

VADE MECUM FOR THE WEB ANALYST

IMPLEMENTING SUCCESSFUL

E-BUSINESS INITIATIVES VIA ON-LINE

CUSTOMER-RELATED WEB METRICS

By: Rolan Micallef Attard

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Ghemieri, Malta

ABSTRACT

By: **Rolan Micallef Attard**

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As the global popularity of the Web increases with organisations and users alike, and the Internet gets to play a vital role in conducting business, the growing importance of Web analytics can hardly be disputed. Managers need to have reliable measurement standards, appropriate Web analytic tools and expertise at their disposal, indispensable for the success of their on-line initiatives. This dissertation has looked into whether organisations with on-line presence optimise their return on investment as a result of the adoption of Web analytics. Empirical data was obtained from a study of Maltese organisations with a live website. Results have shown that although the majority of organisations have access to Web measurement tools, the level of sophistication of Web analytic applications in use is low. These results are comparable with those obtained from similar international studies conducted recently. Management is failing to recognise the potential this medium commands, is not investing adequate resources in this area of expertise and as a consequence is not in a position to effectively incorporate Web analytics into its strategic on-line decision making processes. Taking advantage of on-line customer-centricity and methodically tracking and analysing website user interaction through sophisticated Web analytics, enables managers to act on the results, increase customer satisfaction and optimise return on investment. To encourage the adoption of Web analytics a *Vade Mecum* has been developed wherein solutions to problems faced by international enterprises are strategically placed within the customer lifecycle framework.

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**Keywords: WEB-ANALYTICS, WEB-METRICS, WEB-MEASUREMENT,
CUSTOMER-CENTRIC, E-METRICS, ROI**

AUTHOR'S DECLARATION

The work herein presented is original and is the authentic work of the undersigned.

Rolan Micallef Attard

July, 2004

Ghemieri, Malta

This dissertation is dedicated to my wife Romina and my son Max.

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1 INTRODUCTION

‘Traditional management adage: You cannot manage what you do not measure; E-Business addendum: You cannot measure what you do not define’ (Cutler & Sterne, 2000, p.1).

The World Wide Web is increasingly becoming a core business platform for forward thinking businesses. Organisations, originally utilising websites as electronic show windows and static-brochures, are morphing into e-businesses with sophisticated, technologically robust, Web-based applications, with dynamically generated content, networking front and back office functions through the Internet, intranets and extranets, reaching out for customers and suppliers to the four corners of the world, bypassing the global clock.

The significance of metrics in any field of study is indisputable. Managers rely on established metrics in the traditional management disciplines (Riggins and Mitra, 2001) to determine their organisation’s current position and to provide indicators for selecting suitable strategies for future initiatives (Hellriegel, et al., 2002; Hauser and Katz, 1998). The popularity and accessibility of the Internet has changed the traditional face-to-face encounter with the client. Organisations have the opportunity to move closer to the person behind the Web browser, and are now finding themselves just one click away from potential customers. Managers need to have reliable measurement standards, appropriate Web analytic tools and expertise at their disposal, indispensable for the success of their on-line initiatives. Organisations that exploit the paradigm shift to on-line customer-centricity, methodically tracking and analysing website user interaction through Web analytics, enabling managers to act on the

results, are set to increase customer satisfaction and optimise return on investment (ROI).

This dissertation shall establish whether local organisations are aware of and have access to Web analytic tools of a certain level of sophistication and customer-centricity. It shall determine whether Web strategists have the availability of the necessary resources for conducting in-depth analysis of the on-line customers' data provided by the Web tracking tools. It will also provide insight as to whether management is taking a reactive approach to changing websites and on-line strategies based on Web analytics for the purpose of increasing their organisations' ROI.

The intention behind preparing a survey targeted at website managers administering and maintaining websites from the Maltese islands is to supplement the information obtained from research performed by Cutler and Sterne (2000), Meta Group (2000 cited Inan 2002 p.12-13) and WebTrends (2004b) in the international sphere. Their statistics have revealed that although website metrics are being compiled and made available to management, the opportunities this data provides are not being optimally utilised to the benefit of the organisations.

This dissertation ultimately provides the Web analyst with a concise manual containing the necessary ingredients in a customer lifecycle structured framework utilising Web analytics, as a diagnostic tool and solution provider, to improve the ROI of organisations.

1.1 THE SCOPE OF THE VADE MECUM

The brief of this dissertation was to identify a problem area in the e-business environment and to deliver a practical solution.

The deliverable, the *Vade Mecum* (from Latin, literally meaning ‘go with me’, defined by *Webster's Revised Unabridged Dictionary*, © 1996, 1998 MICRA, Inc. as ‘a book that a person carries with him as a constant companion; a manual; a handbook’) is an effort towards enlisting metrics that fall within the four pillars of the on-line customer life cycle; reach, acquisition, conversion and retention (*see chapter 5.1.2*). The reader is presented with a collection of proven and documented real life case study scenarios, from available literature, that focus on major issues. The *Vade Mecum* describes how organisations that have reacted to this paradigm shift by carefully scrutinising and analysing Web traffic, have applied changes to their websites and their on-line strategies, thereby contributing successfully towards the improvement of their ROI.

