in PPC were recorded.

The authors then performed the search again with the long tail key-phrases to see if the 10 websites which invested in PPC had natural listings within the top 100 of the search results.

The authors then performed a cross-check, meaning that the PPC websites that were generated by the fat head key-phrases were checked to see whether they had organic results for the long tail key-phrases.

Also, the author then checked the PPC websites that were generated by the long tail key-phrases to see whether they had organic results for the fat head key-phrases. Results were recorded.

1.4.4.2 Journal Article Two

Data was gathered from a real-life website where first the one (PPC) and then the other (SEO) of the marketing approaches were followed exclusively. Usage behaviour and statistics were recorded and analysed in an attempt to compare the expenditure with the gain from each approach.

A company in Cape Town, South Africa, manufactures PVC, polypropylene and leather promotional and stationery products. The company's name is not listed; for clarity they will be named XYZ. The company invested in PPC from May 2010 to May 2011 in an attempt to drive traffic to the website.

During that time no SEO implementation was done on the website. Each month XYZ spent, on average, R3000 on PPC. However, after the PPC campaign was terminated, they paid a once-off fee of R19 000 for the SEO project.

The XYZ concern is a relatively small company. Considering that they have a typical monthly website traffic figure of hundreds as compared to millions of visitors for large companies, their business model must be sound to run a successful e-commerce concern. The most important requirement of the client was that their website remained optimised in such a way that it could lead to sales.

The authors did a detailed investigation of the XYZ website, identifying elements that could be improved through SEO with the estimated short-term cost it might have entailed.

The following elements which needed improvement were identified:

- Header tags (were not being used).
- Image file names (were inappropriate and non-descriptive).
- Metadata (was outdated).
- Alternative tags (were inappropriate and non-descriptive).
- Product descriptions (were too short or non-existent).
- The bounce rate (was too high).

The project was thus split into three stages:

- Throughout June 2011 the header tags were modified.
- Throughout July 2011 the image filenames and image ALT tags were modified.
- Throughout August 2011 the product descriptions, copy, and metadata were modified.

1.4.4.3 Journal Article Three

For this research article, the authors examined the analytics and other statistical usage results of three real-life websites where both PPC and SEO were applied in tandem. The three websites were from three distinct industries.

The first website (the company's name is not listed; for clarity, they will be named Website 1) was in the Bedding and Linen industry based in South Africa. They are an e-commerce website and invested in both PPC and SEO. In contrast, the second website (the company's name is not listed; for the purposes of recording they will be named Website 2) was in the Toys Retail Industry and is based in the United Kingdom. They also invested in both PPC and SEO.

Lastly, the third website (the company's name is not listed; for clarity they will be named Website 3) was in the Road-Side Assistance Industry and is based in South Africa. Website 3 is not an e-commerce website.

However, for this research article the authors considered Goal Conversion, i.e. the number of new membership sign-ups. This metric is roughly equivalent to an indication of sales.

The three websites were monitored for a period of 90 days (three months). Usage behaviour and statistics were recorded and analysed in an attempt to compare the expenditures with the gains, more specifically the CPA for each of these test websites.

Each one of the test websites was running an AdWords Campaigns during the monitoring period. As mentioned before, each of these test websites was also running SEO campaigns alongside PPC Campaigns. The AdWords costs were recorded for each of the three websites as well as the monthly SEO cost. For the two e-commerce websites (Website 1 & 2) the following figures were recorded for both the PPC and SEO campaigns:

- The number of clicks received over the three-month period for both the paid section and organic section of Google's SERPs.
- The number of sessions received from both the PPC and SEO campaigns.
- The average bounce rate for both PPC and SEO sessions.
- The average number of pages per session generated by from both PPC and SEO.
- The e-commerce conversion rate for PPC and SEO.
- The number of transactions recorded for both PPC and SEO.
- And lastly, the total revenue after three months from both PPC and SEO.

For Website 3 (the non-e-commerce website) the same figures were also recorded for both PPC and SEO with the exception of:

- The e-commerce conversion rate was replaced with ‘goal conversion rate’, and
- No revenue was recorded since the website was not e-commerce enabled.

1.5 RESULTS AND CONCLUSION

From Article One, results showed that few of the websites that invested in PPC had organic listings within the top 100 for both fat head and long tail key-phrases. It therefore confirms that online marketers seldom use SEO as part of a SEM campaign. Even when assuming that the implementation of SEO costs the same as investing in PPC, and the benefits include the assurance of always being part of a user’s consideration set, SEO was still not the optimal SEM strategy for website marketers.

One of the major reasons for the quick adoption of the PPC strategy is that it is very similar to traditional paid advertising strategies and business owners or Marketing Managers can manage such campaigns on their own. Many of the companies that invest in PPC do not have the skills/training to implement SEO on their own. They will have to outsource this to SEM companies to do this on their behalf.

Some website owners have heard of SEO before but do not know what it is or what benefits it could have for their websites. Until they do, the logical way for them to get traffic to their website quickly and effectively will remain traditional advertising methods like radio, newspaper, fliers and brochures, but also PPC.

Article two's results indicated that the PPC system did produce favourable results, but on the condition that a monthly fee must be set aside to guarantee consistent traffic. The implementation of SEO required a relatively large investment at the outset, but it was once-off.

After a drop in traffic due to crawler visitation delays, the website traffic bypassed the average figure achieved during the PPC period after a little over three months, while the expenditure crossed over after just over six months.

In conclusion of Article Two, it can be claimed that, in this specific case, SEO provides a better investment than PPC. It is also predictable that this advantage will increase as time goes by. It should also be noted that traffic to a website on its own is not the only indicator of success. A high conversion rate, leading to more revenue generated, and eventually leading to increased profit would be the final indicator of the success of an e-commerce website.

It was found in Article Three that the CPA for SEO, for each of the e-commerce websites, was significantly lower than that of the CPA for the PPC campaigns.

Based on the results obtained from Article One, Article Two and Article Three, it can be claimed that running PPC alone, like many Online Marketers do, the company will most likely miss out a large portion of the market share. PPC has huge short-term benefits, however, on the condition that a monthly budget must be set aside to guarantee consistent traffic. If the budget runs out, the traffic stops.

SEO, on the other hand, is very much a long-term strategy and it does require a high initial investment. However, unlike PPC, it does not necessarily require an ongoing budget to keep sending traffic to the website.

This thesis contributes to the existing body of knowledge in the field of SEM by proving that SEM expenditure in an unbalanced way seems to be the norm. It then confirmed that both SEO and PPC are required for maximum website exposure.

1.6 DELINEATION OF THE RESEARCH

The research project has the following limitations:

The research project is limited to four websites. Three of the websites had e-commerce enabled and one was purely lead generation. The four websites were all from different industries. Their SEM budgets were vastly different from each other.

The core focus of the research project (but not limited to) was on-page SEO elements and Paid Search. The focus of the research project was limited to the search engine Google, since Google currently enjoys the majority of the search market share.

1.7 CONCLUSION

Within South Africa SMMEs play an important role in the country's economy. These SMMEs often have limited budget available, however, the need for marketing is essential for their survival. Without proper marketing, the situation often arises that customers are not always aware of the existence of the SMMEs that offer the products and/or services that they require.

While considering the specific parameters of this study, an investment in SEO rather than a PPC campaign appears to produce better results at a lower cost, after a longer period of time. PPC on the other hand can produce very specific targeted results in a very short period of time. Regrettably, these two concepts are often not applied simultaneously which could result in a loss of market share.

This research has important implications for SEO and PPC practitioners, and for website owners. It should influence the way SEM budgets are applied. Finally, it could be used by marketing managers in better utilising their limited SEM budgets. No evidence could be found that this kind of empirical research has been done before, hence the results are considered to be unique.

CHAPTER 2

LITERATURE REVIEW AND ANALYSIS

2.1 INTRODUCTION

According to Weideman and Kritzinger (2003:231), the amount of data available on the Internet cannot be measured. New and existing web page authors constantly add more information by uploading new and revised web pages to Web servers, some on an hourly basis.

It was estimated in 2005 by Ambergreen Internet Marketing that more than 1.3 billion websites are available on the Internet, and over 1 million new websites are added to it every year (Ambergreen Internet Marketing Ltd, 2005). The amount of information on the Internet continues its trend to grow exponentially according to Kobayashi & Takeda (2000) as cited by Zhang & Dimitroff (2005).

An increasing number of sophisticated tools have been developed to aid with the retrieval of all the information that is available on the Internet (Brinkley & Burke, 1995). Some tools that the Internet offers are commercial search engines and subject gateways; seen as two of the most important tools for locating/retrieval of information (Thelwall, 2002). These search engines provide access to this overwhelmingly complex information resource. Thelwall (2001) estimates that around 80% of users utilise search engines to locate information on the Internet.

This emphasises the underlying importance of web pages being listed with search engines. An important strategy for any website owner is planning how a visitor would or could find their way to their particular website (Thelwall, 2001).

A good example of this is the business strategies that a lot of large companies are using to ensure that their website obtains a high ranking in certain Google searches. Some companies opt for paid inclusion, to have their sites ranked higher than they normally would have (Smith, 2003).

‘Basically, every Internet Web publisher wants good web page visibility in search engine results so as to increase accessibility of their web pages. Unfortunately, many websites

have poor visibility in search engine rankings or may not be listed at all due to various reasons' (Zhang & Dimitroff, 2004).

Website developers must ensure that they have good rankings with search engines (Podesta, 2000). Ultimately, there can only be ten (typically) websites appearing on the first SERP with most of them vying for the first position. However, being included in a search engine index is no guarantee that a user will be able to find the website (Weideman & Kritzinger, 2003).

2.2 BUSINESS AND THE INTERNET

According to Hämäläinen et al (1996:51-58) the Internet has created an unparalleled opportunity for users to access knowledge products on a just-in-time and on-demand approach. The Internet is the fastest growing technology in the world. It has taken just seven years to reach a 25% market share, as opposed to the telephone that took 35 years, and the television which took 26 years (Singh, 2002).

According to Moodley (2000) as cited in Singh (2002), the traditional bricks and mortar business is rapidly being replaced by clicks and mortar businesses, referring to business being conducted at a click of the mouse.

Commerce on the Internet is growing at an exponential rate according to Podesta (2000:73), and those companies that cannot or will not capitalise on this interconnected electronic marketplace could be left behind.

Simeon (1999:287) claimed long ago already that the Internet had become a powerful business tool. This approach to the communication and distribution of information and services has transformed the fundamental dynamics behind many social and business interactions.

The barriers and obstacles which often accompanied traditional commerce, were giving way to new online business approaches. Consumers, producers and distributors now all have flexible, fast and inexpensive ways of participating in the market for products and services around the world.

What really matters about the Internet can be summarised in one word - speed - and speed is the lifeblood of business success in the 21st century (Podesta, 2000:73).

'Product development cycles are measured in months; product ramp-up is measured in days; and product lifetimes are approaching that of the mosquito. The Internet can help us keep up, and that is why our industry needs to use the Internet to keep pace with the new demands for speed' (Podesta, 2000:73).

The Internet and, more particularly the WWW, started attracting businesses in their thousands (Cockburn and Wilson, 1995). According to authors Bughin, Chui & Manyika (2013), the pace of technology change, innovation and business adoption since 2010 has been extraordinary.

It is estimated that the world's data is doubling every 20 months; and in 2013 the number of Internet-connected devices has reached 12 billion. Not only that, payments by mobile phones was quickly approaching the $1 trillion-mark back in 2013 (Bughin, Chui & Manyika, 2013).

In the theory of cultures, affect is a concept used to analyse how our body and mind can be evoked by something. Every living human being is constantly affected by our environment: our family and friends, our daily work, technology we are using, and many other factors (Seigworth et al, 2010). In the business world, humans are required to act in a certain way, to empower companies to make a profit.

As a result, "affective capitalism" transforms humans into a form of asset for any business. A recent study exposed that research on the influence of effects on humans and their relation to the use of search engines requires much further research before being fully understood (Huvila, 2016).

2.3 SEARCH ENGINES

Just before the birth of the Internet and search engines as we know it today, the way human searchers interact with text was investigated. The user was identified as the central component of this process, unknowingly hinting at the future removal of the librarian intermediary in the traditional information retrieval process (Belkin, 1993).

Search engines provide the average Internet user with a free and easy way to find general information on the Internet (Weideman & Kritzinger, 2003:231-236). Search engines are used to locate information on the Web, whether relevant or not (Alimohammadi, 2003: 238-242).

Search engines are tools that help a user to retrieve information when a query is typed into the search text box, where-after the user will click on the search button (Jansen, 2006). Weideman (2004a) states that a search engine is a program that offers users interaction with the Internet through a front end, where the user can type in a search term, or make successive selections of relevant directories.

It was also observed that search engines then compare the search term against an index file, which contains information about websites. Matches found are then returned to the user via the front end (Weideman, 2004a). A substantial amount of information can be easily retrieved when a search is done for any particular query.

Search engines have been commended because of their ability to quickly locate a vast array of information on an extraordinary range of topics (Rowland, 1998:222). Despite this fact, they have fallen victim to extensive criticism.

Many users feel that search engines tend to retrieve information that is irrelevant and contrary to what the user is looking for. They have also been criticised for their habit to retrieve duplicate results (Green, 2000:124-137).

At the same time, it has been proven that both the length and the effectiveness of the search query generated by the human searcher plays an important role in searching success (Belkin et al, 2003). Since search engines removed the librarian as intermediary in the information retrieval process, this fact is often ignored by human searchers who expect a quick and accurate answer from a software-based (no human intervention) search engine algorithm.

Search engines have large databases (commonly referred to as their index) that store information such as web pages, images, products, news, videos and many other types of files. Information is listed according to search engine internal algorithms (Jansen, 2006).

When performing a search for a keyword, the web page lists results on the left-hand side of the browser page (also commonly called the main area of the search results). Here, the internal algorithms display the most relevant web page results for the keywords.

Most search engines follow their own algorithm and a few combine or share with others. This highlights the fundamental importance of a strategy for all website owners for them to properly plan the way in which visitors can locate a particular website.

As a result, knowing how results are ranked is crucial in understanding what to do to ensure top rankings for a given website. In the world of e-commerce, this knowledge could mean the difference between doing well financially and going bankrupt in a very short space of time. Much research has been done in an attempt to determine, for Google specifically, what the ranking factors are and how they are applied (Weideman, 2009; Sullivan, 2011a; Luh et al, 2016).

However, the details of ranking algorithms are considered to be trade secrets, and all attempts so far have produced guesses, estimates and models of how Google's algorithm weighs ranking elements in determining ranking of websites on its result pages.

Search engines are intended to assist in helping people find information that is at least slightly relevant. With the estimated 1.3 billion websites available, search engines are intended to assist searchers sort through the large amount of information that is available on the Internet, playing an important role in the process of information retrieval (Zhang & Dimitroff, 2004:310-320).

According to Thurow (2008), search engines are the main way in which Internet users notice websites. Approximately 81% of 256 million Internet users visited a particular search engine during December 2006. The number of people searching the Internet, and the time people spend searching, continues to increase over time (Thurow, 2008). Nowadays, organisations of all sizes are realising the importance of online marketing, especially by means of search engines.

However, it has also been proven that search engine result volumes can be used to predict certain marketing trends. As such these results can be used as a form of sentiment analysis and volatility forecasts (Braun, 2016).

Search engines have come of age – they are no longer just the playing ground of younger users looking for celebrity information or answers to school tasks, but the sheer volume and depth of information stored, plus the ability of modern algorithms extracting meaning from search queries (Lin et al, 2014), have created new business opportunities for their users.

2.4 SEARCH ENGINE OPTIMISATION

Finding relevant information on the Internet is not always as simple as it sounds. Most professional communication specialists, researchers and online marketers can point to some content on the Internet that they themselves have authored. As Killoran (2013:50) points out, it is usually content such as on their employers' or clients' websites, or on websites they maintain for professional, personal or community interests.

Killoran (2013:50) continues and states that what is usually the case is that these practitioners can easily compose a carefully worded search query by recalling very specific features of the said content, which resulted their content appearing on the first page of the SERP. However, should you ask someone else to find the same content, someone who does not already know the said content, the chances of successfully finding the content on the Internet is vastly diminished (Killoran, 2013:50).

SEO is a process that maximises web page visibility in search engines for users' search queries by keyword or key phrase (Jerkovic, 2010). SEO informs search engines what the content is of the web pages. Descriptive page titles, meta tags, Alt attributes, anchor text, search friendly HTML tags and code, optimising quality content, keyword optimisation and link building strategies all contribute to SEO.

SEO provides numerous benefits, which include better quality SERPs, a historical trust factor and a lower cost of ownership. These benefits are long-lasting (Jerkovic, 2010). According to the same author, people generally trust organic search results. Nearly 60% of users click on organic search results and the percentage is even higher for individuals with more Internet experience.

At the same time, research has proven that not all websites (even in the academic world) make use of even basic SEO to improve their visibility to search engine crawlers. In one

case study on Korean bibliographies, the value of SEO was confirmed, but it was noted that SEO is seldom implemented on these library service websites (Lee et al, 2016).

Google has recently moved to personalised search results. At the end of 2009 Google announced that it would personalise a searcher's search results according to his/her search history (Blakeman, 2010:47). Also, the way Google goes about finding, evaluating and indexing a website is controlled by its algorithms.

These algorithms also change from time to time to ensure that Google sticks with its mandate to find the most relevant website for a user's key phrase. So, SEO Strategists had to adapt and evolve their strategies alongside major search engines like Google.

Coopee (2000), as cited by Onaifo & Rasmussen (2013:89), was one of the first to describe the phenomenon of SEO. Search engines have become the number one tool for information retrieval on the Internet, given the increasingly high number of people that use them to search for information online. Furthermore, the same author also argues that given the growing number of pages on the Web, it is difficult to obtain and retain high search engine rankings, and that Web organisations need to make certain changes on their websites to increase their rankings on search engines.

The author also predicted that the competition for top search engine results pages will continue to increase if online content continues to grow and users continue to rely on search engines for information retrieval (Coopee (2000) as Cited by Onaifo & Rasmussen (2013:89)).

According to Curran (2004:202) SEO is the process of improving a website's position on a SERP so that the web page appears higher in the search results of major search engines. In 2013 the definition changed somewhat, according to Moreno & Martinez (2013:564), to this:

'Search engine optimisation (SEO) is the process of increasing the number of visitors to a website by achieving a high rank in the search results returned by a search engine'.

This definition still refers to ranking as a key performance indicator. However, increasing the number of visitors seems to be becoming more important than rankings, especially since Google is increasingly moving to personalised search results.

In 2004 the process of SEO was vastly different than today. In 2004, according to Curran (2004:202), the process basically involved submitting your site to the vast majority of search engines such as Altavista, Excite, Google, and many others; and manual categorisation in subject category engines such as Yahoo!.

Search engine result ranking is determined by how well a web page satisfies certain criteria, called the 'ranking algorithm'. This is used by search engines to return appropriate results to the searcher query. They then rank the results in the most relevant order. For search engines, this is important as relevant rankings make them more popular among searchers. This in turn is likely to increase advertising revenue (Mbikiwa, 2005:34).

SEO is the process of modifying a website to improve the chance of satisfying a ranking algorithm (George, 2005:3). SEO cannot guarantee a top ranking. On the other hand, SEO results normally occupy the main area on SERPs and can as a result, not easily be ignored by users as they tend to do with PPC results (Enquiro, 2004).

Ranking algorithms are influenced by two major factors. One is 'query-factors', which relate to the content of the web page, and the other is 'query-independent factors', which rely on information from web pages that link to the web page (Evans, 2007:23).

Query-independent factors can be divided into 'internal' and 'external' links, and consists of words underlined by the Web browser, which provide access to another web page location (Visser, 2006:49).

Internal links connect web pages within the same domain, whereas external links connect one website to another. The use of external links is an important part of SEO as most search engines allocate some percentage of their pagerank weight to the number of incoming links from other web pages (Moran & Hunt, 2005:341), if the incoming link is from a reputable website (Curran, 2004:203).

SEO has evolved over the past decade. According to Fishkin *et al* (2015) SEO is a marketing discipline focused on growing visibility in organic search engine results. It encompasses both the technical and creative elements required to improve rankings, traffic, and increase awareness in search engines.

Fishkin *et al* (2015) states that there are many aspects to SEO, from the content of your page to the way other websites link to your website. You also need to ensure that your website is structured in a way that search engines will understand the content. Ultimately, it's about making your site better for the users.

When designing web pages, the Internet Web publisher's underlying intention is to draw as many visitors to the site as possible. This requires that the site has a good ranking with top search engines (Ford et al, 2002:124-137).

To ensure a top ranking with search engines, the web page must have good visibility to search engine crawlers (Lowley, 2000:190-211). According to some authors there are various factors that can contribute to the visibility of a website. These include web page metadata structure, web page content, hyperlink cited status, search query expansion, as well as a number of other factors (Zhang and Dimitroff, 2004:310-320; Zhang & Dimitroff, 2005:666).

These authors also state that many websites have poor visibility or may not be listed at all due to various reasons. A metadata system is a system used to describe a web page for a variety of reasons. web page content is simply determined by words on the web page itself.

Hyperlink cited status of a web page refers primarily to the number of web pages on the Internet that hyperlink to or cite a particular web page: the more pages hyperlink to a web page, the better the hyperlink cited status, and vice versa. Hyperlink cited status of a web page is a variable that may affect its position on the SERPs.

Since a web page with high hyperlink status usually is more important or influential than other pages with low hyperlink status, some search engine ranking algorithms take it into consideration, making results ranking appear to be more relevant. In other words, a returned web page with a better hyperlink cited status would be ranked higher than other returned pages (Zhang & Dimitroff, 2005:666).

Query expansion also affects web page visibility in a search engine from a different perspective. The Internet search process is an interactive process between a human being and a search engine. It is a complex process affected by multiple variables. During this interactive process, an initial query may be changed, modified, or revised, moving

toward a more effective, and well-defined query. Some search engines monitor, analyse, and use users' query expansion information as a factor for web page visibility calculation (Zhang & Dimitroff, 2005:666).

2.5 PAY PER CLICK

Some 16 years ago, it has been predicted that search engine companies would turn to micro-payments as a means of generating income, since the basic search function has been and still is free to the average user ((Green, 2000: 124-137) quoting Nielsen). However, this prediction has not yet materialised in the search engine industry. Instead, large amounts of money have been and still is generated by a variety of schemes which produce actual income through advertising for search engines.

Paid placement is the first one that comes to mind. This service is also called PFP (Pay For Placement) or PPC. It involves the payment of a bid price by a website owner or webmaster to a search engine company when a user clicks on their advertisement.

This bidding is made for specific keywords or keyword phrases. Every potential visitor who then clicks on this listing generates this bid charge (normally from a few cents per click) to the owner, hence the name PPC.

One major benefit of PFP is the fact that the website does not have to be optimised for keyword usage, saving expensive resources. Secondly, any website owner can have any website listed for (a) certain keyword(s), regardless of the relevance of these keywords to the content, if the bidding price is paid. This fact leads to some ethical questions being raised. This has since changed and rank is now determined by the bid price multiplied by the page quality (Moxley *et al,* 2004: 61-65).

A second possibility is paid inclusion (PI). This service is also referred to as PFI (Pay For Inclusion). Webmasters or website owners pay a set price for web pages to be included in search engine databases for a certain period. It is also guaranteed that the crawler will revisit these web pages for refreshing within a specified period.

However, no guarantee is given that the relevant web pages will be listed on the result screen of the user. PFI search engines include Ask Jeeves, Inktomi and AltaVista.

PI does offer the advantage to the client that a website will be regularly revisited by the crawler, ensuring that recent changes to the website will be reflected correctly in the database. Some PI systems also provide regular reports on click-throughs, allowing owners to trace the effectiveness of certain keywords and/or phrases. A further advantage of this system is the fact that dynamically generated web pages, to which search engine crawlers are notoriously averse, can benefit by this type of promotion.