The approach emphasises the significance of tracking and analysing user activity on the organisation’s website throughout the whole customer life cycle. This project is an attempt to entice the reader to realise that in-depth, constant analysis of the organisation’s customer-related Web metrics, may provide insight into the development of strategies that would contribute towards the success of on-line initiatives, which, to a certain extent are not outside the scope and reach of any organisation. The case studies have been carefully selected to influence the reader to realise that website modifications should not be effected for the sake of making changes, but website improvements should have a pre-determined scope and

pre-defined objectives, the effects of which should be monitored and compared to pre-change documented performance indicator benchmarks. The reader should be induced to eliminate any prejudice and bias that Web measurement techniques are only effective for the *big guys*, with *big numbers* and with an *infinite budget*. The reader should be persuaded to structure the organisation's website presence in such a way as to attract more on-line users to its website and to its 'brick and mortar' store front, while inducing the customer to frequently return to the website and the physical store, ideally eliminating the need of exploring competition.

The *Vade Mecum* is a document that when extracted from this dissertation and viewed in isolation stands on its own.

1.2 EVENTS LEADING TO A CHANGE OF THE DISSERTATION PROPOSAL

1.2.1 THE PROPOSAL

On the 17th October 2003 the Faculty of Economics, Management and Accountancy of the University of Malta (FEMA), received the author's dissertation proposal entitled ***Vade Mecum for the Web Analyst – Measuring the success of e-business initiatives via on-line customer-related Web metrics***. The proposal, together with the title, was accepted on the 6th November 2003.

Research had commenced during the summer months of 2003 and a structured plan had been adopted, in anticipation of the dissertation proposal submission.

1.2.2 MEETING THE PROTAGONISTS OF WEB ANALYTICS

Having reviewed available literature relating to Web metrics, and having identified the key players in the global arena for Web analytics, it was time to meet the protagonists. The opportunity arose in November 2003 to attend a seminar in London, organised by E-consultancy - www.e-consultancy.com and Net Imperative - www.netimperative.com entitled 'Web Analytics'.

The seminar, attended also by delegates of organisations of international repute, featured the following speakers:

Jim Sterne, founder of Target Marketing of Santa Barbara – www.targeting.com addressed the audience on: *Web Metrics: What I've learnt about what really works in Web Metrics.* Sterne is an internationally known speaker on electronic marketing and customer interaction and is considered the pioneer in the field. He is also a consultant to Fortune 500 companies and Internet entrepreneurs.

Matthew Tod, founder of Logan Tod & Co. - www.logantod.com addressed the audience on: *What steps do you need to follow to make Web Analytics work for you?* Logan Tod & Co. is considered a well-established UK firm in the field.

Marty Carroll, director of The Usability Company – www.theusabilitycompany.com addressed the audience on: *Combining Web Analytics with usability to get the answers you need.* The Usability Company is widely recognised as one of the leading usability specialists in the UK.

The seminar was followed by detailed presentations delivered by leading renowned International Web analytics vendors and service providers illustrating their applications and services together with indicative costs. The companies delivering their presentations were WebAbacus, WebSideStory, Nedstat, Red Sheriff, Intellitrapper and Site Intelligence.

1.2.3 INTERVIEW WITH JIM STERNE

The author succeeded in organising a tête-à-tête appointment with globetrotter, Jim Sterne. Dissertation proposal and embryo road map of the project in hand, the aims and objectives of the dissertation were discussed. Sterne agreed in principle to the slant in the dissertation, that is, that of providing an easy reference manual for the Web analyst, by illustrating how best to measure various aspects of on-line customer-centric activity, and in so doing illustrating the benefits of the metrics within the customer life-cycle. Although he agreed that detailed literature on the identified gap was not extensively available, he iterated that the focus of the dissertation should be on only a few major aspects of Web measurement techniques, as the word count limitation for the dissertation would not allow a wide spectrum of areas to be covered.

1.2.4 ORIGINALITY CONCEPT LOST

On the 5th April 2004, as work on the dissertation project was underway, Hurol Inan (international Web analytics author) dispatched his periodic email *Attuned-Web Analytics Newsletter*. In this feature he announced the worldwide publication of the

third book on the subject, this time written by Eric T. Peterson, which had just been published in February 2004, entitled '*Web Analytics Demystified*'.

After having linked to the author-edited book's website http://www.webanalyticsdemystified.com/about_wad.asp, skimmed through its table of contents and downloaded the first few chapters, it was evident that the original dissertation as planned had lost its originality. The book was ordered over the Internet and it arrived in late April 2004. The structure and the procedure used in the book were principally identical to the plan devised for the original dissertation.

New plans for the dissertation were drafted. It was previously targeted to identify '*how*' to measure aspects of Web traffic, within the framework of the customer life cycle and to illustrate major theories in a structured manual. In view of Peterson's book the focus of the dissertation was shifted to a specific concept taken from the original proposal and developed to encompass the dissertation as it is currently being presented, that is, to demonstrate '*how customer-centric Web analytics contribute to improving the ROI of organisations*'.

1.2.5 CHANGE OF DISSERTATION TITLE

In the circumstances the need to slightly change the wording of the title of the dissertation to ***Vade Mecum for the Web Analyst – Implementing successful e-business initiatives via on-line customer-related Web metrics*** was found to be necessary. On 28th May 2004 a formal application was made with FEMA to change title.

1.3 THE DISSERTATION LAYOUT

This dissertation has two main parts: the Survey and the *Vade Mecum*. The survey's research methodology is illustrated in chapter 3 while chapter 4 is dedicated to the presentation and analysis of the findings. Chapter 5 is dedicated entirely to the *Vade Mecum*. Great care has been taken to deliver this document in gender-neutral terms. When the meaning of a specific word or phrase is not evident from the text of the dissertation, this has been defined in the glossary of terms in chapter 11.

2 LITERATURE REVIEW

2.1 OVERVIEW

In this dissertation the literature review section is being presented in an unconventional fashion. To avoid repetition, and for ease of reference of the *Vade Mecum*, the literature review in this chapter covers broad concepts of the subject matter, while the literature review on specific topics is incorporated in chapter 5.

2.2 LITERATURE LIMITATION

In late April 2004 Jim Sterne wrote:

‘Eric Peterson asked me to write the forward to *Web Analytics Demystified* because, well, I’m one of three people in the world who has written a full-length book on the subject (Hurol Inan from Australia is the third writer).’ (Peterson, 2004, p.vii)

Literature of a certain depth on Web analytics is very limited. Various authors give their contributions on specific areas of interest, mainly through electronic media and journals. Detailed literature and documented facts on the strategies adopted by existent organisations illustrating methods used to overcome on-line problems and optimise their ROI are extremely scarce.

2.3 WEB ANALYTICS DEFINED

Web analytics is concerned with what goes on inside a website (Sterne, 2004b) and is considered a formal discipline for studying user activity on websites or Web applications, to facilitate the comprehension of the level of success for the purpose of their creation, to meet user preferences, and to seek the best methods to improve

usability, relevance and efficiency (Inan, 2004), as a process of verifying, analysing and interpreting a variety of data, such as Web traffic, Web-based transactions, Web server performance, usability studies, user submitted information and related sources, to help create a generalised understanding of the visitor's on-line experience (Peterson, 2004, p.5-6).

Internet marketing trainer, consultant and author, Dave Chaffey (2004), claims that the customer should be right at the heart of Web analytics, arguing that the definition in Peterson (2004) for Web analytics, has 'a fatal flaw' as he puts it, because 'it suggests analysis for the sake of it'. Chaffey, (2004) in turn defines Web analytics as 'the customer-centred evaluation of the effectiveness of Internet-based marketing in order to improve the business contribution of online channels to an organisation'.

'A generic term meaning the study of the impact of a website on its users. E-commerce companies often use Web analytics software to measure such concrete details as how many people visited their site, how many of those visitors were unique visitors, how they came to the site (i.e., if they followed a link to get to the site or came there directly), what keywords they searched with on the site's search engine, how long they stayed on a given page or on the entire site, what links they clicked on and when they left the site. Web analytic software can also be used to monitor whether or not a site's pages are working properly. With this information, Web site administrators can determine which areas of the site are popular and which areas of the site do not get traffic and can then use this data to streamline a site to create a better user experience.' (Webopedia - www.internet.com)

'The monitoring and reporting of Web site usage so [that] enterprises can better understand the complex interactions between Web visitor actions and Web site offers, as well as leverage that insight for increased customer loyalty and sales.' (Creese & Veytsel, 2002 cited Peterson 2004, p.5)

2.4 THE WEB PROFESSIONAL

Inan (2002, p.202-207) claims that Web measurement requires the abilities of a professional, with analytical skills and competencies in human psychology, on-line marketing, business and technology. The author identifies the primary responsibilities of the Web analyst to be the defining of a measurable, relevant, and balanced set of metrics, with the aim of systematically monitoring, analysing and reporting the performance of a website through the metric results.

2.5 RETURN ON INVESTMENT FOR E-BUSINESS PROJECTS

‘The only way to know if you are getting return on investment is by systematically tracking and analysing your website. In other words, you need to measure it. Not only does this provide you with a verdict on your site’s success, but also it offers insights into the site’s functions so that you can respond to issues in a timely manner’ (Inan, 2002, p.xii).