However, modern online paid advertising looks a lot different. According to Springborn & Barford (2013:211) advertising is one of the primary methods for generating revenue from websites and mobile apps. The same author continues and states that a recent report from the Internet Advertising Bureau (IAB) places ad revenues in the US for the first half of 2012 at $17 Billion.

This is a growth of 14% compared to 2011 (Internet Advertising Board as cited by Springborn & Barford, 2013:211).

The arrival of yet another form of advertising, and with it large volumes of information piled up before consumers already suffering from information overload, has created yet more new decisions consumers have to make. It was proven that consumers tend to try and limit the number of information sources they use to assist with their purchasing decisions. They seemed to use pre-established evaluation criteria, which made the success of another new advertising system even more difficult to achieve (Broilo et al, 2016).

Recent research attempted to find better measures to evaluate the performance of search engine advertising (Clarke et al, 2017). Simply counting the number of visitors to a website (traffic) is certainly no reliable indication of profit being made by for example an e-commerce website. Measuring the actual conversions (a human browser proceeding to buying a product online) has proven to be more reliable for this purpose. In this research, the authors propose a new measure, called CvP (Conversion Potential) as a more accurate way of measuring the success of a search engine marketing-based campaign.

CvP was based on the traffic to and the sales on a website, plus the ranking on the advertisement leading to the sale. In other research, the conversion rates of websites in the hospitality industry was investigated (Cezar et al, 2016). It was found that these three factors specifically had a large positive impact on conversion rates: location rating, a large

number of recommendations and a high ranking on search engine result pages. Especially the last finding has been confirmed by other research, spanning many decades.

At a high level the basic notion of selling space on web pages and apps for advertising is simple. However, the mechanisms and infrastructure that are required for online advertising are highly diverse and complex. The online ad ecosystem can roughly be divided into three groups: advertisers, publishers and intermediaries (Springborn & Barford, 2013:211).

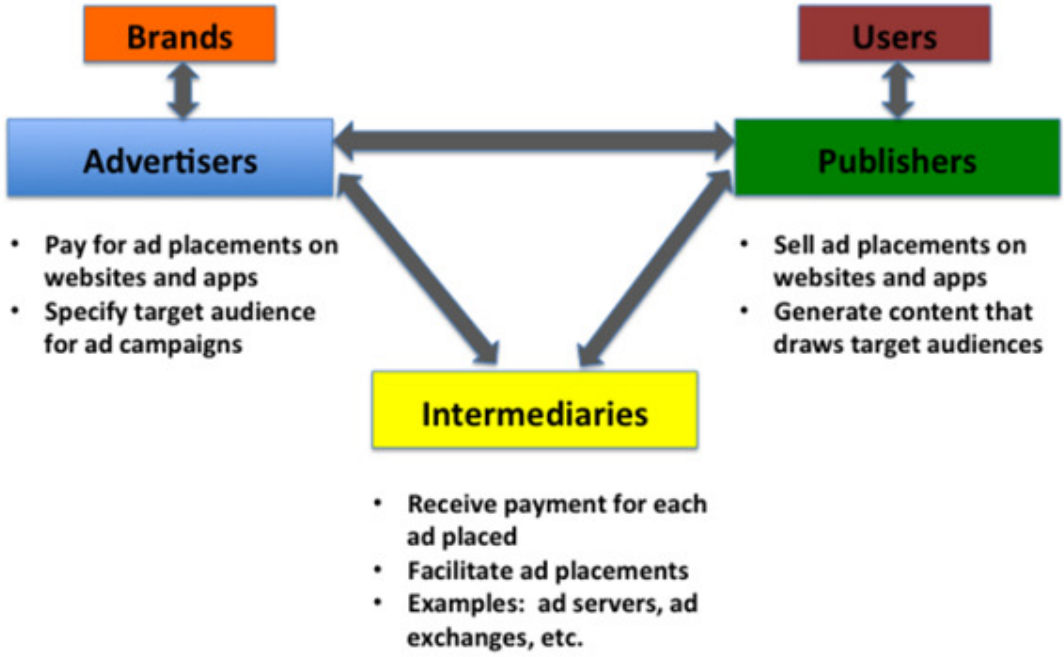

Figure 2.1: Key participants in the online advertising ecosystem. Payment flows from brands to advertisers to intermediaries and publishers (Springborn & Barford, 2013:213)

From Figure 2.1 - the Advertisers pay publishers to place a specified volume of creative content with embedded links on websites and apps. Intermediaries are often used to facilitate connections between publishers and advertisers. Intermediaries typically place a surcharge on the fees paid by advertisers to publishers for ad placements and/or ad clicks (Springborn & Barford, 2013:211).

What is immediately observable from this description is that publisher and intermediary platform revenues are directly tied to the number of daily visits to a website or app.

Therefore, there are strong incentives for publishers and intermediaries to use any means available to drive user traffic to publisher sites according to Springborn & Barford (2013:211).

The availability of advertising space on the first page of the search results is most appealing. Most paid search systems, such as Google AdWords, are driven by a bidding model where the advertiser must bid on keywords to have their ad placed.

The bid is for keywords/phrases that the advertiser wishes to have visibility for. Paid search ads generally appear above and the organic results; so paid ads compete with naturally occurring results for the attention of users. Having the advantage of creating a large amount of Internet traffic, search engines provide advertisers with better placements on SERPs.

The global paid search advertising market is predicted to have a 37% compound annual growth rate (CAGR). This growth was estimated to be more than $33 billion in 2010 and has become a critical component of firms' marketing campaigns (Ghose and Yang, 2008).

This is not surprising, according to Ghose et al (2008), in view of the fact that 94% of consumers use search engines to gather information on the Web, and 81% use search engines find the information they are looking for every time they search.

However, a number of studies have shown that many Internet users do not trust or respond to search engine-based advertisements (Neethling, 2008; Murillo, 2017). A contradiction exists between the large amount of revenue generated by PPC systems (like Google Adwords, for example), and the distrust apparent amongst many Internet users. This could provide material for future research.

The results of implementing a PPC campaign are immediate (Jerkovic, 2010). On the other hand, an organic SEO campaign may take up to three months or more for results to be apparent.

In this case, PPC is advantageous for those who are looking to promote an initiative that will go live in a short amount of time, or whose business is seasonal in nature and who can therefore only arrange promotions during certain months of the year.

Finally, the effect of social media on search engine advertising cannot be ignored. Recent research has proven that online consumer searches have a large effect on purchasing decisions.

Findings from this study show that brand positioning and brand-attribute associations in the minds of searchers are demonstrated by the search queries they generate. These findings can have a large influence on the design of a digital marketing campaign (Jun et al, 2017).

2.6 THE AUTHOR'S OPINION

Companies that represent their businesses on the Internet by means of a website are taking advantage of a marketing channel that is changing the way in which business is conducted globally. The Internet has already demonstrated that it is the communication, commerce and marketing medium of the future and it is adapting rapidly to better support mobile devices.

Humans, on the other hand, do not know what they do not know. Search engines were designed to aid the searcher to find the information he is seeking, but doing so in the shortest amount of time.

But, how are search engines evaluating the quality of information related to the search query, based on a query uniquely defined by a searcher who is the only entity that fully comprehends the nature of the query? Before the birth of the Internet Belkin, Oddy and Brooks (1982:62) defined the ASK model to consist of three basic phases:

- The searcher and search engines experiences a knowledge base anomaly.
- The searcher queries the database which in turn, returns information.
- The searcher interprets the information obtained to resolve the anomaly.

The search result therefore either completely satisfies, partially satisfies or does not satisfy the searcher’s need. The author thus believes that the quality of search results cannot be measured, owing to the relevancy of the search result being relative towards the searcher’s interpretation. However, through the process of SEO the quality of the search results can be influenced.

PPC can target very specific or broad search terms. If budget is available and the paid search ad meets all the requirements from the search engines then the ad will be displayed and users will make their way to the relevant website, hopefully converting from casual browsers to paying customers.

The author has thus identified the SEM channels used in this research. However, which one should be used? Should online marketers invest in SEO, PPC or both? What are online markers currently doing and should they be doing something else? This research was done to explore these questions.

CHAPTER 3
JOURNAL ARTICLE ONE

3.1 JOURNAL ARTICLE ONE

From the literature, it is clear that some contradictions exist in terms of spending on SEO and/or PPC for a given website. One author claimed that spending on SEO does not make financial sense, while others have proven that more users click on organic than on PPC results. The objective of this research project was therefore to determine whether or not website owners who have invested in PPC, also invest in SEO.

See Appendix A for the first page of the journal article as it was actually published.

3.2 TITLE

Search engine optimisation and pay per click marketing strategies.

3.3 ABSTRACT

Any e-commerce venture using a website as main shop front should invest in marketing their website. In this study, the relationship between website owners having invested in SEO and PPC respectively is investigated and reported on. The design used in this research was based on an empirical field experimental approach. The authors considered the implementation of both SEO and PPC, and compared the results. Data was gathered from Google search results after performing both fat head and long tail key-phrase searches based in various categories. The websites that were listed in the top 10 of the sponsored section of the search results were recorded. These websites were then checked to see if they also had an SEO ranking within the top 100 for both the fat head and long tail key-phrases.

It was found that website owners seldom invest in SEO as part of a search engine marketing (SEM) campaign. This seemed to confirm some of the findings by other authors. Only SEO and PPC were evaluated, as they are the most used search engine marketing techniques. Possible future research could include investigating other search engines' PPC systems - Bing or Yahoo!, for example.

This research has important implications for SEO and PPC practitioners, and for website owners. It should influence the way budgets on search engine marketing are applied.

Finally, it could be used by marketing managers in better utilising their limited SEM dollars. No evidence could be found that this kind of empirical research has been done, hence the results are considered to be unique.

3.4 INTRODUCTION

Kennedy and Kennedy (2008) claimed that it is important for all businesses to have a Web presence. With an estimated $102.1 billion spent by over 1 billion users on online sales in 2006, it makes financial sense to acknowledge this trend (Burns 2007).

The key to being found by the right people at the right time, according to the same authors, lies with search engines. There are two ways a customer will find a business website via a search engine: through an organic result listing (based on search engine optimisation - SEO), or a pay-per-click (PPC) listing.

When search engines added PPC to organic results, they provided a second list of ranked results on the same page as the organic results. This generated more competition amongst especially commercial websites. Not only did the traditional organic results have to compete for the top 10 positions amongst each other, but now a new 1st position was added to chase - PPC.

Previous empirical evidence shows that most Search Engine Marketing (SEM) spending (approximately 82%) has gone towards PPC campaigns (Sullivan 2002, as cited by Sen, 2005). Only 12% was spent on SEO and another 6% on other SEM strategies.

Research by Sen (2005) showed that even if the total cost of implementing an SEO and a PPC campaign were the same, the PPC campaign would still prevail as the SEM strategy of choice for most on-line marketers.

Other research on SEM has reported that 60-86% of search engine users click on the displays in the main section (natural results) when conducting on-line queries, whereas only 14-40% select the sponsored links (Hotchkiss 2004, as cited by Sen 2005).

Neethling's research confirmed this trend, and also claimed that ignoring either PPC or SEO as part of a SEM strategy will cause a company to lose a large number of potential clients (Neethling 2008).

SEO and PPC each has their own advantages and disadvantages. PPC can ensure a website being listed immediately and furthermore can ensure high rankings, assuming a high bid price and quality score.

One disadvantage is that PPC can be costly, especially with the growing competition for popular keywords. SEO on the other hand cannot ensure top rankings (Visser and Weideman 2011), but could be cheaper to implement.

Furthermore, it can take time to experience ranking increases as a result of SEO implementation on a website (Zuze 2011). The main hurdle to implementing an effective SEO program is the fact that each search engine has its own requirements, which means that a website optimised for one search engine is not necessarily optimised for the others (Sen 2005).

Search engines also continuously change search engine ranking algorithms in order to prevent search engine spamdexing. Due to this factor, websites need to be constantly updating their SEO strategy, which can become costly.

SEO also has advantages, the biggest being that SEO listings occupy the main area of a search engines result page, and thus search engine users cannot easily ignore them (Neethling 2008).

The author has found no empirical evidence containing guidelines for online marketers to maximise traffic to their website by employing both PPC and SEO campaigns simultaneously.

At the same time the literature review never provided clarity on how website owners generally split their budget between natural and paid results. The objective of this research was thus to consider those who have invested in PPC, and determine whether or not they also invest in increasing rankings in natural results.

3.5 LITERATURE REVIEW

More than a decade and a half ago it was already claimed that the growth of the Web has given rise to a wide collection of new information sources, which resulted in users being faced with the daunting task of determining which sources are valid and which not (Abels et al. 1997).

Most users rely on the Web due to the low cost of information retrieval, as opposed to the expense of having to buy a book or make use of a library. Other advantages of the Web include the convenience in terms of time and access, as well as the ability to easily record results.

According to Green (2000) the Web is not just about promoting one's work, but is also about the interactive exchange of information, which has now evolved into a powerful business tool.

The Web is attracting businesses in their thousands, with the main application areas being:

- publicity,
- marketing and advertising,
- direct online selling,
- research and development and
- communication and collaboration.

This highlights the importance of ensuring that a website is visible to search engines.

3.5.1 Search Engines

Search engines are programs that offer interaction with the Web through a front end, where the user can type in a search term, or make successive selections of relevant directories. The search engine software then compares the search term against an index file, which contains information about countless websites.

Matches found are returned to the user via the front end. The index is updated regularly either by human editors or by automated programs (called spiders, robots or crawlers) (Weideman 2005).

Green (2000) provides a very basic definition of a search engine: 'A database that contains massive amounts of data about websites.' Kritzinger and Weideman (2005) further stated that search engines provide the average Web user with a mostly free, relatively easy way to find general information on the Web.

Search engines are the primary searching tools used for information retrieval on the Web (Spink and Xu 2000). Thelwall (2001) estimates that around 80% of users utilise search engines to search for information on the Web.

This highlights the fundamental importance of web pages being listed with search engines. An important strategy for any website owner is planning how visitors can find their way to their particular website (Thelwall 2001).

According to Flosi (2011) the search engine companies that generate the most searches on the Web are Google, Yahoo!, MSN, Ask and AOL (see Figure 3.1).

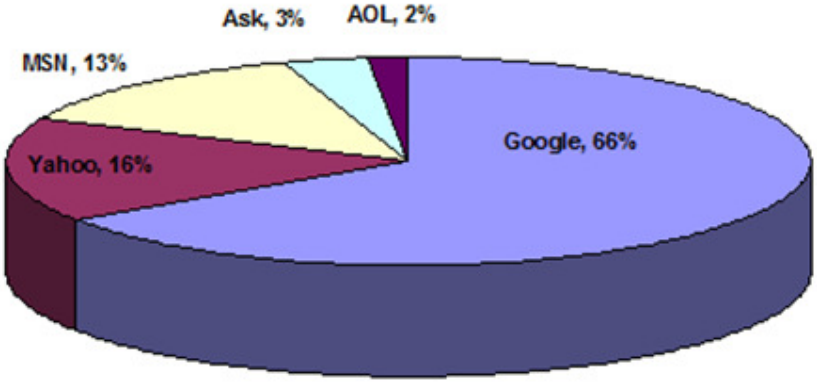

Figure 3.1: Percentage of searches done (Flosi 2011)

The data was taken from the ComScore Media Metrix qSearch service which measures search-specific traffic on the Web. Data is gathered by monitoring the Web activities in the USA (Flosi 2011). Each of the search engine companies listed in Figure 3.1 consists of

different sites whose results were combined into one overall figure for the company's entire network. For example:

Google:	Produces results from any Google-owned website such as google.com or Google Image Search.
Yahoo!:	Produces results from any Yahoo!-owned website including those of AltaVista, AllTheWeb and Overture.
MSN:	Produces results from any MSN-operated website such as the search engine Bing.
AOL:	Produces results from any Time Warner-owned website, including AOL Search and Netscape Search.
Ask:	Produces results from Ask and any site within the Ask-owned Excite Network, including Excite, iWon, MyWay.com and My Web Search.

Search engines have been praised because of their ability to quickly locate a vast array of information on an extraordinary range of topics. Despite this fact, they have fallen victim to criticism as well. Many users feel that search engines tend to retrieve irrelevant information which does not satisfy their information needs (Mukhopadhyay et al. 2007).

In addition, they have been criticised for the tendency to retrieve duplicates. In view of the fact that there are many different types of search engines, the issue surfaces of what ranking criteria they use to decide which websites are good enough to be included in their database. Each has its own rules for searching and of establishing which websites to include in their database (Mukhopadhyay et al 2007).

3.5.2 Search Engine Marketing

The term SEM was proposed by Sullivan (2001a) to cover a variety of activities involved in performing SEO, managing PPC listings, submitting websites to directories, and developing online marketing strategies for businesses, organisations, and individuals. In 2010 Sullivan defined SEM as a form of Web marketing that seeks to promote websites by increasing their visibility in SERPs. Methods include SEO, PPC, contextual advertising, digital asset optimisation, and paid inclusion (PI) (Sullivan 2010).

Furthermore, Curran (2004) claimed that:

> 'Some companies are budgeting enough for payment to search engines and they have to. Deciding not to, is a bit like launching a media campaign and deciding to ignore one whole media, like TV`.

SEM revenues increased from $4 billion to $5.75 billion in 2005 (US and Canada), a 44% increase over 2004 (SEMPO 2006). It was predicted that search spending will increase to $11 billion by 2010 (Clay 2006b).

PI is a SEM strategy which ensures inclusion in a search engine's index normally in exchange for a once off payment (Sullivan 2001b). PI will furthermore ensure that changes made to a website will be updated in the search engine index more quickly, as websites using PI will be visited more regularly.

However, PI also varies from one search engine to the next. Some search engines like Yahoo! offer a PI service for payment, whereas others, for example Google, do not (Neethling 2008).

However, PI cannot guarantee high rankings in search results. In fact, PI does not even guarantee placement in search engine results (Sullivan 2001b), although websites that do invest this way are likely to receive more traffic than websites that do not. This is due to the fact that websites can wait for weeks or even months for a search engine crawler to index their website, whereas websites using PI may see results within days (Zuze 2011).

Two types of marketing activities can be performed through search engines in an e-commerce setting, according to Dou, Lim, Su, Zhou & Cui (2010). First, companies pay to have links to their websites displayed in the sponsored section of a search engine results page. This is referred to as PPC.

Secondly, using SEO, companies strive to push the ranking of their websites higher in the organic results of search engines through the implementation of a variety of techniques. In this case, no payment is made to search engines. To ensure top rankings, a website owner could invest in either one or both of the two SEM strategies (Neethling 2008).

3.5.3 Pay Per Click

PPC was designed as a method of creating revenue for search engines. Over the past 15 years, users have become accustomed to search engines offering free services for which they are not prepared to pay (Moxley et al. 2004; Henshaw 2001).

Search engines go through a number of steps to review, index and generate listings. Although there are a number of ways to complete these steps, all of them are costly (Wittenberg 2004).

PPC or Pay for Placement (PFP) is used to describe a number of overlapping practices, which in essence refer to linking individual websites to specific keywords for payment (Moxley et al. 2004). As a result, potential clients can immediately be taken to a website, by selecting keywords that their specific target market will use in a search (Curran 2004).

It is also important for a webmaster to research the possible keywords that may be used in a search for their specific product or service (Curran 2004). PPC could become costly as advertisers are locked in an ongoing competition for popular keywords (Sullivan 2003). As PPC suggests, advertisers also have to pay for every click they receive via that sponsored link (Jansen and Schuster 2011).

As mentioned above, search engines need some sort of income to cover expenses, and if the user is not willing to pay for basic search results, they have to look elsewhere for income. As a result, search engines take advantage of advertisers' need to be visible and visited.

Having the advantage of creating the largest amount of Web traffic and of generating ranking results, they offer services which appeal to the advertiser. Specifically they address these advertisers' eagerness for more visibility, enthusiasm for being placed on the first page of returned search results and impatience for waiting to be reviewed and indexed (Thelwall 2001).

Most search engines offer PPC services in order to generate revenue (Neethling 2008). Google manages Google AdWords, Yahoo! has Yahoo! Search Marketing, while Bing runs Microsoft AdCentre.

Companies can place bids for search terms at their preferred PPC search engine. When a user now enters this search term, the search engine will display the companies' website links in a given order that equals their rank for that specific term.

The ranking sequence is determined by the customer bid price times the (Google) quality score for that page. The bid represents the amount of money the company is prepared to pay the search engine every time a user clicks on the link to its website on the SERP (Neethling 2008).

3.5.4 Search Engine Optimisation

The process of improving website visibility is referred to as SEO, which involves designing or modifying websites in order to improve SERP ranking (George 2005). SEO can also be described as the process of improving the volume and quality of traffic to a website from search engines via `natural` (`organic` or `algorithmic`) search results for targeted keywords (Anonymous 2008).

Usually, the earlier a website is presented in the search results or the higher it `ranks`, the more searchers will visit that website. SEO can also target different kinds of search, including image search, local search, and industry-specific vertical search engines.

Within this context, according to Zhang and Dimitroff (2004):

> `Every Web publisher wants good web page visibility in search engine results so as to increase accessibility of their web pages. Unfortunately, many websites have poor visibility in search engine rankings or may not be listed at all due to various reasons`

There are many techniques available to achieve this goal, and many of them resulted from the way search engine algorithms operate. Firstly, the SEO professional will develop a list of keywords and/or phrases (Malaga 2008:148). The competitiveness of each term will also be determined, as well as how often each of the terms is used in search engines.

The second step is to get the website into the search engine index as quickly as possible. This can be achieved by manually submitting the URLs to the search engines for consideration (Weideman 2012).

During the third step the SEO professional will manipulate the on-page elements (such as meta-tags, page content and site navigation) to make the website more attractive to search engine crawlers (Malaga 2008:148).

The importance of ranking well in a SERP for queries on specific terms is undeniable according to Clay (2006a). Recent research on user behaviour shows that 91% of users will ultimately view results only within the first three pages (Weideman 2009).

However, 67% of searchers only look at the first page of the search results (Weideman 2009). All this means that if a website is not on the first SERP, only 1/3 of viewers will continue viewing other pages. If the website is not in the top 30, it has almost no chance of being read by a user (Clay 2006a).

Organic SEO is still the most popular form of SEM according to SEMPO's annual `State of search engine marketing` survey (Sherman 2007). Organic search listings outperform PPC listings three to one in click-through and are also known to achieve higher conversion rates (Clay 2006b).

Weideman (2009) used three academic SEO models namely the Binnedel-, Chambers- and Visser- models and combined them plus industry views to form the Weideman model. See Figure 3.2.

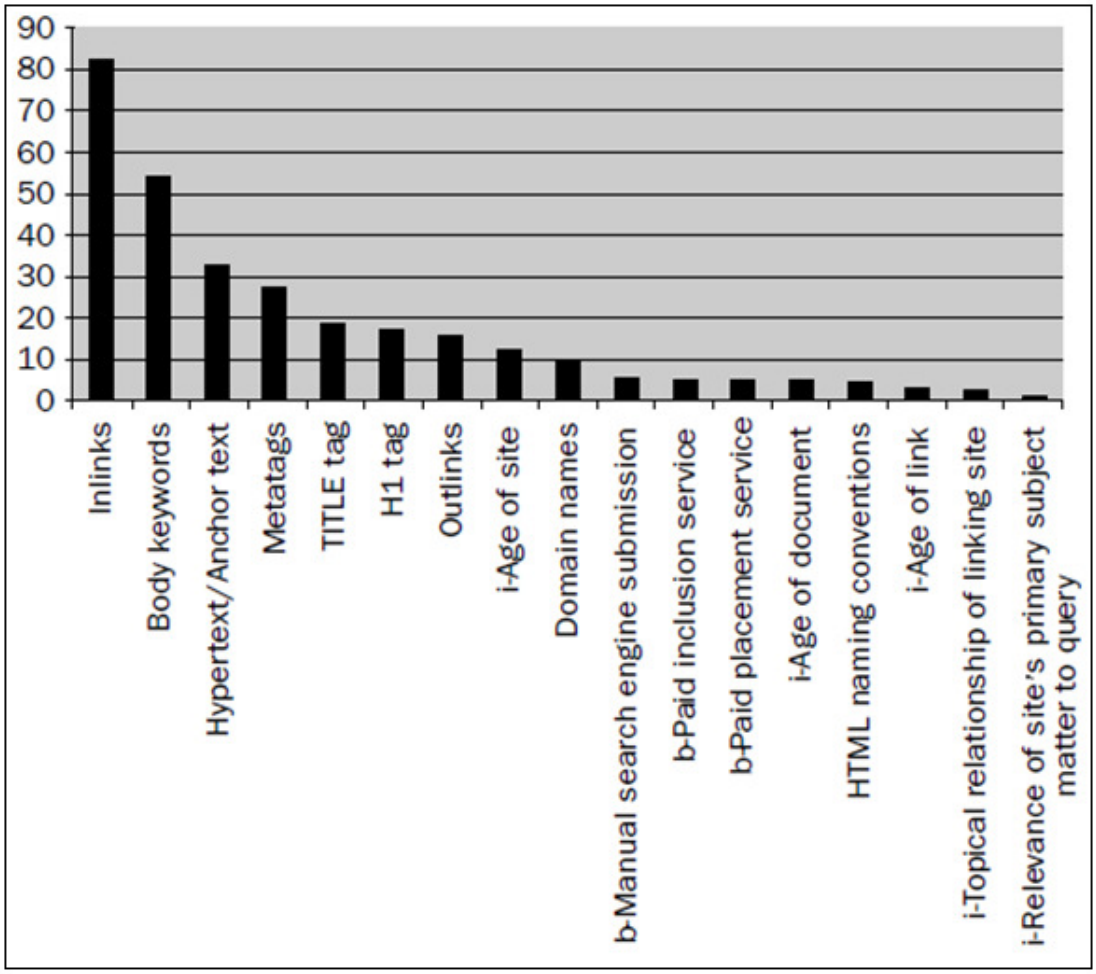

Figure 3.2: The Weideman model: relative magnitude of positive elements' scores (Weideman 2009)

This model ranks the elements that contribute to website visibility (both positive and negative) according to a scoring scheme based on the four contributing factors mentioned above.

3.5.5 Fat head, chunky middle and long tail

Popular search terms (those that have between 500 and 5000 searches per day) make up less than 30% of the overall searches performed on the Web (see Figure 3.3). The 18.5% of searchers with the highest occurrence is known as the fat head.

The next 11.5% is termed the chunky middle, while the rightmost 70% is called the long tail, made up from hundreds of millions of unique searches that might be performed on any given day (Anonymous 2011).

The long tail contributes to the majority of the world's demand for information through search engines. These search queries normally consist of four or more keywords per search phrase (Anonymous 2011).

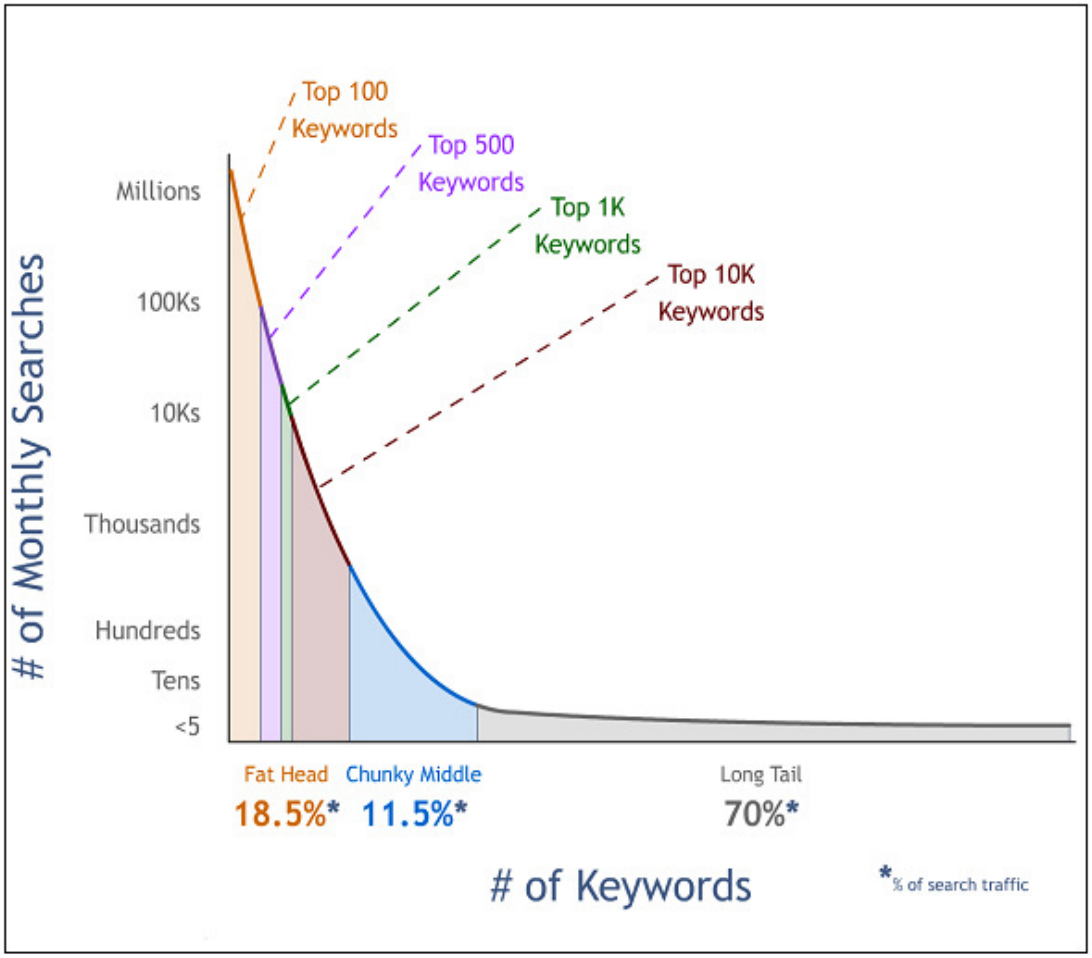

Figure 3.3: The Search Demand Curve (Anonymous 2011)

3.5.6 Dual Strategy SEM campaign

With increasing use of the Web as a marketing tool, business owners are trying to come to grips with new strategies to gain market share within the online environment. Many of these business owners are not well versed with Web marketing tactics. Because of this it is difficult to choose the best strategy for their business growth.

SEO is very seldom part of a SEM campaign, according to Sen (2005). Even when assuming that the implementation of SEO costs the same as investing in PPC, and the benefits include the assurance of always being part of a user's consideration set, SEO is still not the optimal SEM strategy for website marketers.

A possible explanation for this situation is provided by Sen. When the probability of being listed in the main results of a search engine is high, any investment in SEO is redundant - high ranking will most likely be achieved without it. On the other hand, there could be a low probability of ranking well in the organic results. In this case, users could visit the sponsored links for this website. Investing in PPC could therefore make economic sense (Sen 2005).

In addition, if it is assumed that SEO costs more than PPC (Jarboe 2005, as cited by Sen 2005), then PPC becomes much more attractive than SEO. Therefore, it should not be surprising that SEO is not a part of a company's SEM strategy.

This outcome is supported by the distribution of SEM dollars, which is biased toward PPC investments, and by the fact that the websites of fewer than 10% of the Fortune Magazine top 100 companies used SEO as part of their SEM strategy (Anonymous 2004, as cited by Sen 2005).

One of the major reasons for the quick adoption of the PPC strategy is that it is very similar to a traditional paid advertisement strategy and business owners can manage such campaigns on their own. SEO on the other hand, requires a pre-requisite set of skills to ensure your website reaches the top rankings on search engine search through various on-site optimisations and off-site organic SEO strategies (Waltzer 2008).

Another reason why businesses may prefer PPC is that they have better control over the entire program and they know exactly how and where their investment is spent. Results can easily be viewed through PPC campaign reports. They also do not have to change their tactics each time the search engines change their algorithms, which can prove to be a problem, especially for those who are only interested in quick, short term results.

Organic SEO might seem like too much effort, with no guaranteed results for short term goal seekers (Waltzer 2008).

Organic SEO as a Web marketing strategy requires patience, but the rewards are there. Organic optimisation is not the first choice for many (depending on the brand and business model), but it does have inherent benefits that are unparalleled by sponsored or paid advertising tactics. The benefits and results last for longer periods of time than for PPC (Waltzer 2008).

While a PPC campaign can deliver leads with relative ease, it can be a money drain and has no longevity - once the online marketer stop investing in PPC, the resulting website traffic disappears. SEO and link building require a lot more creative effort, but can have more sustainable results. It also allows a business to target a larger base of users, as most studies reveal that 75 - 80% of searchers click on organic listings as opposed to paid listings (Waltzer 2008).

In the past Web surfers did not understand the difference between sponsored and organic results. However, lately Web surfers are more Web literate, resulting in a growing number of users clicking on organic links on the first page of results. This is attributed to their argument that if a website makes it into the top ten without paying for it, it should be one of the best websites available to match the original search query (Waltzer 2008).

3.6 Research Objectives

Given the background as sketched above, it is clear that some contradictions exist in terms of spending on SEO and/or PPC for a given website. One author claimed that spending on SEO does not make financial sense, while others have proven that more users click on organic than on PPC results. The objective of this research project was

therefore to determine whether or not website owners who have invested in PPC, also invest in SEO.

3.7 Methodology

The research design used in this research article was an empirical field/natural experimental design. According to Mouton (2003), the definition of this kind of research design is:

'Studies that are usually quantitative in nature and which aim to provide a broad overview of a representative sample of a large population'.

For the purpose of this research the author has investigated only SEO and PPC. An experiment was conducted to test whether or not the website owners in the sample who invested in PPC marketing, also did so for SEO.

Thirteen industry categories were selected as defined in Google's directories. These categories are:

- Beauty & Personal Care
- Computers
- Consumer Electronics
- Family & Community
- Finance
- Food
- Gifts & Occasions
- Home & Garden
- Hobbies & Leisure
- Real Estate
- Sport & Fitness
- Travel & Tourism
- Vehicles

Next, a large number of experimental searches were done to gather data. Although only one set of results is noted and shown below (due to the large volume of results), the data

of all searches across all 13 categories was used in this study. Two search queries were generated for each of the 13 categories - one a fat head search phrase (short, wider and less focussed - the key-phrase consists of at most two keywords) and the other a long tail key-phrase (longer, more focussed and specific - the key-phrase consists of at least four keywords).

The fat head queries for each of the categories were then entered separately in Google. In each instance the 10 websites that invested in PPC were identified from the SERP results, and recorded.

A search was then performed to test whether or not these same websites also had an organic listing within the top 100 results for the fat head key-phrases. The results were recorded (result column A in Table 3.1).

After the fat head search queries were searched and recorded (both PPC and SEO results), the authors searched again, this time using the long tail key-phrases. The 10 websites that invested in PPC were recorded.

The authors then performed the search again with the long tail key-phrases to see if the 10 websites that invested in PPC had natural listings within the top 100 of the search results. Results were recorded (result column B in Table 3.1).

The authors then performed a cross check, meaning that the PPC websites that were generated by the fat head key-phrases were checked to see whether they have organic results for the long tail key-phrases. Results were recorded. Also, the authors then checked the PPC websites that were generated by the long tail key-phrases to see whether they have organic results for the fat head key-phrases. Results were recorded.

3.8 Results

Due to the large volume the recorded results occupy, an extract only is provided here. See Table 3.1 for an example of the results of two searches recorded for the Travel & Tourism category.

	Fat head search query: "cheap flights"			Long Tail Keyword: "cheap flights from cape town to durban"		
	PPC Results	A Fat Head SEO Results	B Long Tail SEO Results	PPC Results	B Long Tail SEO Results	A Fat Head SEO Results
1	www.flymango.com	N/A	27	www.flymango.com	27	N/A
2	www.travelstart.co.za	N/A	21	www.travelstart.co.za	21	N/A
3	www.sacheapflights.co.za	N/A	N/A	www.travelonline.co.za	N/A	N/A
4	www.virgin-atlantic.com/flights	N/A	N/A	www.britishairways.com/za	N/A	N/A
5	www.airfrance.com/london	N/A	N/A	www.kulula.com	51	N/A
6	www.britishairways.com	N/A	N/A	www.cheapflightstocapetown.co.za	N/A	N/A
7	www.lowfares.com/cheap-flights	87	N/A	www.pricecheck.co.za	11	N/A
8	www.kulula.com	N/A	51	www.qatarairways.com	N/A	N/A
9	www.bookflights-travel-sa.co.za	N/A	N/A	www.tripbase.com/durban-flights	15	N/A
10	www.flights.travelsupermarket.co.za	7	N/A	www.emirates.com/za	N/A	N/A

Table 3.1: Extract of results - Travel & Tourism

The websites were then tested to see if they had fat head and long tail keyword SEO results. There were originally 13 industry sectors. For each one, two key-phrases were defined, for a total of 26 key-phrases.

For each sector key-phrase the top 10 PPC results were recorded, yielding 260 PPC results. These 260 results were then checked to see if they had SEO listings for both fat head and long tail key-phrases in the top 100 search engine results.

Websites that had no SEO results were marked as 'N/A'. All the 'N/A' results were then removed from the result tables and a new table was compiled (see Table 3.2). The top half of Table 3.2 shows all the websites that had PPC results for fat head keywords.

These websites were then tested to see if they had SEO results for both fat head and long tail keywords. The second half of the table shows all the websites that had PPC results for long tail keywords.

SEO Results				
		Fat Head PPC	Fat Head	Long Tail
1	www.Oracle.com/Siebel/CRM	3	44	19
2	www.SAP.com/CRM	10	43	6
3	www.bidorbuy.co.za/babyroomfurniture	3	N/A	8
4	www.carinsurance.co.za/quotes	6	80	8
5	www.insurancejunction.co.za	7	N/A	21
6	www.johannesburg.gumtree.co.za	1	N/A	13
7	www.privateproperty.co.za/rentals	2	N/A	1
8	www.arkinflatables.com	1	98	N/A
9	www.seaeagle.com	2	3	N/A

SEO Results				
		Long Tail PPC	Fat Head	Long Tail
1	www.oracle.com/siebel/CRM	3	44	19
2	www.sap.com/crm	7	43	6
3	www.bidorbuy.co.za	1	N/A	8
4	www.firstforwomen.co.za	1	N/A	1
5	www.carinsurance.co.za/quotes	3	N/A	8
6	www.insurancehound.co.za	4	80	47
7	www.insurancejunction.co.za	6	N/A	21
8	www.floorsdirect.co.za/gauteng	1	87	1
9	www.privateproperty.co.za/johannes	2	N/A	1

Table 3.2: Results without N/A

3.9 Discussion

From Table 3.1, when a user searches for the keyword ‘cheap flights’, the website Flymango was listed in first place in the PPC results. However, Flymango had no SEO results for the same key-phrase. But when a user searches for ‘cheap flights from cape town to Durban’, the Flymango website earned a SEO position of 27 and a first place position in the PPC results.

When implementing a dual strategy, the website owner should be careful not to cannibalise his/her own budget. It could happen that users clicked through to the website via the PPC results (instead of from the free SEO result listing) with the consequence that the website owner must pay for that click.

From Table 3.2 it is clear that for all the websites with both PPC and SEO, the results were better for long tail key-phrases.

3.10 Conclusion

Results showed that very few of the websites that invested in PPC had organic listings within the top 100 for both fat head and long tail key-phrases This therefore confirms the statement by Sen (2005) that online marketers very seldom use SEO as part of a SEM campaign.

Even when assuming that the implementation of SEO costs the same as investing in PPC, and the benefits include the assurance of always being part of a user’s consideration set, SEO is still not the optimal SEM strategy for website marketers.

However, in a recent survey conducted on the website Search Engine Land a very different picture was portrayed (Sullivan 2011). Out of 254 respondents, 20 (7.9%) said that they only use PPC, while 93 (36.6%) said that they only use SEO. The remaining 141 (55.5%) said they use both SEO and PPC. This seems to point to a contradiction on the respective popularities of SEO and PPC. However, this survey conducted by Sullivan (2011) was hosted on the Search Engine Land website, with readership consisting mainly of SEM practitioners who understand the importance of both SEO and PPC.

Given that the audience of Search Engine Land is mainly SEM practitioners and not necessarily Marketing Managers of companies, it would then support the comments made by Waltzer (2008). One of the major reasons for the quick adoption of the PPC strategy is that it is very similar to traditional paid advertising strategies and business owners or Marketing Managers can manage such campaigns on their own.

Many of the companies that invest in PPC do not necessary have the skill/training to implement SEO on their own. They will have to outsource this to SEM companies to do this on their behalf. Some website owners have heard of SEO before but do not know what it is or what benefits it could have for their websites. Until they do, the logical way for them to get traffic to their website quickly and effectively will remain traditional advertising methods like radio, newspaper, fliers and brochures, but also PPC.

This study contributes to the existing body of knowledge in the field of SEM by proving that SEM expenditure in an unbalanced way seems to be the norm. It then confirmed that both SEO and PPC are required for maximum website exposure.

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3.13 SUMMARY

It was found that website owners seldom invest in SEO as part of a SEM campaign. This seemed to confirm some of the findings by other authors. Only SEO and PPC were evaluated, as they are the most used SEM techniques. The thirteen industry categories chosen for this research article was defined by Google's directory service for eCommerce websites. Unfortunately, Google has since closed down this service in July 2011 (see Figure 3.4).

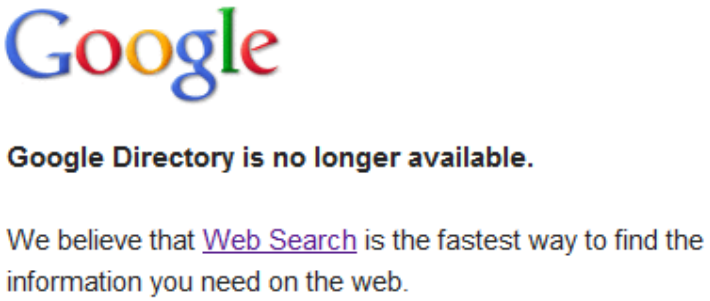

Figure 3.4: Google Directory is no longer available.

The author examined the top 10 results from the sponsored section and the top 100 results from the organic results. These were the cut off points chosen due to the time constraints it would have taken to manually examine 130 sponsored results and 1300 organic results (13 industries times the top 10 sponsored results and 13 industries times the top 100 organic results). Due to the large volume the recorded results occupy, an extract only was provided within the research article, since the author was obliged to keep within the Journal's guidelines. Table 3.3 contains the full set of results.

	FAT HEAD (A)			LONG TAIL (B)		
	Beauty & Personal Care					
	hair extensions	A	B	**hair extensions before and after**	B	A
	PPC Results	**SEO Results**	**SEO Results**	**PPC Results**	**SEO Results**	**SEO Results**
1	www.greatlengths.co.za	N/A	N/A	www.aquacleanse.co.za	N/A	N/A
2	www.divadivinehair.co.za	N/A	N/A	www.divadivinehair.co.za	N/A	N/A
3	www.aquacleanse.co.za	N/A	N/A	www.bidorbuy.co.za/hair-extensions	N/A	N/A
4	www.hairextensions.co.za	N/A	N/A	http://sorbet.co.za/hair-extensions	N/A	N/A
5	www.makeoverstudio.co.za	N/A	N/A	www.hairextensions.co.za	N/A	N/A
6	http://sorbet.co.za/hair-extensions	N/A	N/A	www.illustrioushair.co.za	N/A	N/A
7	www.bidorbuy/hair-extensions	N/A	N/A	http://dhgate.com	N/A	N/A
8	www.advancenailtechnology.co.za	N/A	N/A	http://hairextensions.tohair.com	N/A	N/A
9	www.betesdahealthclinic.co.za	N/A	N/A	http://b2b.sulekha.com	N/A	N/A
10	www.illustrioushair.co.za	N/A	N/A	www.ultihs.com	N/A	N/A
	Computers					
	cheap internet	A	B	**cheap internet service providers**	B	A
	PPC Results	**SEO Results**	**SEO Results**	**PPC Results**	**SEO Results**	**SEO Results**
1	www.iburst.co.za/ibwireless	N/A	N/A	http://broadband.vox.co.za	N/A	N/A
2	http://broadband.vox.co.za	N/A	N/A	www.vodacom.co.za/nightowl	N/A	N/A
3	www.vodacom.co.za/nightowl	N/A	N/A	http://mweb.co.za/mwebbusiness	N/A	N/A
4	www.b2e.co.za	N/A	N/A	www.techconcepts.co.za	N/A	N/A
5	www.telkom.co.za/broadband	N/A	N/A	www.imaginet.co.za	N/A	N/A
6	www.gam.co.za	N/A	N/A	www.mtnbusiness.co.za	N/A	N/A
7	www.vodacombusiness.co.za	N/A	N/A	www.vodacombusiness.co.za	N/A	N/A
8	http://mweb.co.za/mwebbusiness	N/A	N/A	www.telkom.co.za/broadband	N/A	N/A
9	www.vanilla.co.za	N/A	N/A	www.vanilla.co.za	N/A	N/A
10	www.redbutton.co.za	N/A	N/A	www.iconnection.co.za	N/A	N/A
	Consumer Electronics					
	crm software	A	B	**customer relationship management software**	B	A
	PPC Results	**SEO Results**	**SEO Results**	**PPC Results**	**SEO Results**	**SEO Results**
1	http://CRM.Zoho.Com/CRMSoftware	N/A	N/A	www.thirdwave.co.za	N/A	N/A
2	www.Thirdwave.co.za	N/A	N/A	http://mweb.co.za/mwebbusiness	N/A	N/A
3	www.Oracle.com/SiebelCRM	44	19	www.oracle.com/siebelCRM	19	44
4	www.erp-india.org	N/A	N/A	www.aps-advance.com	N/A	N/A
5	http://MWEB.co.za/MWEBBusiness	N/A	N/A	http://southafrica.smetoolkit.org	N/A	N/A
6	www.CommitCRM.com	N/A	N/A	www.salesimpel.com	N/A	N/A
7	www.ittechno.co.za	N/A	N/A	www.sap.com/crm	6	44
8	http://infoathand.com	N/A	N/A	www.computerease.ca	N/A	N/A
9	www.awareim.com	N/A	N/A	www.fnb.co.za	N/A	N/A
10	www.SAP.com/CRM	44	6	www.ittechno.co.za	N/A	N/A
	Family & Community					
	baby furniture	A	B	**baby room furniture for sale**	B	A
	PPC Results	**SEO Results**	**SEO Results**	**PPC Results**	**SEO Results**	**SEO Results**
1	http://liquorish.co.za/baby	N/A	N/A	www.bidorbuy.co.za	8	N/A
2	www.babyandcompany.co.za	N/A	N/A	www.budgetbeds.co.za	N/A	N/A
3	www.bidorbuy.co.za//babyroomfurnitur	N/A	8	http://furniture-warehouse.co.za	N/A	N/A
4	http://furniture-warehouse.co.za	N/A	N/A	http://za.ask.com	N/A	N/A
5	www.builtny.co.za	N/A	N/A	http://johannesburg.gumtree.co.za	N/A	N/A
6	http://sites.google.com/site/bedfor	N/A	N/A	www.builtny.co.za	N/A	N/A
7	www.thissideup.co.za/kids-bedrooms	N/A	N/A	www.bedroombizness.co.za/furniture	N/A	N/A
8	www.waku.co.za	N/A	N/A	www.furniture-design.co.za	N/A	N/A
9	http://johannesburg.gumtree.co.za	N/A	N/A	www.southafrica.ask.com	N/A	N/A
10	www.oosthuizentraders.com	N/A	N/A	http://peeplo.com/baby+furniture+discount	N/A	N/A
	Finance					
	car insurance	A	B	**first for women car insurance quotes**	B	A
	PPC Results	**SEO Results**	**SEO Results**	**PPC Results**	**SEO Results**	**SEO Results**
1	www.outsurance.co.za/car-insurance	N/A	N/A	www.firstforwomen.co.za	1	N/A
2	www.absa.co.za	N/A	N/A	www.youinsure.co.za/1st_for_women	N/A	N/A
3	www.dialdirect.co.za/car_insurance	N/A	N/A	http://carinsurance.co.za/quotes	8	N/A
4	www.aainsured.co.za	N/A	N/A	www.insurancehound.co.za	47	80
5	www.oldmutual.co.za/car-insurance	N/A	N/A	www.oldmutual.co.za/car-insurance	N/A	N/A
6	http://carinsurance.co.za/quotes	80	8	www.insurancejunction.co.za	21	N/A
7	www.insurancejunction.co.za	N/A	21	www.get-insured.co.za	N/A	N/A
8	www.autogen.co.za	N/A	N/A	www.quotebee.co.za/car-insurance	N/A	N/A
9	www.quotebee.co.za/car-insurance	N/A	N/A	www.absa.co.za	N/A	N/A
10	www.insuranceatwoolworths.co.za	N/A	N/A	www.outsurance.co.za	N/A	N/A
	Gifts & Occasions					
	online competitions	A	B	**online competitions and free gift hampers**	B	A
	PPC Results	**SEO Results**	**SEO Results**	**PPC Results**	**SEO Results**	**SEO Results**
1	www.lqchatterville.co.za	N/A	N/A	www.lqchatterville.co.za	N/A	N/A
2	http://standardbank.co.za/mycard	N/A	N/A	http://standardbank.co.za/mycard	N/A	N/A
3	www.take2.co.za	N/A	N/A	www.sweepstakesaddict.com	N/A	N/A
4	www.mellerware.co.za	N/A	N/A	www.bizfax.co.za/free_safari	N/A	N/A
5	www.bizfax.co.za/free_safari	N/A	N/A	www.mellerware.co.za	N/A	N/A
6	http://southafrica.ask.com	N/A	N/A	http://southafrica.ask.com	N/A	N/A
7	www.hamper.com	N/A	N/A	www.studentcompetitions.com	N/A	N/A
8	http://ask.com	N/A	N/A	www.megastuff.co.za	N/A	N/A