An e-business project cannot be justified unless its ROI has been clearly estimated. Sawhney (2002) writes ‘by focusing solely on what is measurable in terms of dollars and cents, companies risk being precisely wrong instead of being approximately right.’ The popular measurement of ROI translates measurement into financial terms and therefore there is the inherent risk that projects are chosen for their apparent capabilities of avoiding costs, at the expense of the promise of increased revenue. Measuring e-business initiatives solely through conventional ROI jeopardises the value e-business creates for investors and customers.

Web oriented enterprises that invest considerable amounts of money and effort on their website infrastructure and resources in order to gain an adequate return from their Web

presence need some way of measuring the endeavour (Sterne, 2004b). This may be achieved by implementing measurements to calculate cost reductions and by augmenting revenue generation estimations to justify Web analysis projects (Morris, 2003, p.2). In an era where departments within organisations are continually groping for scarce funds, marketers are being held accountable for the success of these measurement techniques, as 57% of marketing executives who measure marketing efforts obtained an increase in their marketing budgets of 11.2% according to a study performed by Blackfriars Communications (2004 cited Hallerman, 2004, p.4).

A recent study conducted during an advertising technology conference - AD: TECH 2004, in San Francisco and published in June 2004 by eMarketer – www.emarketer.com in partnership with WebTrends, indicated that while every enterprise is different, there is a common interest on how to measure on-line performance. ‘Almost half of all marketers fail to measure the results of their efforts with enough granularity to support optimisation’ WebTrends (2004b). The most popular method receiving 35.4% of preferences was reported to be complete ROI analysis of on-line ad campaigns, yet click-through rates and conversion metrics are measured by 24.2% and 18.7% of surveyed attendees respectively. Interestingly 21.7% never measure on-line advertising results, while 23.9% did not know their conversion rates (eMarketer, 2004).

In their research paper, Cap Gemini & Ernst Young (2000) established that in the Internet era, financial measures of performance are becoming less important when compared to non-financial intangible performance measures. They claim that

management that relies only on reporting of past and current financial performance is operating without obtaining a complete view of the enterprise, and is precluded from improving future operating and capital market performance. They iterate that non-financial performance metrics are a reflection of the health and wealth-creating potential of an enterprise. They established that, in the field of e-commerce, the major drivers that create value to the enterprise are the number of alliances and alliance partners, investment in research and development and capital expenditure, and the number of 'eyes' viewing the company's website, enticing the company to stimulate Web traffic towards their website.

2.6 UNIQUE VISITORS AND CUSTOMER CENTRICITY

'[Users] come to your site, leave footprints and move on. But those footprints are merely an indication that they were there and tell you nothing about the people who made those marks. Unless you know who are casual callers and who are loyal devotees, you cannot tell if your promotion and conversion efforts are working to your benefit or not.'
(Cutler & Sterne, 2000, p.26)

The research conducted by Cutler and Sterne (2000) was clearly the starting point of the e-metric era, where it was identified by the authors that a lacuna existed between the measurements performed by the business community, such as income, profit, ratios and the so called "bottom-line" and metrics for measuring website success. This research study identified some important e-metrics and explained their derivation, with the limitations of the technology and know-how existing at the time. The authors (ibid. p.60) identified the need for the professional community to invest resources to unlock the 'business value of knowing more about their customer'.

'Faster service, lower costs, higher customer satisfaction, improved retention, stronger loyalty - these are the promises of standardizing on e-metric definitions, tracking customers as individuals, leveraging customer profiles, and harnessing the power of the Web to cater to customers in the most effective way possible. Those who are first to embrace customer-centricity have a front-of-the-line advantage over the laggards. Companies that shift their focus to a customer-centric orientation will find it easier to attract new customers. The cost of switching to another vendor will skyrocket as buyers divulge more information to secure the best discounts and the best services. Converted customers will become less and less willing to start the education process with a competing vendor.' (Cutler and Sterne, 2000, p.60)

Kotler (2000, p.49) iterates the importance of customer satisfaction to gain customer loyalty, with the ultimate aim of increasing the average customer lifetime value in monetary terms. Michael S. Messinger (cited Patton, 2002) marketing and communications director of the US Government official information portal - www.FirstGov.com managed by the General Services Administration, claims that they are constantly measuring, through customer surveys, whether on-line users have a positive experience on the website and whether they will recommend the website to other users. Inan (2002, passim) claims that website measurement from a customer-centric point of view, achieves a higher ROI once it identifies how website changes would keep visitors returning to the website, thus increasing the value of the Web project. Sterne (2002, passim) looks into the areas of what can be reasonably measured and what should be measured for reasons of ROI on a website in a business environment. Friedlein (2003, p.315-322) addresses the issue of increasing the ROI by assisting the Web analyst in the identification of a measurement framework that focuses on the key drivers (*see e-tailor example in Figure 2.6-1*) particularly unique to

every business, as they are based on a myriad of different objectives, requirements, and resources.