	Home & Garden					
	wooden flooring	A	B	wooden flooring suppliers in south africa	B	A
	PPC Results	SEO Results	SEO Results	PPC Results	SEO Results	SEO Results
1	http://woodenfloorspecialists.co.za/floor	N/A	N/A	http://floorsdirect.co.za/gauteng	1	87
2	www.affordableblinds.co.za	N/A	N/A	www.flooringdepot.co.za	N/A	N/A
3	www.constantiacarpets.co.za	N/A	N/A	www.hktdc.com	N/A	N/A
4	www.saquotes.co.za/laminateflooring	N/A	N/A	www.saquotes.co.za/laminateflooring	N/A	N/A
5	http://dust-freefloorsanding.co.za	N/A	N/A	www.pioneerfloorheating.co.za	N/A	N/A
6	www.safarifloors.co.za	N/A	N/A	www.floordom.co.za	N/A	N/A
7	www.dustless-floor-sanding.co.za	N/A	N/A	www.bambooindustries.co.za	N/A	N/A
8	www.bambooindustries.co.za	N/A	N/A	http://dust-freefloorsanding.co.za	N/A	N/A
9	www.floordom.co.za	N/A	N/A	www.affordableblinds.co.za	N/A	N/A
10	www.pentafloor.co.za	N/A	N/A	www.safarifloors.co.za	N/A	N/A
	Real Estate					
	rental accommodation	A	B	flats to rent in johannesburg CBD	B	A
	PPC Results	SEO Results	SEO Results	PPC Results	SEO Results	SEO Results
1	http://johannesburg.gumtree.co.za	N/A	13	www.signaturesuites.co.za	N/A	N/A
2	www.privateproperty.co.za/rentals	N/A	1	http://privateproperty.co.za/johannesburg	1	N/A
3	www.wix.com/thecellar/honeywood3	N/A	N/A	www.urbanrealestate.co.za	N/A	N/A
4	http://beachholidayhomes.co.za	N/A	N/A	http://travelground.com/johannesburg-cbd	N/A	N/A
5	www.blizzardskiing.com	N/A	N/A	www.propertygenie.co.za	76	N/A
6	http://holidaylettings.co.uk/gers	N/A	N/A	www.gumtree.co.za	16	N/A
7	http://ask.com	N/A	N/A	http://peeplo.com/top_results	N/A	N/A
8	www.lessor.co.za	N/A	N/A			
9	http://peeplo.com/top_results	N/A	N/A			
	Hobbies & Leisure					
	inflatable boats	A	B	inflatable boats for white river rafting	B	A
	PPC Results	SEO Results	SEO Results	PPC Results	SEO Results	SEO Results
1	www.arkinflatables.com	98	N/A	www.parysriverrafting.co.za	N/A	N/A
2	http://seaeagle.com	3	N/A	www.giantinflatables.co.za	N/A	N/A
3	www.marinewholesale.com	N/A	N/A	www.stingraymarine.co.za	N/A	N/A
4	www.porta-bote.com	N/A	N/A	http://comaxmarine.com	N/A	N/A
5	www.stingraymarine.co.za	N/A	N/A	www.arkinflatables.com	N/A	98
6	http://made-in-china.com/inflatable_canoe	N/A	N/A	http://seaeagle.com	N/A	3
7	www.nautiline.com	N/A	N/A	www.friendinflatable.com	N/A	N/A
8	www.leisuremarine.za.com	N/A	N/A	www.nrsweb.com	N/A	N/A
9	www.inflatable-boats.com.cn	N/A	N/A	www.nauticexpo.com	65	N/A
10				www.inflatable-boats.com.cn	N/A	N/A
	Travel & Tourism					
	cheap flights	A	B	cheap flights from cape town to durban	B	A
	PPC Results	SEO Results	SEO Results	PPC Results	SEO Results	SEO Results
1	www.flymango.com	N/A	27	www.flymango.com	27	N/A
2	www.travelstart.co.za	N/A	21	www.travelstart.co.za	21	N/A
3	http://www.sacheapflights.co.za	N/A	N/A	www.travelonline.co.za	N/A	N/A
4	www.virgin-atlantic.com/flights	N/A	N/A	www.britishairways.com/za	N/A	N/A
5	www.airfrance.com/london	N/A	N/A	http://kulula.com	51	N/A
6	www.britishairways.com	N/A	N/A	http://cheapflightstocapetown.co.za	N/A	N/A
7	http://lowfares.com/cheap-flights	87	N/A	www.pricecheck.co.za	11	N/A
8	http://kulula.com	N/A	51	http://qatarairways.com	N/A	N/A
9	www.bookflights-travel-sa.co.za	N/A	N/A	www.tripbase.com/durban-flights	15	N/A
10	http://flights.travelsupermarket.co.za	7	N/A	http://emirates.com/za	N/A	N/A
	Vehicles					
	4x4 hire	A	B	4x4 hire for namibia sand dunes	B	A
	PPC Results	SEO Results	SEO Results	PPC Results	SEO Results	SEO Results
1	http://kea.co.za/4x4_hire	N/A	N/A	http://kea.co.za/4x4_hire	N/A	N/A
2	www.ivory4x4hire.co.za	N/A	43	http://drivesouthafrica.co.za/4x4_rental	28	26
3	http://drivesouthafrica.co.za/4x4_hire	26	28	www.desert-carhire.com	N/A	N/A
4	http://dollar.co.za/car_rental	N/A	N/A	www.ivory4x4hire.co.za	43	N/A
5	www.capespirit.com	N/A	N/A	www.capespirit.com	N/A	N/A
6	http://europcar.co.za	N/A	N/A	www.vaalcarhire.co.za	N/A	N/A
7	www.bushlore.com	10	N/A	www.southafrica.to	N/A	59
8	www.thrifty.co.za	N/A	6	www.world-wide-wheels.com/namibia	N/A	N/A
9	www.offroadafrica.com	4	N/A	http://namibiahotels.net	N/A	N/A
10	www.traveljigsaw.co.za	N/A	N/A	www.offroadafrica.com	N/A	4

Table 3.3: Industry Results

Possible future research could include investigating other search engines' PPC systems - Bing or Yahoo!, for example.

This research has important implications for SEO and PPC practitioners, and for website owners. It should influence the way budgets on SEM are applied. Finally, it could be used by marketing managers in better utilising their limited budgets. No evidence could be found that this kind of empirical research has been done, hence the results are considered to be unique.

CHAPTER 4
JOURNAL ARTICLE TWO

4.1 JOURNAL ARTICLE TWO

This research set out to determine how the results of the implementation of a pay-per-click campaign compared to those of a search engine campaign, given the same website and environment. At the same time, the expenses incurred on both these marketing methods were recorded and compared.

See Appendix B for the first page of the journal article as it was actually published.

4.2 TITLE

Comparative case study on website traffic generated by search engine optimisation and a pay per click campaign, versus marketing expenditure.

4.3 ABSTRACT

***Background**: No empirical work was found on how marketing expenses compare when used solely for either the one or the other of the two main types of search engine marketing.*

***Objectives**: This research set out to determine how the results of the implementation of a pay-per-click campaign compared to those of a search engine campaign, given the same website and environment. At the same time, the expenses incurred on both these marketing methods were recorded and compared.*

***Method**: The active website of an existing, successful e-commerce concern was used as platform. The company has been using pay-per-click only for a period, while traffic has been monitored. This system was de-commissioned at a given point, and the alternative search engine optimisation system was started at the same time. Again both traffic and expenses were monitored.*

***Results**: The results indicate that the pay-per-click system did produce favourable results, but on the condition that a monthly fee has to be set aside to guarantee consistent traffic. The implementation of search engine optimisation required a relatively large investment at the outset, but it was once-off. After a drop in traffic due to crawler visitation delays, the website traffic bypassed the average figure achieved during the pay-per-click period after a little over three months, while the expenditure crossed over aver just over six months.*

***Conclusion**: While considering the specific parameters of this study, an investment in search engine optimisation rather than a pay-per-click campaign appears to produce better results at a lower cost, after a given period of time.*

4.4 INTRODUCTION

The growth of the Internet has produced an important information resource during the last two decades, advancing at a much faster rate than was previously envisaged. It took seven years to reach a 25% international market share - 70% faster than the development of the radio and 80% faster than the development of the telephone. This growth makes the Internet the fastest growing technology the world has ever encountered (Singh, 2002). Boyes et al. (2004: 191) support this trend by claiming that the Internet had acquired 50 million global users in five years as opposed to the 38 years it took for radio and 13 years for television.

The implementation of the World Wide Web (WWW) has seen the world confronted with the concept of a website. Websites act as connection and communication points between the user and digital information. Therefore, most corporations (according to Akakandelwa (2011)), organisations or institutions have been making efforts to launch themselves into the virtual world using this modern platform.

The WWW is more than two decades old and, due to its complexity, its size is impossible to measure in terms of number of websites or servers. It is claimed that for January 2014 the nine most popular websites in the USA drew between 100 million and 370 million visitors each (Nielsen, 2014). The WWW is a decentralised environment constructed and controlled by various people and entrance to it is less restricted than entrance to the common information media (Brunn, 2001).

The base of Internet users is massive; hence there is much interest in leveraging this user base for commercial gain. This commercial gain could be realised by ensuring that many thousands of users view a given website daily, with some of them being converted from browsers to buyers. It is generally accepted that the two types of interventions which could be implemented to increase the traffic to a website are search engine optimisation (SEO) and a paid campaign. However, no research could be found which compares the expenditure in a controlled environment with the value received from that expenditure, for these two approaches. It is against this background that this study has emanated.

The research problem on which this project was based, is the fact that the respective value of the two marketing methods have not been directly compared, leading to resources being wasted on marketing. The purpose of this study was to compare these two categories, to see how they produce traffic over a period of time, and offset it against the expenditure.

4.5 LITERATURE REVIEW

4.5.1 Search Engines

According to Green (2000), a search engine is a search service that uses retrieval software called crawlers that examine websites and then index them into a database of website listings according to their relevancy. Search engines use their own indexing software and strategies to continuously traverse the Web, searching for the most up-to-date content possible.

The indexing software (also referred to as spiders or bots) is responsible for visiting web pages following links between pages. The pages found are then analysed and parts are copied back to the site running the indexing software and added to the database for the purpose of including them in the search engine results (Weideman, 2009).

Even though search engines use different algorithms to rank a web page, they operate on similar principles. All search engines primarily strive to retrieve and display relevant results (web pages) which contain words or terms that match the user's search query (Green, 2000; Guenther, 2004: 47).

Oppenheim *et al*. (2000: 191) are of the opinion that although search engines search a vast amount of information at impressive speeds, they are criticised on issues such as the retrieval of duplicate and irrelevant records due to spamming techniques. The sheer mass of these irrelevant results is one of the main user complaints against search engines.

Much research has been done recently on search engines, the way they operate, the way users generate queries and the way they affect our lives. Moreno *et al.* (2013) indicated that web pages can be designed to be both SEO and human friendly. This was confirmed by another study on the effect of usability elements on the way search engine crawlers view websites (Visser *et al.,* 2011).

In summary, the availability and use of search engines affect our lives on a regular basis through user interaction with results produced by them. It has become a given that the use of search engines, together with the power of advertising, play a role in our daily decisions on various aspects - not limited to purchasing only.

4.5.2 Search Engine Marketing

Search engine marketing (SEM) is a strategy that makes use of the power of search engines to potentially attract millions of views per day to websites. Even academic universities need to consider how they should market themselves to prospective students, since they are the paying clients (Weideman, 2013). Crowley (2014) discusses some of these strategies, including SEO and tracking analytics to determine user behaviour. SEO and pay-per-click schemes (PPC) are generally considered to be the two main categories of SEM, and these two will be investigated further.

4.5.3 Pay Per Click

PPC schemes, producing non-natural rankings, are systems which display advertisements on a search result screen, co-located with organic results, but ranked separately. The location of these advertisements is normally to the right and above the organic search engine listings (Chen *et al*, 2011). This sharing of the prime real estate space on the user's screen has caused some problems for users. No longer can they simply evaluate the quality of answers based on which answer is listed the highest on the result screen - they have to consider the ranking difference between organic and paid results as well.

Even libraries have found this to be an obstacle for their users (Moxley *et al*, 2004). However, many industries, particularly the tourism sector, have been making extensive use of this marketing opportunity. In some cases, even small businesses went to extremes to do research to identify the better search engine PPC scheme to use (Kennedy *et al*, 2008). At the same time, the 'newness' of this form of marketing initially scared off other smaller businesses, as some smaller hotels did not make use of PPC (Murphy *et al*, 2008).

PPC, as the name suggests, charges the advertiser the bid amount every time an Internet user clicks on an advertisement. The keywords all have different competition ratings and the more popular a keyword, the higher the cost per click would be (Chen *et al*, 2011).

The PPC ranking system operates in stark contrast to the value associated with the quantity and quality of in-links, in other words SEO (Thelwall, 2001). In the past, Google specifically used a simple formula to determine the ranking of PPC results: Rank = Bid price X Quality Score (Sagin, 2013).

The bid price is the amount the advertisement owner is prepared to pay per user click on the ad, and the quality score is Google's interpretation of the quality of the landing page. However, in October 2013 Google announced a third factor namely advertisement (ad) extensions (Mancuso, 2013). Where two competing advertisements achieve an equal score, the use of ad extensions is used to determine the highest ranker.

A recent study was done on the relationship between print and search engine advertising (Olbrich *et al*., 2014). The results proved that print advertising did not directly affect the number of advertisements impressions produced by the search engine. However, there was an indirect relationship between print advertising and the number of conversions, indicating that e-commerce marketers cannot ignore the traditional advertising methods and focus only on SEM.

Since exposure through PPC requires constant and cumulative expenditure, past research has also focused on maximising this expense. The performance of PPC advertisements is crucial in recapping the expense, hopefully bypassing it to provide a profit. Another recent study determined the role of ranking of these advertisements, branding and the role of the device used to search (Gupta *et al*., 2014).

In summary, PPC has been a successful business model - in the case of Google, it has produced the bulk of its profits over the years, playing a major role in its financial success (Kumar *et al.*, 2007). At the same time, an e-commerce business running PPC schemes on multiple keywords across many campaigns are advised to budget for specialised staff to manage these campaigns. Still, some authors actually prescribe that PPC is a better way to spend marketing dollars than SEO (Sen, 2005).

4.5.4 Search Engine Optimisation

SEO is a method that uses data observation and marketing research to identify the most suitable keyword for a website (Malaga, 2010). However, it requires a base of knowledge to implement, such as how to choose keywords, how to use keywords in order to enhance a website's ranking, etc.

The need for any e-commerce business to be ranked highly with search engines is a given (Kent, 2008). Another author states that to increase the volume of traffic to individual websites from search engines, SEO must be considered and invested in (Kisiel, 2010). For successful SEO there are many concepts that need to be understood and applied - some of these are discussed later. The ultimate goal of SEO is to increase a website's ranking with search engines, thus increasing the traffic to the website, which should result in increased sales (Lee, 2010; Lee *et al.*, 2010; Lee *et al.* 2011).

Lately, much research has been done on the visibility of content to search engine crawlers. Onaifo *et al.* (2013) found that the principles of SEO can and should be applied to increase the visibility of library content to search engines. A number of elements affect SEO - it is not just a case of implementing a simple set of rules, thereby ensuring high visibility. Some of these elements are listed below.

Another recent study considered the value of using search query data to obtain business information. Search query data is much more recent than, for example, business reports published at the end of a financial year. A significant correlation was found between business performance and position, and search query data (Vaughan, 2014). This kind of timely information could be used to predict business performance, leading to financial gains.

It is clear that both SEO and PPC could play a role in marketing a website to the search engine crawlers. The purpose of this study was to determine how much traffic each of SEO and PPC produces, and to measure and compare the expenditure in each case.

Some of the aspects of SEO are considered below. They are all discussed in terms of components of a web page over which the website owner has direct control.

4.5.4.1 Header tags

Meta-tags are elements of a web page which are mostly optional, invisible to the casual browser, but which could affect the way a crawler views a web page. One of these is the H (Heading) meta-tag

A Web designer can choose whether or not to highlight headings inside a block of text on a web page. To this effect, there are six levels of heading tags. H1 is the most important (biggest text); H2 is slightly less important, down to H6 which is the least important. Some search engines recognise the use of header tags as a safe method to weight keywords, due to its connection with a heading of a paragraph.

Henzinger *et al*. (2002: 9) states that the higher the importance of the headings, the more weight a search engine could assign to a given web page. For example, text in an <H1> would appear prominently on a web page and therefore some search engines could see it as safe to weigh the text in that heading highly.

Research by Craven (2003) to determine the relevant weight of meta-tags, indicates that the H1 (heading 1) and H2 (heading 2) tags are the second and third most highly weighted (after the TITLE tag) of all the meta-tags As with Microsoft Word, the hypertext markup language (HTML) has built-in styles for headings to differentiate among importance levels of text that are usually used to break up text into paragraphs. The different options allow the designer to develop large and bold text in an HTML document, marking the beginning of a new paragraph or section (Henzinger *et al*., 2002: 9).

4.5.4.2 Image filenames

Search engine crawlers cannot interpret the content of an image, a video or an audio file. The designer has to provide text-based information to allow the crawler to make some

association between this type of file and its contents (Weideman, 2009). For still images, the name of the file is the most obvious way of establishing this association. A simple experiment can prove that the name of an image file does play a role in its visibility.

When doing an image search on Google or Bing for the term ‘rolls royce’ for example, page after page of images of this car are produced. Upon closer inspection of the first result page, virtually every image has those two words as part of the filename.

4.5.4.3 Image alternative tags

ALT (alternative) tags are used to display text in the place of an image on a web page if graphics are turned off. The ALT text will also display if a user places his/her mouse pointer over an image for a few seconds.

Currently, automated crawlers can read only text elements within a web page and are unable to read multimedia elements, as discussed earlier. For this reason, it is of importance to apply ALT tags where possible, accurately describing the graphics on the web page (Hubbard, 2004).

By implementing ALT text within a web page, the developer ultimately caters for users who turn graphics off, to increase loading speed. Without the use of ALT tags, a site could become impossible to navigate when graphics are turned off. The use of ALT tags also provides the ability to cater for users with a visual disability.

Voice-output screen readers (benefiting those users) will not ‘read’ a non-text element (Oppenheim *et al*., 2000: 204), but will do so if an ALT element is provided. Ironically, the implementation of techniques to allow the visually impaired to better interpret website contents, could also play a major role in improving the user experience of other users, as well as the way crawlers interpret web pages.

4.5.4.4 Metadata

Another meta-tag which plays a role in visibility is the TITLE tag. It is also invisible as part of the body text of a web page being displayed, but it is often displayed on a user screen as part of search engine results. Search engines often claim that the presence of a well-written TITLE tag can positively influence a web pages’ visibility (Anon, 2014).

In summary, only a few of the many elements affecting the crawler visibility of a web page have been discussed. There are many others (keyword usage, HTML filenames, links, etc.), as well as a long list of negative elements, which should specifically not be implemented (Weideman, 2009).

4.6 METHODOLOGY

Data was gathered from a real-life website, where first the one (PPC) and then the other (SEO) of the marketing approaches were followed exclusively. Usage behaviour and statistics were recorded and analysed, in an attempt to compare the expenditure with the gain from each approach.

A company in Cape Town, South Africa, manufactures PVC, polyprop and leather promotional and stationery products. The companies' name is not listed - for the purposes of recording they will be named XYZ.

The company invested in PPC from May 2010 to May 2011 in an attempt to drive traffic to the website. In that time, no SEO implementation was done on the website. Each month XYZ spent on average R3000 on PPC. However, after the PPC campaign was terminated, they paid a once-off fee of R19 000 for the SEO project.

The XYZ concern is a relatively small company. Considering that they have a typical monthly website traffic figure of hundreds as compared to millions for large companies, their business model must be sound to run a successful e-commerce concern. The most important requirement of the client was that their website remained optimised in such a way that it could lead to sales.

The authors did a detailed investigation of the XYZ website, identifying elements that could be improved through SEO, with the estimated short-term cost it may entail.

The following elements which needed improvement were identified:

- Header tags (were not being used).
- Image filenames (were inappropriate and non-descriptive).

- Metadata (was outdated).
- Alternative tags (were inappropriate and non-descriptive).
- Products descriptions (were too short or non-existent).
- The bounce rate (was too high).

Header tags

All the headings on the XYZ website were placed in strong tags. Best practice prescribed that all strong tags be replaced with H1 and H2 Tags.

This would imply that the authors would have to inspect every one of the 55 web pages, and either write new H1 tags, or rewrite the existing ones.

Image filenames

Some of the image filenames did not contain relevant keywords. An example of this was '_MG_2174.jpg'. Again best practice was that these filenames be renamed with appropriate keywords that reflect the objects on each image. A total of 246 images were found and renamed in the 55 HTML pages.

Metadata

Throughout the year the website was updated with new products while older products have been removed. However, the metadata was not updated accordingly.

It was recommended that the metadata of all 55 HTML pages be updated to reflect the new content. This was done, and it included updating the TITLE-, DESCRIPTION- and KEYWORD-Tags of all 55 HTML pages.

Image alternative tags

Some of the ALT tags of the images were too long. Best practice was that these ALT tags be shortened and rewritten to contain relevant keywords and reflect the image that it is associated with. There was a total of 256 images whose ALT tags were reviewed and rewritten.

Product descriptions

Some of the products listed on the XYZ website were identified by only one short sentence. It was decided, based on best practice, that all product descriptions be rewritten to have at least two to three descriptive sentences each. Sixty four of the 128 products did not have sufficient descriptive text, and were subsequently rewritten. The remaining 64 descriptions were also reviewed to ensure sure that they contained relevant keywords.

Bounce rate

The XYZ website had a bounce rate of 48%, where a lower figure is considered to be better (Plaza, 2009). In industry, a bounce rate of 30% is considered to be a breakpoint: higher than 30% is 'bad' and lower is 'good'. It was necessary that the homepage text be reviewed with the aim to reduce the high bounce rate. However, the bounce rate is not an element a Web developer can improve by doing coding updates or any other direct actions. It is a figure which will decrease (i.e. improve) as users spend more time on web pages as a result of other elements described here, are put into place.

Project plan

The project was then split into three stages.

At the start of June 2011 the header tags were modified.
At the start of July 2011 the image filenames and image ALT tags were modified.
At the start of August 2011 the product descriptions, copy and metadata were modified.

These timescales appear in the figures following, to indicate the effect of each alteration.

4.7 RESULTS & INTERPRETATION

Header tags

The effect (if any) of the header tag improvement, as discussed earlier, was measured by viewing statistics on website usage as from when the header tags were redone. Refer to Figure 4.1.

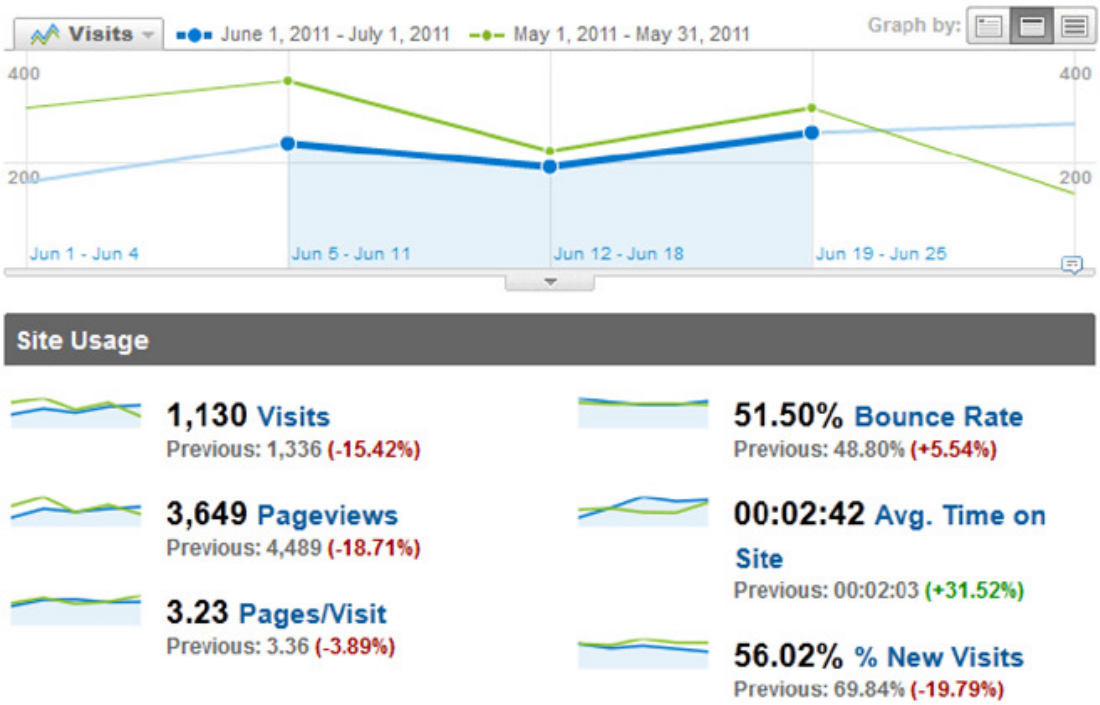

Figure 4.1: Effect of header tag improvement on website visitations

The company stopped their PPC campaign on 31 May 2011. The immediate effect of this action was a drop in total traffic by 15.42% (1130 vs 1336) when we compare June 2011 with May 2011. The authors then proceeded to review and modify all headings on the website. This process involved modifying the CSS file and defining the Header Tags. There were 244 instances where strong tags were used, and all of them were replaced with H1 and H2 tags.

Also, the headings themselves were modified to include appropriate keywords. The authors ensured that each page only had one instance of the H1 tag, which is considered the most important of the heading tags. The work was conducted throughout June 2011 and was completed in the final week of June 2011. It must be noted that all the work was completed on the live website. As the authors progressed, a slight increase in traffic in the second week of June 2011 was noted.

By this time half of the 244 instances of strong tags were replaced by either H1 tags or H2 tags. The fact that the authors saw an increase in organic traffic was somewhat unexpected, since it can take search engines up to a month (Zuze *et al*, 2013) to re-index and rank web pages after significant changes have been implemented. From the author's

point of view this highlights the importance search engines place on Header tags. For any website, it is a simple matter to assign header tags to headings. Just by doing that the website has been seen in a more favourable position from a search engines perspective.

ALT tags

The effect of the updating of the ALT tags was also measured by viewing the relevant statistics - see Figure 4.2.

Figure 4.2: Effect of image file name and image ALT improvement on website visitations

The modifications of the image ALT tags were completed in the final week of July 2011. While performing this task the authors observed a slight decrease in traffic from the second week to the third week of July 2011. However, a slight increase in total traffic followed the initial decline as the month of July 2011 draw to a close. By this time total number of visitors dropped from 1336 (May 2011) to 825 (July 2011).

It is expected to note decreases in traffic when extensive work is being performed on a website. Search engines take note of content changes then have to re-index and rank the individual web pages. This process can take anything from a few days to months. The increase by the end of July 2011 was also in a sense unexpected since the authors

argued that the process of re-indexation and ranking would take longer than it did. This increase also indicates the value basic SEO elements can have on a website's ranking.

Body content

The role of body text and the use of keywords have been noted many times in previous research. As mentioned above, sections of this body text had to be rewritten, and the graphs of Figure 4.3 indicate the effect of these changes.

Figure 4.3: Effect of product descriptions, content and metadata improvement on website visitations

A lack of regular updating of HTML metadata content was noted in the web pages of the company. While descriptive text in the body was updated, the relevant metadata was simply left with the original content, leading to a disconnect between these two elements.

Care was taken to ensure that all three meta elements were rewritten according to Google's guidelines. The new version contained relevant keywords and was reflective of the product that it related to. This work was completed in the last week of August 2011.

The August 2011 total traffic increased compared to July 2011 (16.36%). This indicated to the authors that Google was starting to re-index the text website with the modifications.

A relative simple update to content and ensuring that the metadata is reflective of the new content produced a significant increase in website traffic. This was mostly due to the presence of relevant, unique, keyword rich and regularly updated content. This increase in traffic confirms this and website authors should seriously consider this crucial aspect of a website.

Overall traffic trends

Month 1

Next, two one-month periods will be compared to see if any trend is evident. See Figure 4.4.

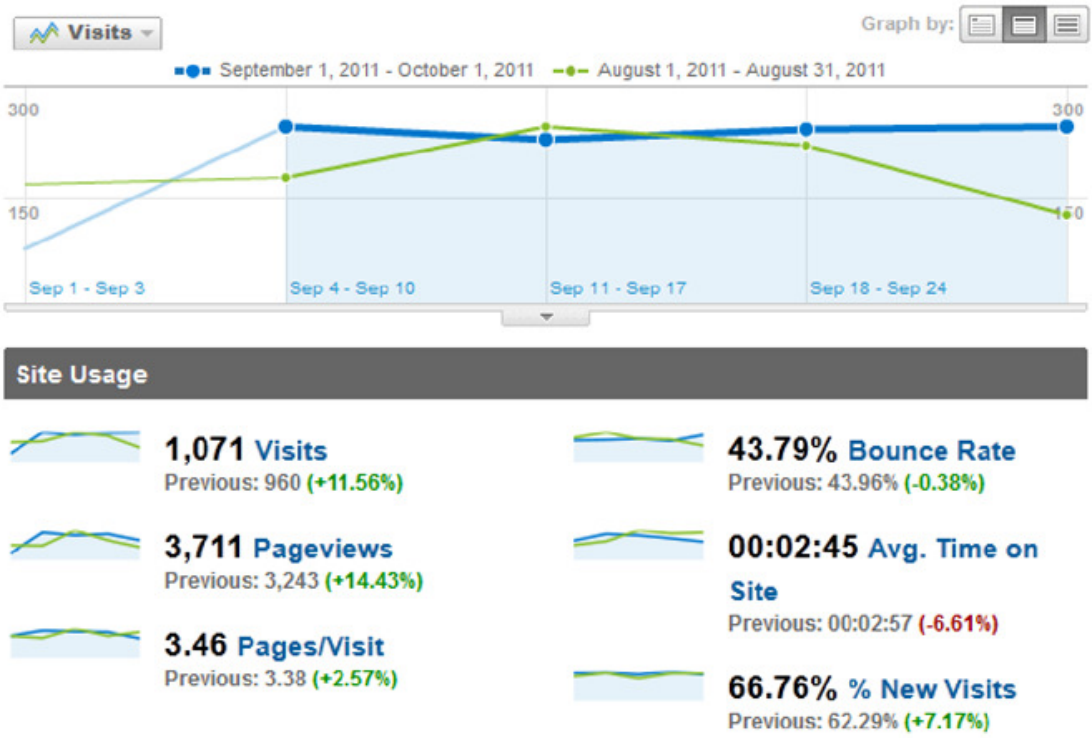

Figure 4.4: Total website traffic: September 2011 compared to August 2011

During the month of September 2011 no work was conducted on the test website. In this time, the total traffic further increased compared to August 2011, 11.56% in total. Although

August 2011 has not quite reached the traffic levels of May 2011, which included the PPC traffic, the data looked promising.

By this time, it was safe to assume that Google has indexed all the onsite changes. It was evident that all the website's pages were being re-indexed and ranked. However, the continuing climb in traffic indicated that rankings were indeed improving and more and more users are finding the website via Google's search result pages. This has to be seen against the fact that no further investment in PPC was done after campaign shutdown in May 2011.

Month 2

The figures for the second month are given in the graphs of Figure 4.5.

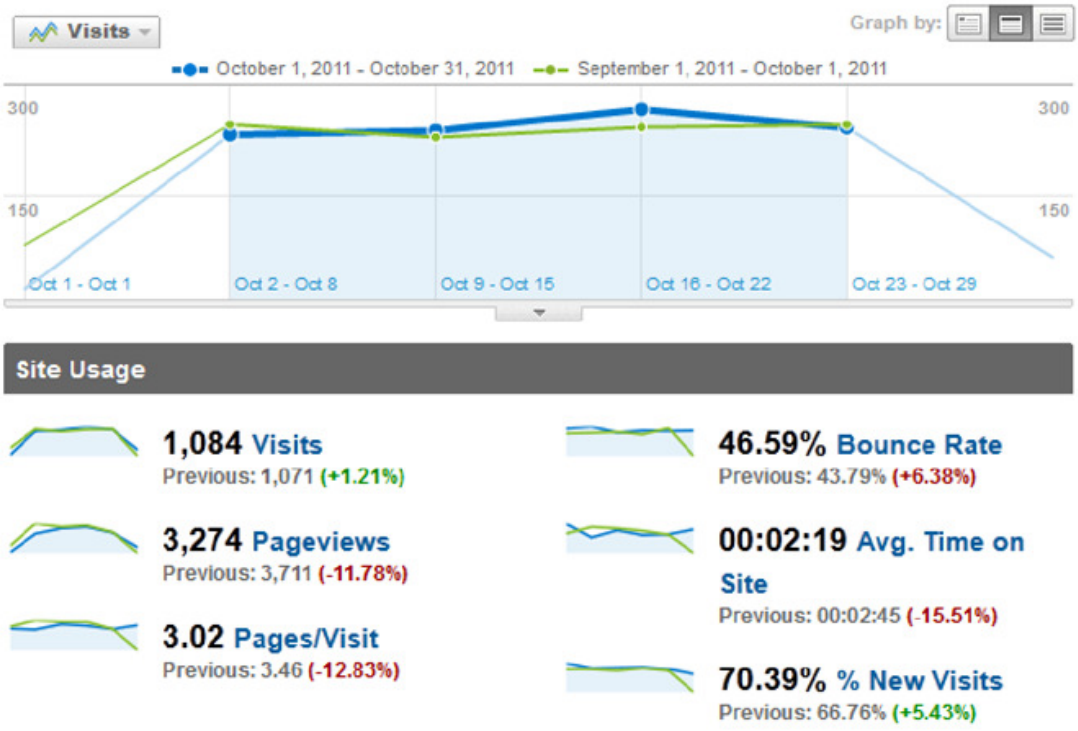

Figure 4.5: Total Traffic October 2011 compared to September 2011.

In October 2011 the authors continued to monitor the results and noted another slight increase in total traffic (1.21%). This was an indication that Google has completed the re indexation of the modified test website. By this time the website traffic has increased from 825 visits to 1,084 (31,4% increase) in a period of four months.

Annual Comparison

Finally, a year on year comparison will be done - see Figure 4.6.

Figure 4.6: Year on year comparison: 1 June 2011 - 31 October 2011 compared to 1 June 2010 - 31 October 2010

In Figure 4.6 the authors are comparing 1 June 2011 - 31 October 2011 (no PPC included) to 1 June 2010 - 31 October 2010 (PPC traffic included). In June the two years looked very similar in terms of traffic to the website, however, a sharp decrease in traffic

can be observed when the PPC campaign was shut down and the modifications to the website started. By August 2011 the traffic already started increasing after the header tags, image files names and image ALT tags was modified to just below the levels of the previous year. Then in August 2011 when the product descriptions, new homepage content and metadata was concluded the traffic further increased. By end of September 2011 the total traffic has increased to levels higher than the previous year, which included the PPC traffic.

Final traffic/expenditure summary

The results of this study are best described by summarising traffic to the XYZ website during the two test periods, while comparing it to the expenditure. Table 4.1 summarises the relevant figures.

Date	Traffic PPC	Traffic SEO	Exp. Adj.	Exp. Orig.
Jun-10	650		142.8571	3000
Jul-10	706		142.8571	3000
Aug-10	723		142.8571	3000
Sep-10	721		142.8571	3000
Oct-10	788		142.8571	3000
Nov-10	718		142.8571	3000
Dec-10	718		142.8571	3000
Jan-11	718		142.8571	3000
Feb-11	718		142.8571	3000
Mar-11	718		142.8571	3000
Apr-11	718		142.8571	3000
May-11	718		0	0
Jun-11		639	904.7619	19000
Jul-11		536	0	0
Aug-11		696	0	0
Sep-11		792	0	0
Oct-11		822	0	0

Table 4.1: Comparative traffic during two periods

The date column lists the date of measurement of both traffic values and the expenditure of company XYZ on SEM. “Traffic PPC” lists the number of visitors for the period emanating from all search traffic - direct, referral and PPC sources. However, the actual figures for November 2010 up to May 2011 were not available, and these figures were taken to be the average of the preceding months (718).

The “Traffic SEO” column contains the number of visitors for the relevant period, again being all search traffic. However, this time the PPC campaign has been terminated, so part of the source is SEO-generated traffic. The “Expenses Original” is a summary of the SEM expenditure of the XYZ company, being R3000 per month spent on PPC, for 11 consecutive months. In May 2011 there was no expenditure, since the PPC campaign was terminated. Then, in June 2011 an amount of R19000 was paid (once-off) to have the SEO as agreed on done.

Finally, the “Expenses Adjusted” column is simply the “Expenses Original” figure divided by 21. The figure of 21 was chosen as a scale-down factor, to bring the Rand values in line with the other figures in the table. This would ensure that graphs of these values plotted on the same scale (see Figure 4.7) would be comparable in amplitude.

A graphical presentation of the relevant figures as noted above is done in Figure 4.7.

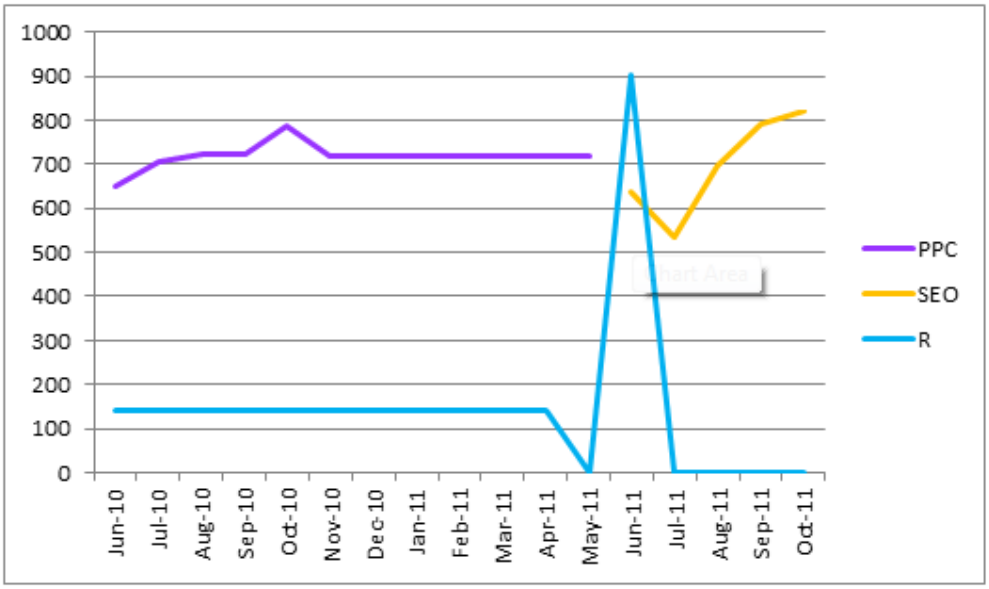

Figure 4.7: Summary of traffic versus expenditure.

An analysis of the graphs in Figure 4.7 is needed at this point. The PPC graph indicates that the amount of search traffic has stabilised over the 12-month period from June 2010 to May 2011. Since this component consists of three parts, and the split is unknown, it cannot be determined what the exact contribution of PPC was to the monthly figure. However, it is clear that is must have been substantial, considering the steep drop in traffic in the months (June and July 2011) directly following the termination of the PPC campaign.

The SEO graph of Figure 4.7 again lists all search traffic to the website, but this time with the PPC component having been replaced by the newly introduced SEO component. The initial drop over the first two months is due to the SEO campaign taking time to influence rankings and therefore traffic.

However, as from the third month into the SEO section, the graph shows a continued rise, indicating a growing trend in traffic volumes. This resulted from the fact that search engine crawlers have started visiting the site, indexing the new content, and their algorithms started giving the site an ever-increasing rank in the result listings. The rising trend appears to flatten towards the last recorded month, but without more figures this trend cannot be confirmed past the last recorded month.

Finally, the expenses of XYZ to achieve this increase in traffic need to be put into perspective - refer to the “R” line on Figure 4.7. At a fixed rate of R3000 per month, XYZ has spent R33000 over the 11-month period in an attempt to maximise the number of visitors to their site.

This expenditure played a large part in achieving the traffic volumes listed as the PPC line, as noted above. During June 2011 there was a sharp increase to R19000, but this time as a once-off expenditure. After that point in time, it dropped to zero for the rest of the recording period.

It should be noted that the traffic volume during the SEO period has bypassed the highest level achieved during the PPC period after only three months of running on SEO. And this while the average monthly PPC expense of R3000 compares well to the R3800 (R19000/5) average per month spent on SEO for this short period. However, this R3800 average figure is for only five months as compared to the PPC figure of 11 months. The

average for SEO, if calculated further, would decrease dramatically as follows:

- Nov 2011: R3167
- Dec 2011: R2714
- ..
- ..
- May 2012: R1727

After 11 months in both cases, the PPC expense would still be R3000 per month, with the SEO being R1727 per month. This trend of downward spiralling costs for SEO would continue. At the same time, if the SEO graph is extrapolated, it can be expected that the traffic volumes could increase even further past those achieved during the PPC period.

It should be noted that in a real-life SEO campaign, there will be further expenses past the initial layout, but not necessarily of the monthly recurring type. In the time period of this case study there were none, bar the initial amount. However, a study over a much longer period is needed to do a long-term comparison. It is likely that the longer an SEO campaign in running, the lower the average monthly costs will become.

Limitations of this study include that the data was obtained from a relatively low-traffic site. Also, data across a longer period of time would provide a clearer trend. Finally, a comparison was done on the traffic generated from certain marketing expenses only, not the profit eventually generated by that traffic.

4.8 CONCLUSION

An existing commercial website (that of company XYZ) was considered as the central object of this research project. An experiment was done on the XYZ website to start implementing SEO immediately after the PPC was terminated. At the same time, monitoring was done of traffic to the website, and of other relevant analytic measures. The SEO was done based on industry best practice, supported by academic research.

The owners have been spending ‘marketing dollars’ on this website, using firstly only one of the two main types of SEM for a period: PPC. The main disadvantage of PPC is that expenditure has to be consistent for results to appear - the moment a PPC budget is cut,

the resultant traffic drops to zero immediately. Therefore, the monthly expenditure in the case of XYZ (R3000) should be summed over a period to find what the overall PPC expenditure was.

After the PPC campaign was terminated, XYZ spent R19000 once-off on SEO. This amount was for the implementation of the elements as listed under 'Methodology' above.

As noted from the literature, where PPC produces immediate ranking improvements once payment has been arranged, SEO takes longer to affect rankings. This is mostly due to the waiting period for search engine crawlers to visit or refresh their copy of the website content.

When these expenditure figures are compared, it can thus be claimed that after 6.33 months the expenditure on the two systems for XYZ would have been the same. From this point in time onwards, SEO would continue to provide growing return on investment over PPC, assuming that no further expenses would be required for SEO.

In conclusion, it can be claimed that, in this specific case, SEO provides a better investment than PPC. It is also predictable that this advantage will increase as time goes by. It should also be noted that traffic to a website on its own is not the only indicator of success.

A high conversion rate, leading to more revenue generated, eventually leading to increased profit would be the final indicator of the success of an e-commerce website. However, due to the sensitivity of company financial information, this kind of evidence will be harder to come by and use as proof.

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4.10 HOW TO CITE THIS PAPER

Kritzinger, W.T. & Weideman, M., 2015, 'Comparative case study on website traffic generated by search engine optimisation and a pay-per-click campaign, versus marketing expenditure', *South African Journal of Information Management* 17(1), Art. #651, 12 pages. http://dx.doi.org/10.4102/sajim.v17i1.651

4.11 SUMMARY

Data was gathered from a real-life website, which (for the purpose of this research article) was named XYZ. The method employed by the researcher to select this company was based on a convenience sampling method which is a non-probability sampling technique where the subject (or website in this research project) is selected because of the convenience of accessibility and proximity to the researcher.

The results indicate that the PPC system did produce favourable results, but on the condition that a monthly budget has to be set aside to guarantee consistent traffic. The implementation of onsite SEO required a relatively large investment at the outset, however it was once-off. After a drop in traffic due to crawler visitation delays, the website traffic bypassed the average figure achieved during the PPC period after a little over three months, while the expenditure crossed over aver just over six months.