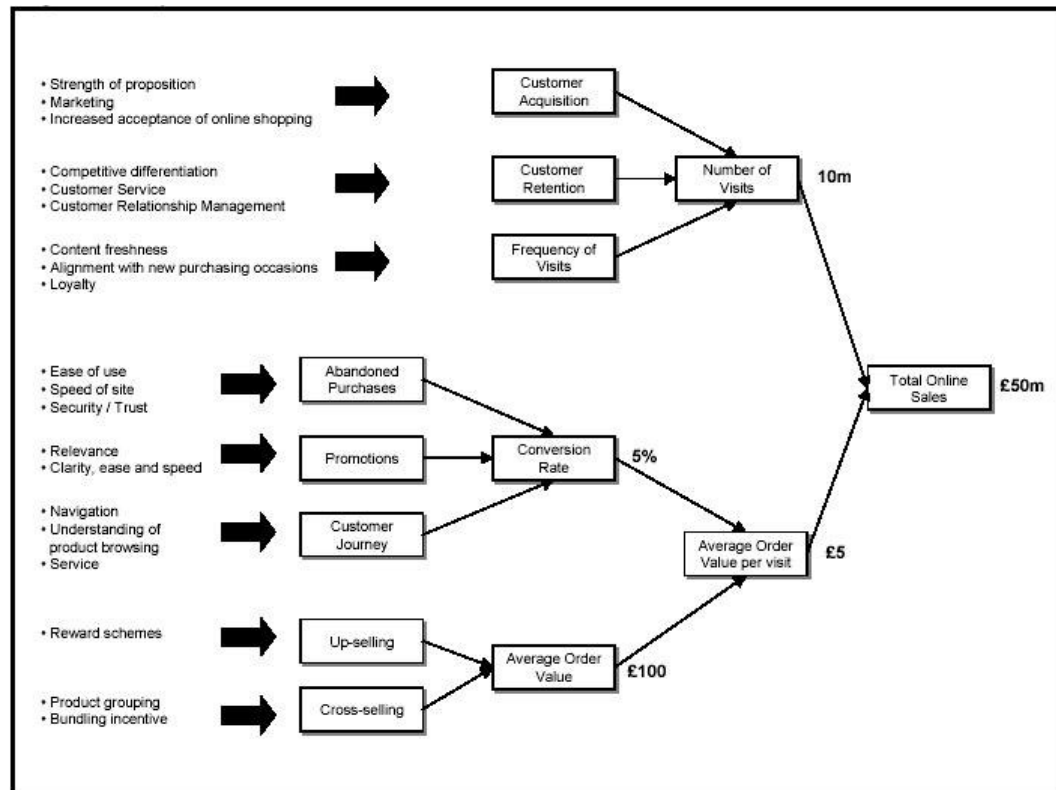


Figure 2.6-1 Map of business drivers for an e-tailor Adapted from: Friedlein, (2003, p.316)

Peterson (2004, passim) looks at the website customer life cycle (reach, acquisition, conversion and retention) and illustrates a framework identifying which metrics should be measured in order to increase the ROI through what he recognises as the four broad fundamental business models: *On-line commerce*, *advertising*, *lead-generation* and *customer support*. This book may be considered a follow-up of Inan's (loc. cit.) and Sterne's (loc. cit.) work, as it illustrates 'how' to apply Web analytics to an on-line business environment, while the other two books illustrated 'what' to measure and 'why' it is necessary to measure.

Cutler and Sterne (2000) explain how 'the value pyramid' in Figure 2.6-2 reveals to the Web analyst that the focus must be on the activities of individual customers, from a thorough analysis of the raw data inside the Web server. The authors explain how, as the business value increases, the volume of data worth managing diminishes to acceptable levels. Figure 2.6-2 clearly indicates that hits are a poor measure of business performance and a poor guide for traffic measurement, because they reflect poor website design rather than indicating customer behaviour (Inan, 2002, p.151; Sterne, 2002, p.59; Friedlein, 2003, p.286; Peterson, 2004, p.57).