While considering the specific parameters of this study, an investment in SEO rather than a PPC campaign appears to produce better results at a lower cost, after a given period of time. It must, however, be noted that this research purely focused on onsite SEO elements. Possible future research could include a more in-depth comparison on websites where both onsite and offsite SEO elements are modified/implemented and then compared to the PPC performance.

CHAPTER 5
JOURNAL ARTICLE THREE

5.1 JOURNAL ARTICLE THREE

5.2 Title

Parallel search engine optimisation and pay-per-click campaigns: a comparison of cost per acquisition

5.3 Abstract

***Background**: It is imperative that commercial websites should rank highly in search engine result pages, since these provide the main entry point to paying customers. There are two main methods to achieve high rankings: search engine optimisation (SEO) and pay-per-click (PPC) systems. Both require a financial investment - SEO mainly at the beginning, and PPC spread over time in regular amounts. If marketing budgets are applied in the wrong area, this could lead to losses and possibly financial ruin.*

***Objectives**: The objective of this research was to investigate, using three real-world case studies, the actual expenditure on and income from both SEO and PPC systems. These figures were then compared, and specifically the cost per acquisition (CPA) was used to decide which system yielded the best results.*

***Methodology**: Three diverse websites were chosen, and analytics data for all three was compared over a three-month period. Calculations were done to reduce the figures to single ratios, to make comparisons between them possible.*

***Results**: Some of the resultant ratios varied widely between websites. However, the CPA was shown to be on the average 52.1 times lower for SEO than for PPC systems.*

***Conclusion**: It was concluded that SEO should be the marketing system of preference for e-commerce based websites. However, there cases where PPC would yield better results - when instant traffic is required, and when a large initial expenditure is not possible.*

5.4 Introduction

Websites are created for several reasons, one of which is the representation of the business on the Internet. Although a website is not always considered the only way to represent an online business's presence, a website is arguably the most important entity that a business can create online. The reason is that the website is the virtual representation of the organisation, brand and products/services.

This online representation determines how current and potential customers perceive the business, and it will define how customers will interact with the business. This indicates that anything and everything implemented on the website is of paramount importance. Miller (2011:17-27) lists several Web marketing methods that should be considered if a website is to be marketed effectively online.

Search engine optimisation (SEO): The concept is based on applying a search engine best practice methodology to any given website (this may require website alterations architecturally and/or otherwise), which will result in improved organic search engine rankings for topic-related search queries (Weideman 2009).

Pay-per-click Advertising (PPC): PPC advertising is paid advertising on search engines and other display websites. It forms part of the search engine revenue model and functions on a keyword bidding system that depends on visitors that click on the advertisement.

Online Advertising: This is commonly known as banner advertising, whereby graphical advertisements are placed on advertising publishing websites that have significant traffic volumes. The advertisements are paid for on a cost per impression basis and refer to the number of visitors that have viewed the advertisement.

Email Marketing: Is referred to as 'push' marketing as the marketing message is pushed to the receiver's inbox. This also makes it a lot harder for the receiver to ignore the marketing message as opposed to an advertisement on a website. Email marketing is popular because of the following reasons:

- low cost,
- speed,

- simplicity,
- being proactive and
- targeting recipients.

Blog Marketing: Blogs are used to make a more direct connection with customers. They are typically informative and personalise certain entities within the company. Blogs are often also used as a promotional channel for the business.

Social Media Marketing: Although blogs form part of social media marketing, social media is more focused on creating communities of various types that share information and current activities.

In addition, consumers prefer to connect with consumers as they no longer blindly trust what businesses say. Informal consumer discussions (horizontal trust) are beginning to take precedence over business promises (vertical trust) (Kotler et al. 2010:7).

Online Public Relations: Also referred to as Press Releases. This is the publishing of press releases on other reliable, high-traffic volume and related industry websites that could drive traffic back to the business website.

Multimedia Marketing: Multimedia Marketing includes both podcasting (audio) and digital video. The podcasts and videos could be hosted on other industry or topic- related websites as well as on the business website. Search engines often include different media formats in the search engine result pages (SERPs), which viewers often engage with owing to ease of use.

Mobile Marketing: In recent years, more and more mobile users have started to make use of mobile phones to access the Internet. This not only means that businesses need to re-evaluate websites and how they function on the mobile phone along with consumer expectations, but also other mobile advertising options such as SMS, banner and PPC advertising.

More recently, the click to call function reduces the business response time delay, whereby the mobile user can simply click on the number on the advertisement to call the business without even visiting the website.

Each one of these marketing channels has a role to play in the overall marketing of a business website. However, for this study a more in-depth analysis of PPC and SEO has been done. Why focus on PPC and SEO? According to Clarke & Clarke (2014) marketers typically use these two distinct search engine marketing strategies.

PPC is a scheme where marketers must submit a bid for one or more keywords or key phrases, then create the advertisements using minimal text to appear on user screens, and overtime pay the search engines only when a user clicks on one of the advertisements.

The other strategy is SEO, which in turn involves many factors which the search engines use to determine relevance and ranking. These are normally categorised as being on-page, off-page and site wide SEO.

Most prospective online shoppers are often overwhelmed by an oversupply of information, provided by search engines and other channels to find relevant answer to their information needs (Broilo, Espartel, and Basso, 2016).

This further highlights the importance of providing answers to search queries high up on the SERPs, to ensure that user clicks are harvested. Both PPC and SEO strategies involve boosting rankings on a search engine results page, but there are key differences in where those results might appear (Olbrich and Schultz (2014).

See Figure 5.1.

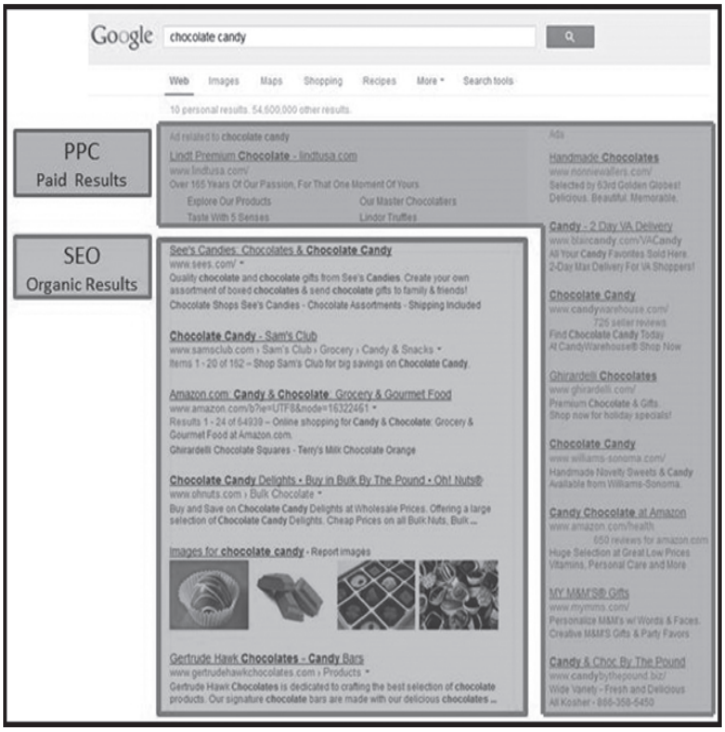

Figure 5.1: SERP Locations for PPC and SEO (Clark & Clark, 2014).

However, this layout has changed in February 2016 when Google started implementing a large overhaul which moved some of the advertisements from the right side to the bottom of the screen.

Google also stated that it may show an additional advertisement (one extra ad on top of the original three) above the organic search results for what they called 'highly commercial queries' (McGee, 2016).

Presumably this was done to provide better exposure for paying clients, instead of giving away some precious real estate at the top of the ranking lists to non-paying search results. See Figure 5.2 for the new layout.

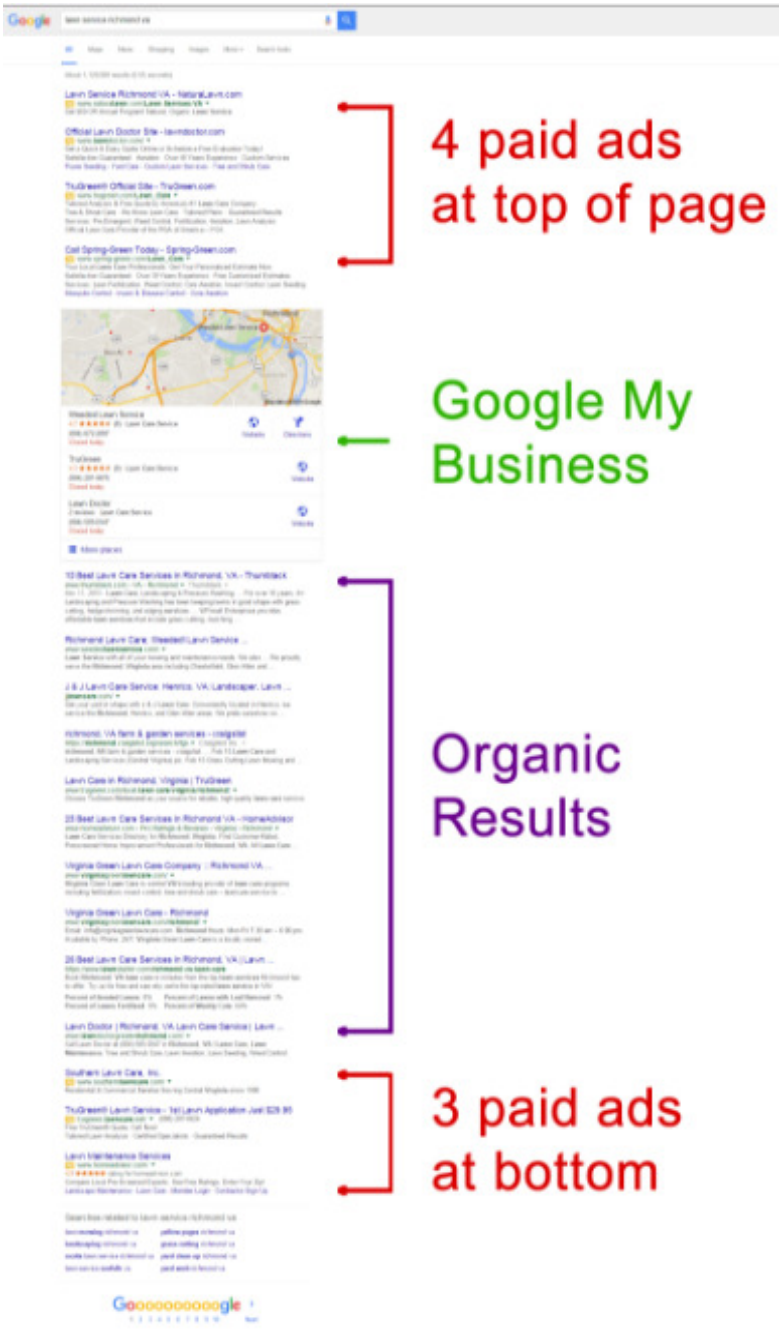

Figure 5.2: New SERP Locations for PPC and SEO (Huck, Hammer & Carpenter, 2016).

5.5 Aims and Objectives

The aim of this study was to determine the best way to spend advertising resources. The objective was to measure and compare the cost per acquisition (CPA) of SEO versus PPC, under comparable circumstances, which would give an indication of the most effective marketing spending pattern.

These are critical issues, especially when companies are spending large amounts of money monthly to ensure the best possible exposure of their marketing efforts through websites, and even through social media platforms (Baidya and Basu, 2011).

5.6 Research Problem

It is important to budget properly for marketing expenditure, since large amounts could be involved in certain markets (Baidya and Basu, 2011; Ford, 1994). At the same time, money spent on marketing through PPC and SEO respectively have been the topic of controversy (Kritzinger and Weideman, 2015). It appears as if more marketing dollars are spent on SEO, while PPC seems to yield higher income.

It has also been claimed that expenditure on marketing in especially larger companies has increased from 20% to 50% in around 50 years (Baidya and Basu, 2011).

The research problem is that financial losses can be incurred if marketing resources are misallocated, specifically when choosing between spending on SEO and PPC.

While attempting to address this problem through the research, a comparison will be made between cases where both SEO and PPC were used on different websites. The CPA will be calculated and compared, since this figure is a good indication of the return on investment (ROI).

5.7 Literature review

A literature survey was done to determine what prior research has been done in this area. Key concepts such as SEO, PPC and CPA were studied.

5.7.1 Search Engine Optimisation

To ensure a higher volume of human visitors, websites need to be visible to search engine crawlers. One important element in high rankings is how closely the contents of any given web page matches the specification of a search engine for a ‘good’ website. This match is determined by a search engine algorithm. A process termed SEO can be used to improve how closely a website’s layout matches the guidelines of the search engine. This process

includes writing good content, ensuring a high number of links pointing to the website, plus many other factors. These are sometimes classified as either:

- on-page SEO (elements which are present (or absent) on the actual web page), or
- off-page SEO (elements which are not part of the website, but exist outside).

SEO is theoretically a once-off process, since these changes will remain on the website after being implemented. However, the SEO done on a website must be updated over time. Search engines change their algorithms regularly, and competitor websites with high rankings could push down a given website on the SERPs.

SEO mostly involves a relatively large investment when done for the first time, with a much lower expense over time after that. Much research has been done to determine the best strategy to leverage SEO into ranking better on Google. Lu, Yang and Huan (2015) claimed that important keywords on the website should be incorporated into the URL, the page title and the snippet.

Both Sullivan (2011a) and Weideman (2009) have developed models to rank the SEO elements used by Google algorithms in the commercially important ranking of results on SERPs. However, many large retrieval systems suffer from low efficiency due to badly designed systems (including the ignorance of SEO principles), which make it difficult for search engine crawlers to find information and return relevant results (Weideman, 2015).

5.7.2 Pay Per Click (PPC)

According to Yang, Zhang, Qin, Li & Wang (2012:1141) there has been tremendous growth of search auctions when, as these authors put it, ‘economics meet search’ (Yang, et al, 2012:1141).

The same authors continue and explain that search auctions (or PPC) have now become one of the most used online advertising channels. So much so that search auctions now produce the primary revenue source for major search engines. Google has reported a total revenue of $8.44 billion in the fourth quarter of 2010. Of this total, search auctions contributed 97% (Yang, et al, 2012:1141). Prior research has been done to reduce the negative effect of inefficient keyword bidding when running a PPC campaign (Nabout, 2015).

Some studies have shown that, when faced with the choice, more users will click on SEO results than those clicking on PPC results (Neethling, 2008; Panda, 2013). This seems to confirm the existence of an anomaly as noted by Kritzinger and Weideman (2015). However, the PPC industry has grown into a multi-billion dollar industry, and generates a large income to its hosts, including Google and Bing (Gupta and Mateen, 2013). This implies that the PPC system is successful, and that it should be investigated.

5.7.3 Cost per acquisition

In search engine marketing, the CPA is the average cost of acquiring customers, or leads yielding customers. One accepted way of calculating the CPA is to divide the advertising cost by the number of customers (or leads) over a period. Some marketers use the terms CPA and cost per action interchangeably.

In effect, the CPA is an indication of the advertising cost of converting a human visitor into a paying client, producing revenue for the company. Ideally the CPA should be low, which implies a higher profit rate. It has been claimed that acquiring a new customer could cost five times more than to retain an existing one (Pfeifer, 2005). This confirms the importance of determining which marketing method produces the lowest CPA.

5.8 Methodology

For this research project, the authors examined the analytics and other statistical usage results of three real-life websites where both PPC and SEO of the marketing approaches were followed in tandem. The three websites are from three distinct industries, and had no relation to each other.

The names of the three companies are not listed here - for brevity's sake they will be referred to as Website1, 2 and 3. Al three companies invested in SEO and PPC on their websites. Website 1 is in the Bedding and Linen industry that is based in South Africa. They are an e-commerce concern.

In contrast, Website 2 is in the Toys Retail Industry and is based in the United Kingdom. Lastly, Website 3 is in the Road-Side Assistance Industry and is based in South Africa. Website 3 is not an e-commerce website, so an alternative way to measure transactions and actual income had to be found. For this research, the authors considered Goal

Conversion specifically, i.e. the number of new membership sign ups. This metric was considered to be roughly equivalent to an indication of sales, since both generate direct income for the company.

The three websites were monitored for a period of 90 days (three months). Usage behaviour and statistics were recorded and analysed to compare the expenditures with the gains, more specifically the CPA for each of these test websites.

Each of these websites was running an AdWords Campaigns over the 90-day period they were monitored. All three were also running SEO campaigns alongside PPC Campaigns. The AdWords costs were recorded for each of the three websites as well as the monthly SEO cost over the three-month period.

For the two e-commerce websites (Website 1 & 2), the following statistics were recorded for both the PPC and SEO campaigns, for the three-month period:

- The number of clicks received for both the paid and organic section of Google's search results page.
- The number of user sessions recorded.
- The average bounce rate.
- The average number of pages per session.
- The e-commerce conversion rate.
- The number of transactions recorded.
- The total revenue after three months for both PPC and SEO.

The e-Commerce conversion rate is the percentage of sessions that resulted in an e-commerce transaction. For example, if a website had 17 352 sessions in a month, and these sessions resulted in 188 transactions then the e-Commerce conversion rate would be (188 / 17 352) x 100 = 1.08%

For Website 3 (the non-e-commerce website) the same statistics were also recorded for both PPC and SEO other the three months with these exceptions:

The e-commerce conversion rate was replaced with 'goal conversion rate', and
No revenue was recorded since the website is not e-commerce enabled.

5.9 Results and analysis

For the results and interpretation, the focus will firstly be on websites 1 & 2 (the e-commerce websites). The results recorded for Website 1 follows.

5.9.1 Website 1

For Website 1 the test period was from 7 September 2015 to 5 December 2015. The total number of organic clicks (SEO clicks) was retrieved from Google's Web Console.

Figure 5.3: Clicks harvested from Website 1

Figure 5.3 indicates that Website 1 received 56 334 clicks from organic search results over the test period. This resulted in 57 475 organic sessions. The organic sessions were retrieved from Google Analytics - see Figure 5.4.

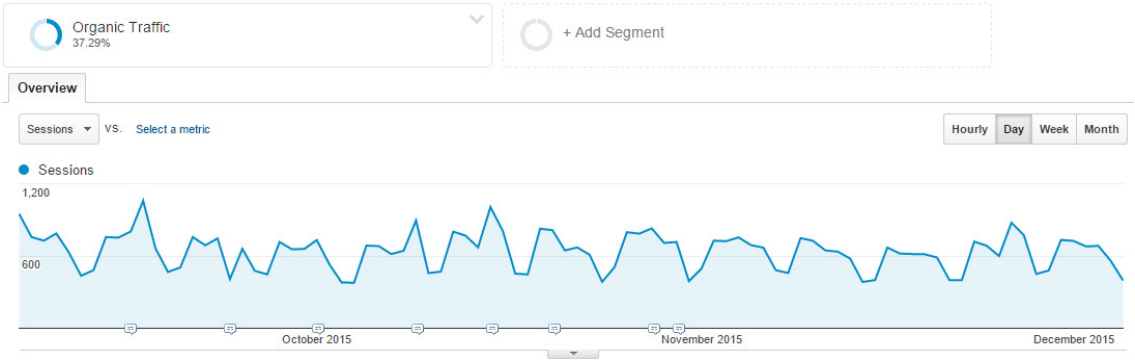

Figure 5.4: User sessions recorded on Website 1

From the 57 475 organic sessions, the website analytics recorded 219 e-commerce transactions with a total revenue of R314 078.50, as shown in Figure 5.5.

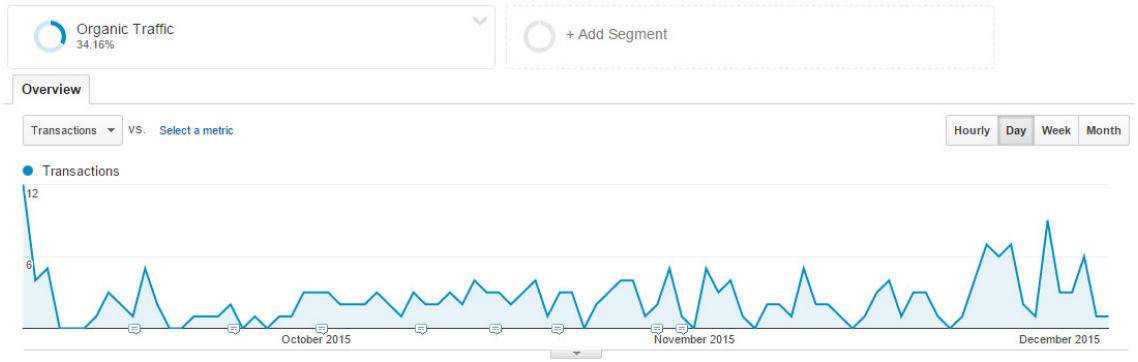

Figure 5.5: E-commerce transactions recorded on Website 1

Website 1 received 28 926 clicks from the AdWords Campaign (PPC Campaign) - this produced 29 795 PPC sessions. From these sessions, a total of 178 transactions were recorded over the three-month period. This produced a PPC revenue of R238 925.60. See Figure 5.6.

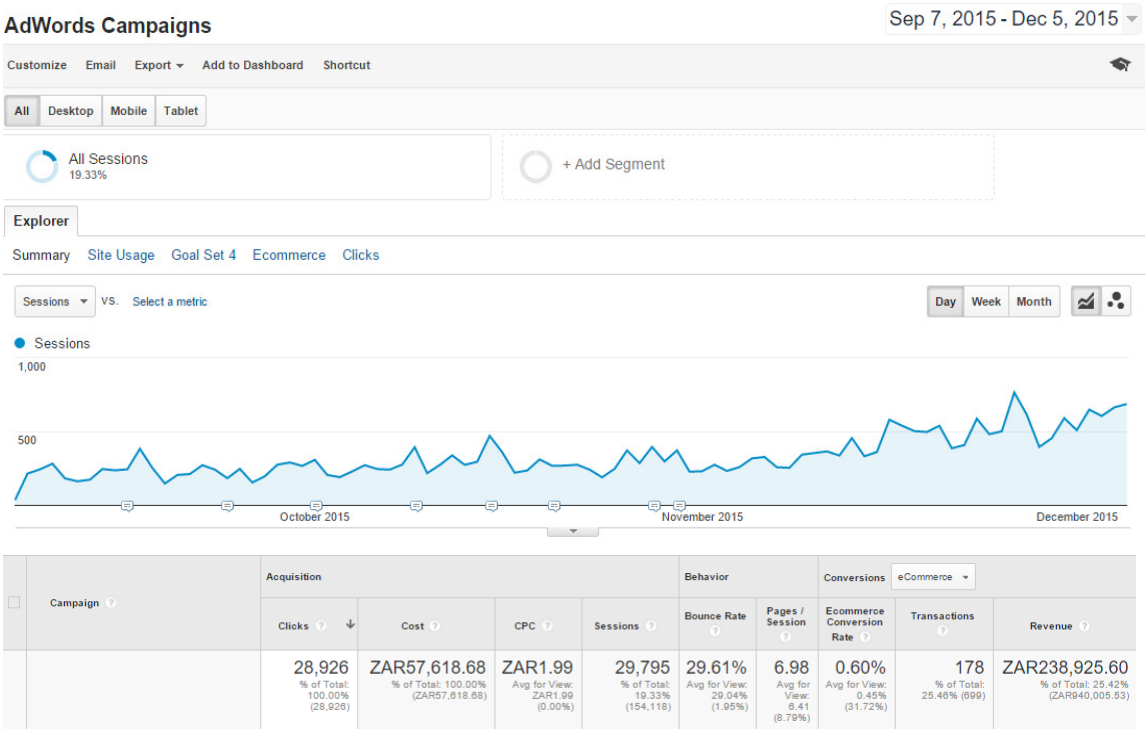

Figure 5.6: Transactions recorded on Website 1

To summarise the results for Website 1, refer to Table 5.1 on the next page.