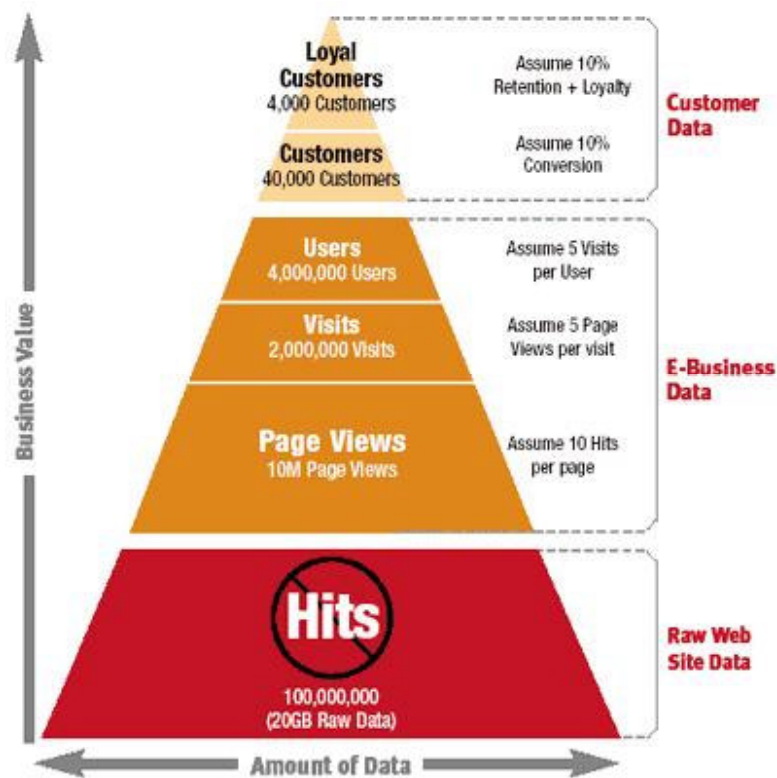


Figure 2.6-2 Value Pyramid: Adapted from: Cutler and Sterne, (2000, p.18)

RedEye (n.d.-a) in their study claim that most websites measure customer behaviour with tools that analyse IP-Based server logs to identify their customers, while the more experienced marketers utilise a Cookie-based approach for this purpose.

‘These findings blow the lid on what many people have suspected for a long time, that IP-based Web metrics are totally useless and any company claiming to provide accurate marketing and business data on this basis simply has no credibility. It’s crazy that so many businesses still make multi-million pound decisions based on bargain-basement management information. Hopefully now that we’ve quantified the problem companies will change their approach to measurement, inaccurate measurement only leads to mismanagement.’ (Paul Cook, Chief Executive Officer (CEO) RedEye cited ChannelMinds, 2003)

Internet protocol (IP) addresses are hardly ever the IP addresses of the users’ computers, and therefore this technique ‘can be a dangerously misleading indicator of the uniqueness of a website visitor’ (Peterson, 2004, p.25). RedEye (2003) state that this situation has become so unreliable due to the unavailability of fixed IP addresses (resolved by a technique known as Dynamic IP addressing, *see Friedlein, 2003, p.289*) that ‘two people in the same office using the same website at the same time will appear to the website as the same person looking at double the pages, at an impossible order’. Friedlein (2003) indicates how network management security services have disrupted the numbers of unique visitors because all users are channelled through one IP address. This report of RedEye (2003) finally challenges theories that state that errors originating from IP address recording cancel themselves out when taken aggregately.

Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic

communications) imposed on member states the introduction of legislation limiting the use of cookies, offering the user an ‘opt-out’ remedy to refusing such practices. Notwithstanding that cookie-based visitor figures are considered more accurate than IP-based figures, the report of RedEye (2003, p.11) consider them to have become ‘too inaccurate’ to base business and marketing decisions on them. Cookies have been labelled (Peterson, 2004), as invaders of privacy, yet they are an evil necessity for an easier identification of the user behind the browser, unless other techniques are adopted. Cookie activity has become fully controllable by the user, who is more aware of its existence. Microsoft® Internet Explorer 6 gave the facility to the user to choose a cookie policy, based on the provenance, purpose of use, and how long they should reside in the computer, but also included an overriding facility that deletes all cookies by simply clicking on a button on the Internet Options. A study conducted by NOP Research Group – www.nop.co.uk (cited RedEye, 2003) revealed that as more and more consumers become aware of cookies, cookie-based tracking will become ever more unreliable. The study also revealed that more and more users browse the Internet from more than one computer, while computers are being used by more than one person, which, since the cookie is resident on one distinctive computer, does not reveal to the website the identity of the unique user. These results prejudice future customer-centric marketing efforts geared to identify individual customer behaviour (RedEye, 2003).

Tagging is another option offered by Web analytics vendors on the market. The procedure includes placing JavaScript “tags” on each Web page ear-marked to be

tracked purposely designed to detect information about the visitor. When the visitor's Web browser downloads the Web page, the tag-code is executed recording necessary data on the remote Web server, enabling data collection and analyses. Peterson (2004) explains that page-tagging, as a tool on its own, is merely an activity for collecting information about Web browsers rather than about *human visitors*.

Although highly impossible to accomplish, login data is by far the most accurate of all the current available techniques (RedEye, 2003). Yet in order to obtain 100% accurate data, websites would have to request login parameters from all its customers, and all new visitors would have to register with the website whenever they land on any of the organisation's Web pages for whatever reason, a clumsy and impractical process.

Unique visitors are measured (by many applications) as to the number of users visiting the website over a predetermined period of time. Usually, cookie-based applications can specify visitor session length to the convenience of the website manager. StatCounter, an application service provider (ASP) offering a cookie service to some of the participants of this dissertation's survey, claim to immediately record as a 'unique visitor' every first-time user visiting a website monitored by them. If that visitor returns to the website while the session is still active, the user will not be counted as a unique visitor again, unless the session time expires. On the other hand, unlike Analog 5.32 and Webalizer – www.mrunix.net/webalizer, AWStats (2004), from their analysis of major tracking service providers, claim to register 'human visitors'. Analog and AWStats are ASPs utilised by some of this dissertation's survey participants. A list of all ASPs identified by the survey interlocutors is reproduced in Figure 2.6-3.