Website 1	PPC	SEO	Ratio-PPC:SEO
Clicks	28 926	56 334	1.9
Cost	R57 618,68	R27 300,00	2.1
CPC	**R1,99**	**R0,48**	**4.1**
Sessions	29 795	57 475	1.9
Bounce Rate	29,61%	23,59%	1.3
Pages/Sessions	6,98	7,21	1.0
E-commerce Conversion Rate	**0,60%**	**0,38%**	**0.6**
Transactions	178	219	1.2
Revenue	R238 925,60	R314 078,50	1.3
CPA	**R333,43**	**R127,18**	**2.6**

Table 5.1: Results for Website 1.

The values in the PPC and SEO columns were extracted from the Google Analytics records, while the Ratio column figures were calculated as a ratio of the previous two column values. Figures in the Ratio column were rounded to 1 decimal place. In all cases, a decision was taken in terms of how the ratio was to be calculated, to enable easier interpretation of the table data.

For any given two sets of figures, a ratio of 1 (1:1) would mean SEO and PPC performed identically. It was decided randomly (since only the ratio and not the actual figures matter) that if the PPC and SEO figures for a given row indicated that SEO performed better than PPC (e.g. SEO produced more clicks, or SEO cost less than PPC), then the calculation would be done in a way that the ratio would be above 1.

When considering the values of Table 5.1, the following must be higher to better:
Clicks, Sessions, Pages/session, E-commerce conversion rate, Transactions and Revenue. The remaining measures need to be lower to be better: Cost, Cost per click (CPC), Bounce rate and CPA.

The figures in Table 5.1 can be classified into two types:

those which do not have real value in terms of ROI, mostly isolated figures which do not depend on any other value (called incidental from here on - indicated in normal type), and those which carry weight in terms of ROI, in the sense that they provide an indication of value (called indicative from here on - indicated in bold type).

From Table 5.1 it is clear that over the test period of three months a combined cost of R84 918.68 was incurred. PPC represents 68% of the total cost while SEO represents the remaining 32%. In contrast, the total number of clicks received was 85 260. SEO represents 66% of the total clicks while PPC represents the remaining 34%. This is almost the exact reverse of the cost split between PPC and SEO.

Also from Table 5.1, the cost per click for PPC was R1.99 and R0.48 for SEO - the CPC for SEO is four times lower than the CPC for PPC. The bounce rates for PPC and SEO were relatively close to being the same at 29.61% and 23.59% respectively. The e-commerce conversion rate for PPC is slightly higher than that of the SEO e-commerce conversion rate, at 0.6% and 0.38% respectively. This indicates that PPC visitors are slightly more likely to convert than those arriving on a site through SEO results.

Finally, when comparing the total revenue, it was found that PPC resulted in R238 925.60 (or 43%) of the total revenue received over the three-month period. SEO resulted in R314 078.50 (or 57%) of the total revenue.

In summary, three of the calculated ratios are indicative, and two of the three favour SEO. This includes the most important measure, the CPA.

5.9.2 Website 2

For Website 2 the test period was from 17 January 2016 to 15 April 2016. The total number of organic clicks (SEO clicks) was retrieved from Google's Web Console. See Figure 5.7.

Figure 5.7: Clicks harvested from Website 2

As can be seen from Figure 5.7, Website 2 received 3 871 508 clicks from organic search results over the test period. This resulted in 4 872 537 organic sessions. The organic sessions were retrieved from Google Analytics. See Figure 5.8.

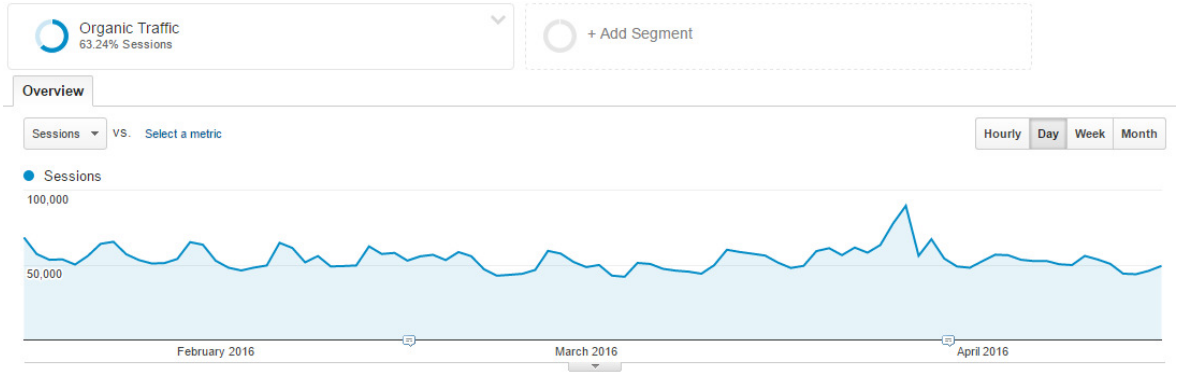

Figure 5.8: User sessions recorded on Website 2

From the 4 872 537 organic sessions (see Figure 5.8), the website received 41 186 e-commerce transactions with a total revenue of £2 163 584,37. See Figure 5.9.

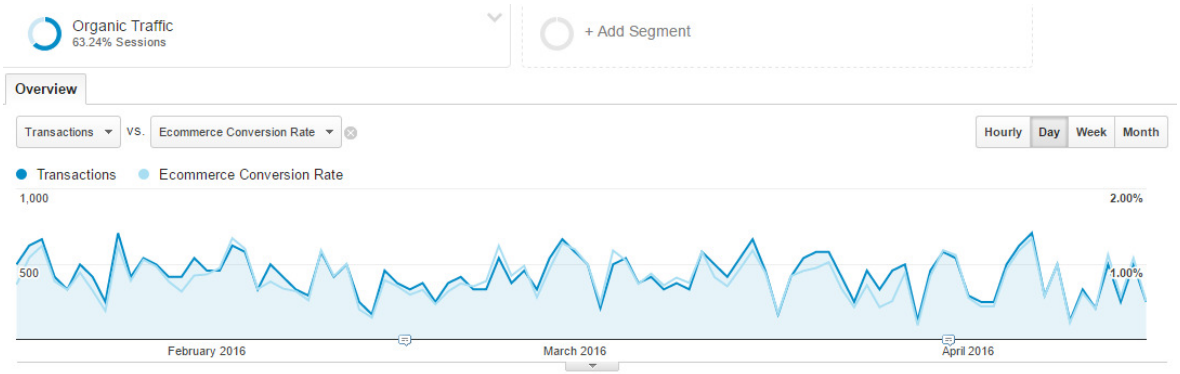

Figure 5.9: E-commerce transactions recorded on Website 2

From the AdWords Campaign (PPC Campaign) Website 2 received 322 483 clicks which resulted in 442 399 PPC sessions. From the 442 399 PPC sessions a total number of 7 869 transactions were recorded over the three-month period which resulted in a PPC revenue of £354 876,22. See Figure 5.10.

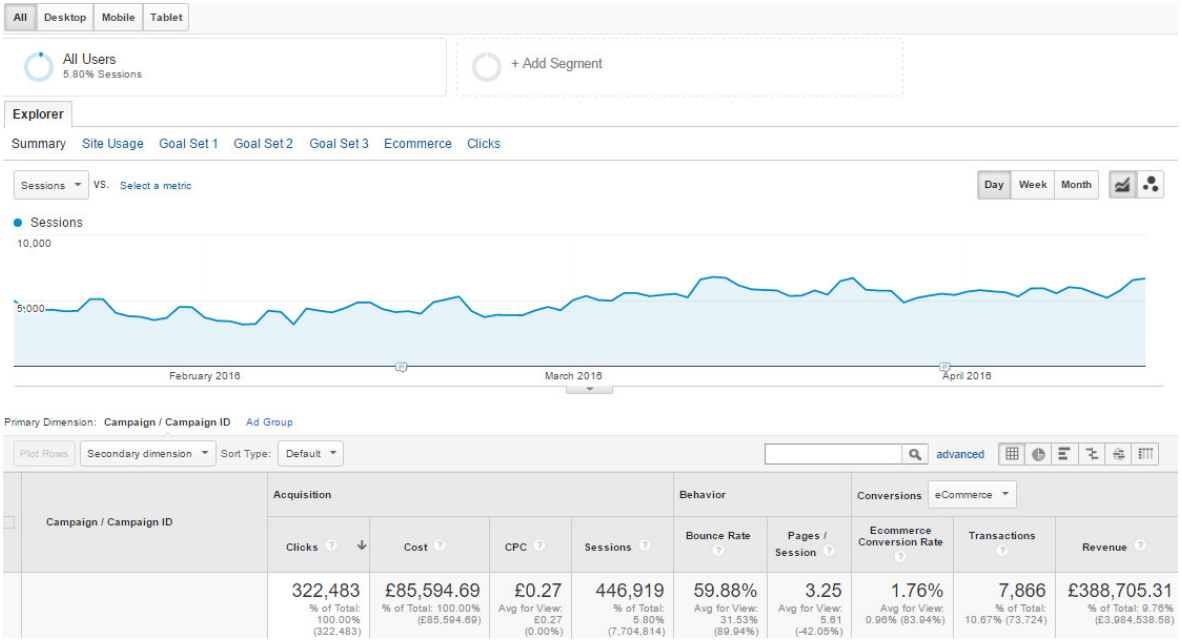

Figure 5.10: Transactions recorded on Website 2

For a summary of the results for Website 2, see Table 5.2.

Website 2	PPC	SEO	Ratio-PPC:SEO
Clicks	322483	3871508	12
Cost	£85 594,69	£3 372,13	25,4
CPC	**£0,27**	**£0,00087**	**310,3**
Sessions	442399	4872537	11
Bounce Rate	59,55%	26%	2,3
Pages/Sessions	3,19	6,08	1.9
E-commerce Conversion Rate	**1,78%**	**0,85%**	**0.5**
Transactions	7869	41186	5.2
Revenue	£354 876,22	£2 163 584,37	6.1
CPA	**£14,92**	**£0,10**	**149.2**

Table 5.2: Results for Website 2.

From the table above the authors found that over the test period of three months a combined cost of £88 966,82 was incurred. PPC represents 96% of the total cost while SEO represents the remaining 4% of the total cost.

In contrast, the total number of clicks received over the three-month period was 419 3991. SEO represents 92% of the total clicks while PPC represents the remaining 8%. This is almost the complete reverse of the cost split between PPC and SEO.

From the numbers in this table it became clear that the cost per click for PPC was £0.27 and £0.000 87 for SEO. The CPC for SEO is significantly lower than the CPC for PPC.

The bounce rates for PPC and SEO were very different at 59.55% and 26% respectively. The e-commerce conversion rate for PPC is higher than that of the SEO e-commerce conversion rate - 1.78% and 0.85% respectively. This means that PPC visitors are slightly more likely to convert.

Finally, when the authors compared the total revenue it was found that PPC resulted in £354 876.22 (or 16%) of the total revenue received over the three-month period. SEO resulted in £2 163 584.37 (or 84%) of the total revenue.

In summary, three of the calculated ratios are indicative, and two of the three favour SEO. This includes the most important measure, the CPA.

5.9.3 Website 3

For Website 3 the test period was from 8 September 2015 to 6 December 2015. The total number of organic clicks (SEO clicks) was retrieved from Google's Web Console.

Figure 5.11: Clicks harvested from Website 3

As can be seen from the graph above Website 3 received 296 101 clicks from organic search results over the test period. This resulted in 319 660 organic sessions. The organic sessions were retrieved from Google Analytics.

See Figure 5.12.

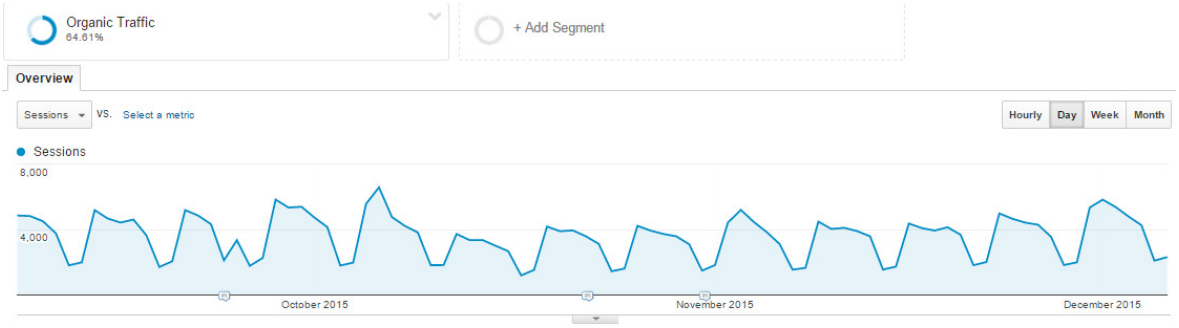

Figure 5.12: User sessions recorded on Website 3

From the 319 660 organic sessions, the website received 1 573 goal completions. See Figure 5.13.

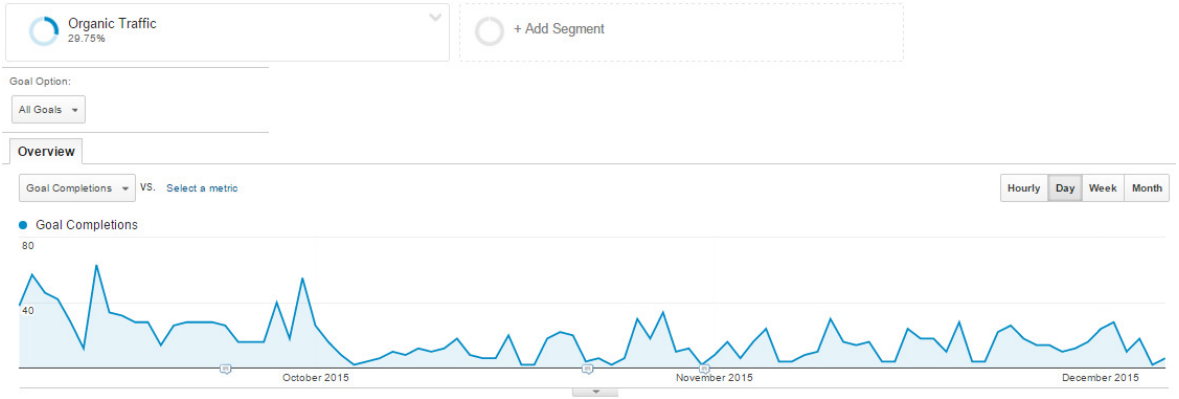

Figure 5.13: E-commerce transactions recorded on Website 3

From the AdWords Campaign (PPC Campaign) Website 3 received 59 838 clicks which resulted in 19 572 PPC sessions. From the 19 572 PPC sessions a total number of 811 goals were recorded over the three-month period. See Figure 5.14 on the next page.

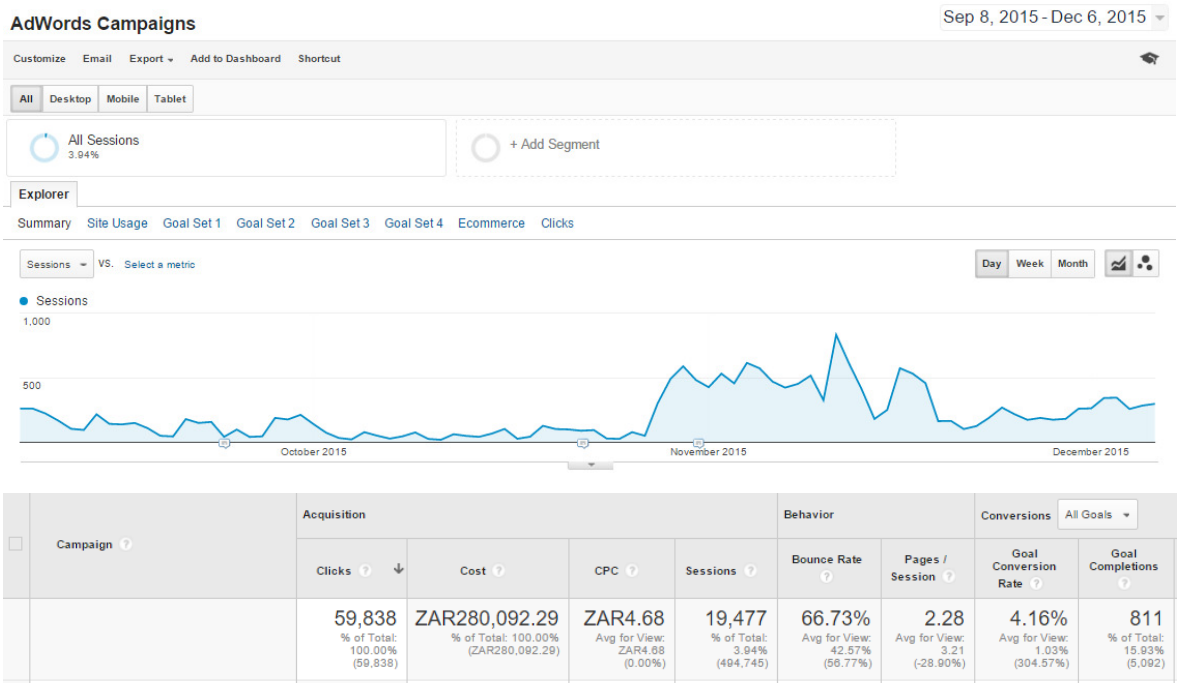

Figure 5.14: Transactions recorded on Website 3

To summarise the results for Website 3, see Table 5.3.

Website 3	PPC	SEO	Ratio-PPC:SEO
Clicks	59838	296101	5.0
Cost	R280 092,29	R37 500,00	7.5
CPC	**R4,68**	**R0,13**	**36.0**
Sessions	19572	319660	16.3
Bounce Rate	66,73%	41,29%	1.6
Pages/Sessions	2,28	3,25	1.4
Goal Conversion Rate	**4,14%**	**0,49%**	**0.1**
Transactions	811	1573	1.9
CPA	**R112,96**	**R25,85**	**4.4**

Table 5.3: Results for Website 3.

From Table 5.3 the authors found that over the test period a combined cost of R317 592.29 was incurred. PPC represents 88% of the total cost while SEO represents the remaining 12% of the total cost. In contrast, the total number of clicks received over the three-month period was 355 939. SEO represents 83% of the total clicks while PPC represents the remaining 17%. This is almost the complete reverse of the cost split between PPC and SEO.

From the figures in Table 5.3 the authors also found that the cost per click for PPC was R4.68 and R0.13 for SEO. The CPC for SEO is 36 times lower than the CPC for PPC. The bounce rates for PPC and SEO were also very different at 66.73% and 41.29% respectively. The goal conversion rate for PPC was higher than that of the SEO goal conversion rate - 4.14% and 0.49% respectively. This means that PPC visitors are significantly more likely to convert.

In summary, three of the calculated ratios are indicative, and two of the three favour SEO. This includes the most important measure, the CPA.

5.10 Conclusion, limitations and recommendations

It was considered necessary to investigate why Website 2 had such extreme figures favouring SEO. Website 2 is that of 'n major toy retail store in the UK and Ireland. They have literally hundreds of different Product Categories and thousands of Products being sold. Each one of these category and product pages were built on SEO best practice.

This has resulted in a very large number of web pages with a high search engine ranking, resulting in a high number of visits from searchers clicking on natural results. The large difference in user sessions between SEO and PPC (4 872 537 versus 442 399) confirms this claim. Hence, this specific website has a much better ranking on natural results than the other two, smaller websites. This fact clarifies the higher SEO-supporting figures.

Finally, a further summary of the results from the three websites' figures and ratios was needed before drawing conclusions. In Table 5.4, the most indicative figures from the three website data tables is summarised.

Measure	Website 1	Website 2	Website 3
CPC	4.1	310.3	36.0
Conversion Rate	0.6	0.5	0.1
CPA	2.6	149.2	4.4

Table 5.4: Website comparative results.

It is clear that all three websites show the same trends, but to different degrees.

CPC: All three websites favour SEO, with Website 1 showing a relatively small difference, and Website 2 showing a dramatic difference. A higher CPC can therefore be achieved through the use of SEO. Of all three measures, CPC has the highest degree of difference, with an average SEO preference of 116.8.

Conversion rate: All three websites favour PPC, with Website 1 showing a relatively large difference, and Website 3 showing a small difference. A higher Conversion Rate can be achieved through the use of PPC. Of all three measures, Conversion Rate has the lowest degree of difference, with an average PPC preference of 0.4.

CPA: All three websites favour SEO, with Website 1 showing a relatively small difference, and Website 2 showing a dramatic difference. It can therefore be concluded that a higher CPA can be achieved through the use of SEO. The average CPA for the three websites is 52.1.

The focus of this research was on a comparison between the CPA of SEO versus PPC systems, so these figures require more attention. The CPA figure is 52.1 times higher on the average for PPC systems than for SEO.

So, if an online retailer must spend for example R1 000 per month to acquire sales through SEO, they will need to spend R52 100 during the same month through PPC for the same returns. A higher number of websites need to be compared for a reliable average figure, so this research is considered to be preliminary.

In final conclusion, the results clearly show that SEO produces a much lower CPA, which is therefore a better choice of marketing strategy for any online retailer.

Limitations of the study include that only three websites were used - more websites in the sample would yield more accurate results. Also, figures spanning a longer period would produce more stable results.

As recommendation, it is suggested that most of a company's marketing budget be spent on SEO. However, in certain isolated cases PPC could be a better choice. Examples where this could be the case include:

- when immediate results are imperative, or
- when regular expenditure per month is preferable over an initial high investment.

In the first case, PPC would be better, since one's PPC ads can start playing immediately after the system and accounting has been set up, possibly harvesting paying clients with virtually no delay (Kritzinger & Weideman, 2013). With SEO, time has to be allowed for crawler visitation and indexing, before search results could bring in clients.

Secondly, if SEO on a given website is non-existent or badly done, it could require a major financial investment before results of an SEO campaign will be evident. In some situations, the client might not have the financial means to invest a large amount upfront, and might choose to rather spread the financial outlay over a period.

In this case, after a given period the PPC expenditure might cross over that of what the SEO costs might have been, and then an SEO investment might have been better in the long run. It has been proven in previous research that this time period can typically be around six months (Kritzinger & Weideman, 2015).

Finally, the following recommendations were evident from this research:

- use PPC if quick results are essential, and if a more piecemeal way of spending a limited budget is needed,

- use SEO for results at a lower overall cost, when considering the amount spent to achieve those results, and

- use both approaches in tandem in a systematic, carefully balanced long-term approach to ensure high rankings, high visitor counts, high income and eventually a higher return on investment (Kritzinger & Weideman, 2013).

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5.12 Summary

Three diverse websites were chosen, and analytics data for all three was compared over a three-month period. These figures were then compared, and specifically the CPA was used to decide which system yielded the best results. Calculations were done to reduce the figures to single ratios, to make comparisons between them possible.

The method employed by the author to select these three companies was based on convenience sampling, which is a non-probability sampling technique where the subject (or website) is selected because of the convenience of access and proximity to the author.

It was concluded that SEO should be the marketing system of preference for e-commerce based websites. However, there cases where PPC would yield better results - when instant traffic is required, and when a large initial expenditure is not possible.

CHAPTER 6
DISCUSSION AND CONCLUSION

6.1 INTRODUCTION

In Chapter 6, the author intends to provide a summary of all the components of this research project, providing an overview of the literature review, the journal article structure, and the main findings of Articles One, Two and Three. The author compares the results from all three journal articles and the significance of the findings.

The author also leads a discussion on possible future research that could be conducted to further explore the findings of this research project. Finally, in the conclusion section, all the evidence are drawn together and discussed, and a model (on which a dual SEM strategy can be based) is provided.

6.2 LITERATURE REVIEW SUMMARY

The literature review provides an overview of the current state of the Internet and the extraordinary growth of information on the Internet. It is estimated that more than 1.3 billion websites are available on the Internet, and over 1 million new websites are added to it every year (Ambergreen Internet Marketing Ltd, 2005). The amount of information on the Internet continues its trend to grow exponentially according to Kobayashi & Takeda (2000) as cited by Zhang & Dimitroff (2005).

An increasing number of sophisticated tools have been developed to aid with the retrieval of all the information that is available on the Internet (Brinkley & Burke, 1995). Some tools that the Internet offers are commercial search engines and subject gateways; seen as two of the most important tools for locating/retrieval of information (Thelwall, 2002). These search engines provide access to this overwhelmingly intricate information resource. Thelwall (2001) estimated that around 80% of users utilise search engines to locate information on the Internet.

According to authors Bughin, Chui & Manyika (2013), the pace of technology change, innovation and business adoption since 2010 has been stunning. They estimate that the world's stock of data is doubling every 20 months; and in 2013 the number of Internet-

connected devices has reached 12 billion. Not only that, payments by mobile phones are quickly approaching the $1 trillion mark (Bughin, Chui & Manyika, 2013).

This places attention on the underlying importance of web page owners being listed with search engines. An important strategy for any website owner is planning how a visitor would/could find their way to their site (Thelwall, 2001). A good example of this is the business strategies that a lot of large companies are using to ensure that their website obtains a high ranking in certain Google searches. Some companies opted for paid inclusion, to have their sites ranked higher than they normally would have (Smith, 2003).

One way of gaining more visibility with search engines is through the process of SEO. SEO is a process that maximises web page visibility in search engines for users' search queries by keyword or key phrase (Jerkovic, 2010). SEO informs search engines what the content is of the web pages. Descriptive page titles, meta tags, Alt attributes, anchor text, search friendly HTML tags and code, optimised quality content, keyword optimisation and link building strategies all contribute to SEO.

SEO also evolved through the years. According to Fishkin *et al* (2015), SEO is a marketing discipline focused on growing visibility in organic search engine results. It encompasses both the technical and creative elements required to improve rankings, traffic, and increased awareness in search engines.

The same authors also stated that there are many aspects to SEO, from the content of your page to the way other websites link to your website. You also need to ensure that the website is structured in a way that search engines will understand. Ultimately, it is about making the site better for the users.

The alternative method to make a website more visible on search engines is to place PPC ads. The availability of advertising space on the first page of the search results is most appealing. Most paid search systems, such as Google AdWords, are driven by a bidding model where the advertiser must bid on keywords to have their ad placed.

The bid is for keywords/phrases that the advertiser wishes to have visibility for. Paid search ads generally appear above and below the organic results; paid ads compete with naturally occurring results for the attention of users.

The results of implementing a PPC campaign are immediate (Jerkovic, 2010). PPC is advantageous for those who are looking to promote an initiative that will go live in a short amount of time, or whose business is seasonal in nature and who can therefore only arrange promotions during certain months of the year.

6.3 JOURNAL ARTICLE STRUCTURE

The research project is divided into three sections. Journal Article One, which was an empirical field experiment where the authors investigated websites that invested in PPC to determine if they also invested in SEO.

In Journal Article Two, the authors proceeded with an experiment where a successful e-commerce concern invested in PPC for some time. The campaign was de-commissioned and SEO was implemented across all pages of the website. The author then recorded traffic and expenses and compared the PPC with the SEO campaign.

Journal Article Three, the final article, aimed to compare successful e-commerce websites that utilised both SEO and PPC and evaluated their CPA.

6.4 JOURNAL ARTICLE ONE SUMMARY

In journal article one, the relationship between website owners having invested in SEO and PPC respectively is investigated and reported on. The design used in this research was based on an empirical field experimental approach. The authors considered the implementation of both SEO and PPC, and compared the results.

Data was gathered from Google search results after performing both fat head and long tail key-phrase searches based in various categories. The websites that were listed in the top 10 of the sponsored section of the search results were recorded. These websites were then checked to see if they also had an SEO ranking within the top 100 for both the fat head and long tail key-phrases.

It was found that website owners seldom invest in SEO as part of a SEM (SEM) campaign. This seemed to confirm some of the findings by other authors. Only SEO and PPC were evaluated, as they are the most used search engine marketing techniques.

Possible future research could include investigating other search engines' PPC systems - Bing or Yahoo!, for example.

This research has important implications for SEO and PPC practitioners, and for website owners. It should influence the way budgets on search engine marketing are applied.

Finally, it could be used by marketing managers in better utilising their limited SEM dollars. No evidence could be found that this kind of empirical research has been done, hence the results are considered to be unique.

6.5 JOURNAL ARTICLE TWO SUMMARY

Journal article two set out to determine how the results of the implementation of a pay-per-click campaign compared to those of a search engine campaign, given the same website and environment. At the same time, the expenses incurred on both these marketing methods were recorded and compared.

The active website of an existing, successful e-commerce concern was used as platform. The company has been using pay-per-click only for a period, while traffic has been monitored. This system was de-commissioned at a given point, and the alternative SEO system was started at the same time. Again, both traffic and expenses were monitored.

The results indicate that the PPC system did produce favourable results, but on the condition that a monthly fee must be set aside to guarantee consistent traffic. The implementation of SEO required a relatively large investment at the outset, but it was once-off.

After a drop in traffic due to crawler visitation delays, the website traffic bypassed the average figure achieved during the PPC period after a little over three months, while the expenditure crossed over just six months.

While considering the specific parameters of this study, an investment in SEO rather than a PPC campaign appears to produce better results at a lower cost, after a given period.

6.6 JOURNAL ARTICLE THREE SUMMARY

Journal article three investigated, using three real-world case studies, the actual expenditure on and income from both SEO and PPC systems. These figures were then compared, and specifically the CPA was used to decide which system yielded the best results.

Three diverse websites were chosen, and analytics data for all three was compared over a three-month period. Calculations were done to reduce the figures to single ratios, to make comparisons between them possible.

Some of the resultant ratios varied widely between websites. However, the CPA was shown to be on the average 52.1 times lower for SEO than for PPC systems.

It was concluded that SEO should be the marketing system of preference for e-commerce based websites. However, there cases where PPC would yield better results - when instant traffic is required, and when a large initial expenditure is not possible.

6.7 DISCUSSION

From the Journal Article One the results showed that very few of the websites that invested in PPC had organic listings within the top 100 for both fat head and long tail key-phrases. This therefore confirms the statement by Sen (2005) that online marketers very seldom use SEO as part of a SEM campaign. Even when assuming that the implementation of SEO costs the same as investing in PPC, and the benefits include the assurance of always being part of a user's consideration set, SEO is still not the optimal SEM strategy for website marketers.

However, in a recent survey conducted on the website Search Engine Land a very different picture was portrayed (Sullivan 2011b). Out of 254 respondents, 20 (7.9%) said that they only use PPC, while 93 (36.6%) said that they only use SEO. The remaining 141 (55.5%) said they use both SEO and PPC. This seems to point to a contradiction on the respective popularities of SEO and PPC.

However, this survey conducted by Sullivan (2011b) was hosted on the Search Engine Land website, with readership consisting mainly of SEM practitioners who understand the importance of both SEO and PPC.

Given that the audience of Search Engine Land is mainly SEM practitioners and not necessarily Marketing Managers of companies, it would then support the comments made by Waltzer (2008). One of the major reasons for the quick adoption of the PPC strategy is that it is very like traditional paid advertisement strategies and business owners or Marketing Managers can manage such campaigns on their own.

Furthermore, from Journal Article Two the results proved that SEO provides a better investment than PPC. It is also predicable that this advantage will increase as time goes by. When these expenditure figures are compared, it can thus be claimed that after 6.33 months the expenditure on the two systems for XYZ would have been the same. From this point in time onwards, SEO would continue to provide growing return on investment over PPC, assuming that no further expenses would be required for SEO.

It should also be noted that traffic to a website on its own is not the only indicator of success. A high conversion rate, leading to more revenue generated, eventually leading to increased profit would be the final indicator of the success of an e-commerce website.

Finally, Journal Article Three results indicated that all three test websites favour SEO when it comes to CPC, with Website 1 showing a relatively small difference, and Website 2 showing a dramatic difference. A better CPC can be therefore be achieved through the use of SEO. Of all three measures, CPC has the highest degree of difference, with an average SEO preference of 116.8.

In contrast, all three websites favour PPC in terms of Conversion Rate, with Website 1 showing a relatively large difference, and Website 3 showing a small difference. A higher Conversion Rate can be achieved using PPC. Of all three measures, Conversion Rate has the lowest degree of difference, with an average PPC preference of 0.4.

Results for CPA showed all three websites favour SEO, with Website 1 showing a relatively small difference, and Website 2 showing a dramatic difference. It can therefore be concluded that a better CPA can be achieved using SEO. The average CPA for the three websites is 52.1.

The focus of Journal Article Three was on a comparison between the CPA of SEO versus PPC systems, so these figures require more attention. The CPA figure is 52.1 times higher on the average for PPC systems than for SEO.

So, if an online retailer must spend for example R1 000 per month to acquire sales through SEO, they will need to spend R52 100 during the same month through PPC for the same returns. A higher number of websites need to be compared for a reliable average figure, so this research is considered to be preliminary.

6.8 SIGNIFICANCE OF THE STUDY

This study contributes to the existing body of knowledge in the field of SEM by proving that SEM expenditure in an unbalanced way seems to be the norm. It then confirmed that both SEO and PPC are required for maximum website exposure.

SEO being a long-term strategy that would yield inexpensive long-term results. Whereas PPC on the other hand would yield traffic with a high conversion rate in a very short period. However, traffic is only guaranteed if there is budget available.

6.9 MODEL

As a final conclusion, a dual strategy model is proposed herewith. This model should be used in designing a cost-effective SEM strategy, tailored to a specific business. It involves choosing between one or both of SEO and PPC as marketing platforms.

The results of the three research articles have been combined and articulated to design this model, which should allow any digital marketer to plan a marketing strategy in a way that will, for a specific situation, reduce costs and increase yield.

Firstly, the research results from the three articles are listed below.

Article 1

- Not many PPC based websites invest in SEO.
- A survey has shown that: 7.9% of participants use only PPC, 37% use only SEO and 56% use both.
- PPC is easier for unskilled users to implement.
- Unbalanced SEM expenditure seems to be the norm.
- Both approaches are required for a balanced approach.

Article 2

- The target company terminated their PPC campaign in favour of SEO, due to continued PPC expenses.
- PPC expenditure grows every month with the planned PPC spend - no spend, no traffic.
- SEO continues to produce leads, even long after expenditure.
- SEO is likely to have high once-off expense.
- SEO is likely to take longer in producing paying customers.
- Stop PPC, start SEO - expect approximately three months for traffic levels through SEO to bypass the PPC traffic levels of before.
- Stop PPC, start SEO - expect approximately six months for expenditure on SEO to cross over that of PPC.
- Traffic only is not a good indicator of success - high conversion rate is.

Article 3

- SEO provides a lower (= better) CPC than PPC.
- PPC provides a higher (= better) e-commerce conversion rate than SEO.
- SEO provides a lower (= better) CPA than PPC.
- If badly done or non-existent on a website, initial SEO can be expensive.
- A higher percentage of SEM budget should be spent on SEO than PPC, with

noted exceptions.

- PPC should be favoured when: immediate results and/or expenditure spread over a period are prerequisites.
- SEO should be favoured if a lower overall cost per sale (CPA) is required.
- Both SEO and PPC should be used in a balanced, long-term strategy.

Figure 6.1 summarises the research results from the three articles in a single model.

It is suggested that, when a marketing strategy must be designed and/or decisions on budgeting must be taken, this model be used to ensure maximum yield for appropriate expenditure.

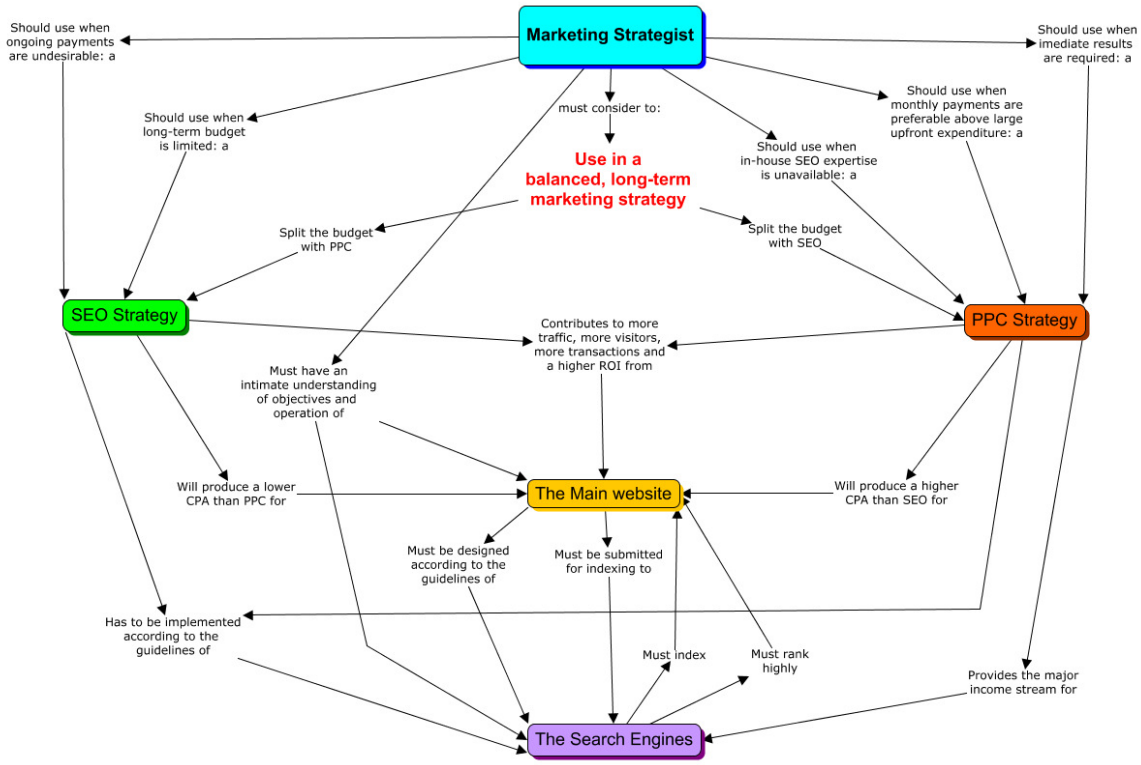

Figure 6.1: Model to assist in planning a dual marketing strategy

6.10 FUTURE RESEARCH

Possible future research could include investigating other search engines' PPC systems and compare to the results obtained in Journal Articles One, Two and Three - Bing and Yahoo!, for example.

Also, Journal Article Two's limitation was that only one website's PPC data was recorded pre-SEO implementation, and then compared. For future research, the number of test websites needs to be expanded.

Finally, limitations of the study include that only three websites were used for Journal Article Three - more websites in the sample would yield more accurate results. Also, figures spanning a longer period would produce more stable results.

6.11 CONCLUSION

Results have shown that online marketers very seldom use SEO as part of a SEM campaign. Even when assuming that the implementation of SEO costs the same as investing in PPC, and the benefits include the assurance of always being part of a user's consideration set, SEO is still not the optimal SEM strategy for website marketers.

Many of the companies that invest in PPC do not necessary have the skill/training to implement SEO on their own. They will have to outsource this to SEM companies to do this on their behalf. Some website owners have heard of SEO before but do not know what it is or what benefits it could have for their websites. Until they do, the logical way for them to get traffic to their website quickly and effectively will remain traditional advertising methods like radio, newspaper, fliers and brochures, but also PPC.

The research also showed that when these expenditure figures are compared, it can thus be claimed that after 6.33 months the expenditure on the two systems (SEO vs PPC) for XYZ would have been the same. From this point in time onwards, SEO would continue to provide growing return on investment over PPC, assuming that no further expenses would be required for SEO.

In conclusion, it can be claimed that, in this specific case, SEO provides a better investment than PPC. It is also predictable that this advantage will increase as time goes by. Also, the results clearly show that SEO produces a much lower CPA, which is therefore a better choice of marketing strategy for any online retailer. As recommendation, it is suggested that most of a company's marketing budget be spent on SEO.

However, in certain isolated cases PPC could be a better choice. Examples where this could be the case include when immediate results are imperative, or when regular expenditure per month is preferable over an initial high investment.

Finally, the following recommendations were evident from this research:

- use PPC if quick results are essential, and if a more piecemeal way of spending a limited budget is needed,

- use SEO for results at a lower overall cost, when considering the amount spent to achieve those results, and

- use both approaches in tandem in a systematic, carefully balanced long-term approach to ensure high rankings, high visitor counts, high income and eventually a higher return on investment (Kritzinger & Weideman, 2013).

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APPENDICES

APPENDIX A

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Search Engine Optimization and Pay-per-Click Marketing Strategies

W. I. Kritzinger & M. Weideman

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Abstract

Any e-commerce venture using a website as the main shop front should invest in marketing its website. In this study, the relationship between website owners having invested in search engine optimization (SEO) and pay-per-click (PPC), respectively, is investigated. The design used in this research involves an empirical field experimental approach in which implementation of both SEO and PPC are considered, with subsequent comparison of results. Data were gathered from Google search results after performing both Fat Head and Long Tail key-phrase searches based in various categories. Websites that were listed among the top 10 in the sponsored section of search results were recorded. These websites were then checked to see if they also had an SEO ranking within the top 100 for both the Fat Head and Long Tail key-phrases. It is found that website owners seldom invest in SEO as part of a search engine marketing (SEM) campaign. This seems to confirm some of the findings by other authors. This research has important implications for SEO and PPC practitioners, and for website owners. It should influence the way budgets on search engine marketing are applied. Finally, it could be used by marketing managers in better utilizing their limited SEM dollars. No evidence could be found that this kind of empirical research has been done, hence the results are considered to be unique.

Keywords: pay-per-click, search engine marketing, search engine optimization, website

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Comparative case study on website traffic generated by search engine optimisation and a pay-per-click campaign, versus marketing expenditure

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Background: No empirical work was found on how marketing expenses compare when used solely for either the one or the other of the two main types of search engine marketing.

Objectives: This research set out to determine how the results of the implementation of a pay-per-click campaign compared to those of a search engine optimisation campaign, given the same website and environment. At the same time, the expenses incurred on both these marketing methods were recorded and compared.

Method: The active website of an existing, successful e-commerce concern was used as platform. The company had been using pay-per-click only for a period, whilst traffic was monitored. This system was decommissioned on a particular date and time, and an alternative search engine optimisation system was started at the same time. Again, both traffic and expenses were monitored.

Results: The results indicate that the pay-per-click system did produce favourable results, but on the condition that a monthly fee has to be set aside to guarantee consistent traffic. The implementation of search engine optimisation required a relatively large investment at the outset, but it was once-off. After a drop in traffic owing to crawler visitation delays, the website traffic bypassed the average figure achieved during the pay-per-click period after a little over three months, whilst the expenditure crossed over after just six months.

Conclusion: Whilst considering the specific parameters of this study, an investment in search engine optimisation rather than a pay-per-click campaign appears to produce better results at a lower cost, after a given period of time.

Introduction

The growth of the Internet has produced an important information resource during the last two decades that has advanced at a much faster rate than was previously envisaged. It took seven years to reach a 25% international market share – 70% faster than the development of the radio and 80% faster than the development of the telephone. This growth makes the Internet the fastest growing technology the world has ever encountered (Singh 2002). Boyes and Irani (2004:191) support this trend by claiming that the Internet had acquired 50 million global users in five years as opposed to the 38 years it took for radio and 13 years for television.

The implementation of the World Wide Web (WWW) has seen the world confronted with the concept of a website. Websites act as connection and communication points between the user and digital information. Therefore, most corporations (according to Akakandelwa 2011), organisations or institutions have been making efforts to launch themselves into the virtual world using this modern platform. The WWW is more than two decades old and, due to its complexity, its size is impossible to measure with regard to the number of websites or servers. It is claimed that, for January 2014, the nine most popular websites in the United States of America (USA) drew between 100 million and 370 million visitors each (Nielsen 2014). The WWW is a decentralised environment constructed and controlled by various people and access to it is less restricted than access to the common information media (Brunn & Dodge 2001).

The base of Internet users is massive; hence, there is much interest in leveraging this user base for commercial gain. This commercial gain could be realised by ensuring that many thousands of users view a given website daily, with some of them being converted from browsers to buyers. It is generally accepted that the two types of interventions which could be implemented to increase the traffic to a website are search engine optimisation (SEO) and a paid campaign. However,

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AOSIS

Page 1 of 13 Original Research

Parallel search engine optimisation and pay-per-click campaigns: A comparison of cost per acquisition

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Background: It is imperative that commercial websites should rank highly in search engine result pages because these provide the main entry point to paying customers. There are two main methods to achieve high rankings: search engine optimisation (SEO) and pay-per-click (PPC) systems. Both require a financial investment – SEO mainly at the beginning, and PPC spread over time in regular amounts. If marketing budgets are applied in the wrong area, this could lead to losses and possibly financial ruin.

Objectives: The objective of this research was to investigate, using three real-world case studies, the actual expenditure on and income from both SEO and PPC systems. These figures were then compared, and specifically, the cost per acquisition (CPA) was used to decide which system yielded the best results.

Methodology: Three diverse websites were chosen, and analytics data for all three were compared over a 3-month period. Calculations were performed to reduce the figures to single ratios, to make comparisons between them possible.

Results: Some of the resultant ratios varied widely between websites. However, the CPA was shown to be on average 52.1 times lower for SEO than for PPC systems.

Conclusion: It was concluded that SEO should be the marketing system of preference for e-commerce-based websites. However, there are cases where PPC would yield better results – when instant traffic is required, and when a large initial expenditure is not possible.

Introduction

Websites are created for several reasons, one of which is the representation of the business on the Internet. Although a website is not always considered the only way to represent an online business's presence, a website is arguably the most important entity that a business can create online. The reason is that the website is the virtual representation of the organisation, brand and products or services. This online representation determines how current and potential customers perceive the business, and it will define how customers will interact with the business. This indicates that anything and everything implemented on the website is of paramount importance. Miller (2011:17–27) lists several web marketing methods that should be considered if a website is to be marketed effectively online:

- Search Engine Optimisation (SEO): The concept is based on applying a search engine best practice methodology to any given website (this may require website alterations architecturally and/or otherwise), which will result in improved organic search engine rankings for topic-related search queries (Weideman 2009).
- Pay-per-click (PPC) Advertising: PPC advertising is paid advertising on search engines and other display websites. It forms part of the search engine revenue model and functions on a keyword bidding system that depends on visitors who click on the advertisement.
- Online Advertising: This is commonly known as banner advertising; whereby graphical advertisements are placed on advertising publishing websites that have significant traffic volumes. The advertisements are paid for on a cost-per-impression basis and refer to the number of visitors who have viewed the advertisement.
- Email Marketing: Is referred to as 'push' marketing as the marketing message is pushed to the receiver's inbox. This also makes it a lot harder for the receiver to ignore the marketing message as opposed to an advertisement on a website. Email marketing is popular because of the following reasons: low cost, speed, simplicity, being proactive and targeting recipients.
- Blog Marketing: Blogs are used to make a more direct connection with customers. They are typically informative and personalise certain entities within the company. Blogs are often also used as a promotional channel for the business.