Application Service Providers utilised by survey respondents	
Service Provider - Application	Website
AddFreeStats	http://www.addfreestats.com
Analog - 5.32	http://www.analog.cx/
AWStats - 6	http://awstats.sourceforge.net
BraveNet	http://www.bravenet.com
HitsLink	http://www.hitslink.com/
SmarterTools Inc. - SmarterStats	http://www.smarterstats.com
StatCounter	http://www.statcounter.com
WebSTAT	http://www.webstat.com/
WebTrends	http://www.netiq.com/webtrends/default.asp

Figure 2.6-3 ASPs utilised by survey respondents

Peterson (2004, p.59) claims that since unique visitor measurement is not convenient for determining who has visited the website, analysts should attempt to acquire applications that support “unique user identifier” (UUID) methodologies, enabling them to further understand the visitor and be in a position to offer one-to-one marketing opportunities.

Friedlein (2003, p.277-279) and Cutler and Sterne (2000, p.51-52) illustrate how new website tracking techniques are focusing on identifying the individual customer, their attributes, preferences, the segment to which they belong, their value contribution towards the company and how these users feel about the company. Figure 2.6-4 adapted from the above-mentioned references demonstrates the evolution and the level of customer-centric e-metric sophistication. Website managers may position their organisation on the grid of Figure 2.6-4 which will enable them to discover whether the website measurement techniques in use are effective enough to capture the 10%

website customers that according to the Friedlein (2003, p.278) contribute to 90% of the revenue generated by the enterprise.

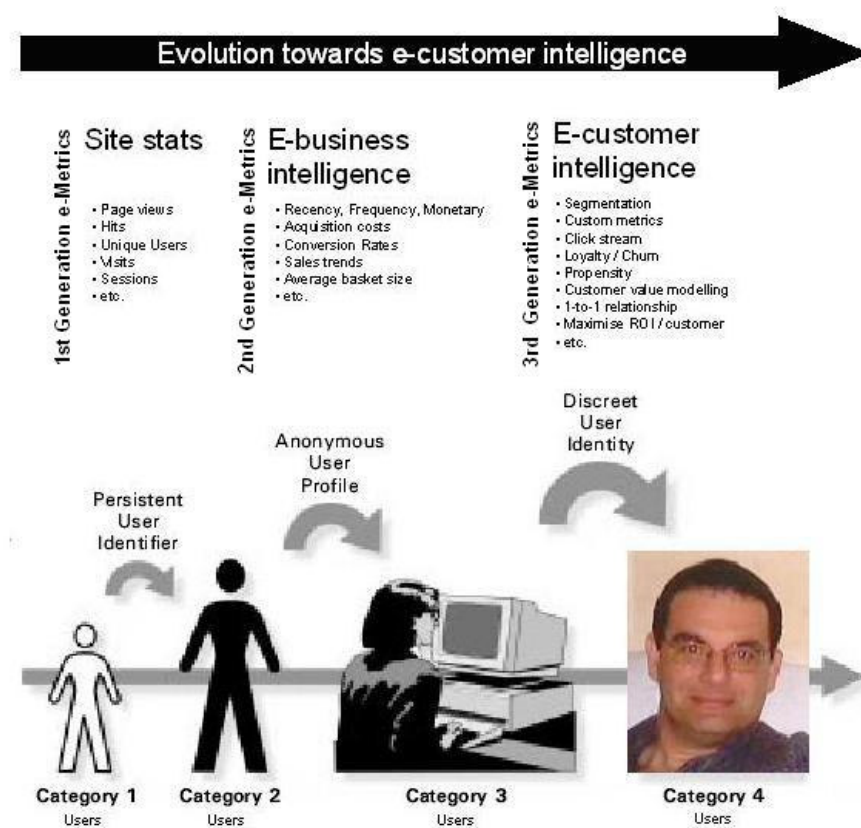


Figure 2.6-4 Customer-centric e-metric sophistication evolution: Adapted from: Cutler and Sterne, (2000, p.52); Friedlein, (2003, p.278)

‘Focusing on customer-centric metrics and measurement methods is nowhere more relevant than on the Web. It is the customers who are in the driver’s seat as they interact with a company through a Web site.’ (Friedlein, 2003, p.278)

2.7 USABILITY

‘Website usability is dominated by users’ ability to avoid errors in navigation and interpret new information’. (Nielsen, 2003)

E-consultancy (2004) emphasises the importance of employing usability specialists on an ongoing basis, encouraging customer feedback ‘to help improve the customer journey’ within the website. The results of a survey (Bunker, 2002) demonstrated that although 92% of the respondents have a budget for usability testing of their websites, only 2.3% of their annual budget is assigned to this process. Bunker (ibid.) concludes that those organisations that do not undertake usability research early in the development process spend 13% to 46% of their budget adjusting website design, after the Web analyst, through metric results, identifies the usability problem areas. Peterson (2004) stresses that the Web designers are usually the culprits for usability inadequacies, since they are more concerned with the visual impact, than with functionality and interaction with the user.

Figure 2.7-1 reproduced from a study performed by Nielsen and Landauer illustrates how just five laboratory users can identify 85% of all usability problems of a website (Nielsen, 2000).

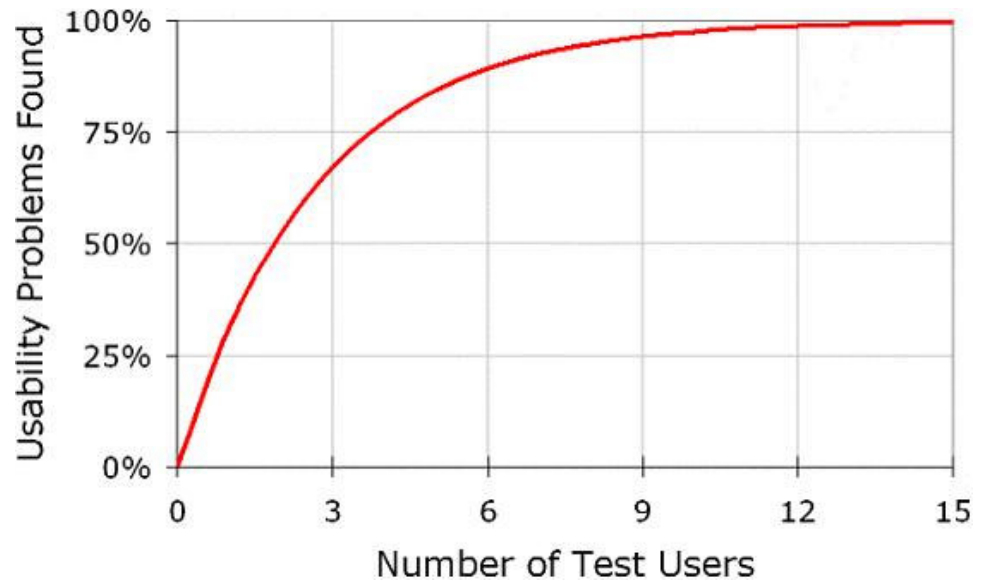


Figure 2.7-1 Usability graph: Reproduced from: Nielsen, (2000)

The author explains that elaborate usability tests are not necessary especially when the enterprise is on a tight budget, yet systematic usability engineering activities are necessary throughout the project lifecycle. The results expected from a usability website redesign, increases usability by 135% according to Nielsen (2003). Usability cannot be easily measured since usability, unlike ROI, is not measured in monetary terms (decrease in costs and increase in revenue) but in terms of increased/efficient use and higher user satisfaction. Nielsen's (2000) research results have shown that there was an increase of 100% in conversion rates, 150% in traffic, 161% in user performance and 202% use of target features. E-consultancy (2004) explain how users that find their way around a website easily, register a positive purchase experience, and are conditioned to return to the website, creating website loyalty and brand equity, making usability instrumental in creating competitive advantage.

‘Competitive advantage is now less about being fast; it is more about being smart. This means it is no longer acceptable for Websites not to answer to business success criteria and performance evaluations in the same way as other projects and initiatives, although the metrics and measurement techniques themselves need to be specific to the Web’ (Friedlein, 2003, p.269).

Rhodes (2001) explains that the ultimate aim of any website is that of increasing revenue and profits for stakeholders, investors, management, employees, and customers, obtainable by taking advantage of usability principles and techniques.

In the light of the above, it is pertinent to keep in mind that, as will be illustrated later in this dissertation, 86% of the respondents to the survey have indicated that they have never employed third-parties to perform any usability testing exercise on their website. On the other hand 5% of the remaining respondents conducted accessibility testing through the Foundation for Information Technology Accessibility (Malta) - <http://www.knpd.org/mittsfita/> considered the principal advocate and coordinator for making information communications technology (ICT) accessible for disabled people in the Maltese islands.

2.8 AN INTEGRATION PERSPECTIVE

The research paper issued by Riggins and Mitra (2003) published in November 2003, tackles a methodology ‘*functionality interaction*’ which allows the Internet strategist to map the organisation’s net-enabled applications into a visual representation (*see Figure 2.8-1*). The authors highlight the inter-relationships between these applications, defining metrics that will help in the analysis of the success of an e-business initiative,

enabling the enterprise to integrate this information into its overall business strategy, to generate value from its investment in Internet technologies.

Value Creation		E-Commerce Value Grid		
		Efficiency	Effectiveness	Strategic
Dimension	Time	Accelerate User Tasks	Eliminate Information Float	Establish 24/7 Integrated Service
Distance	Improve Scale to Look Large	Present Single Gateway Access	Achieve Global Presence	
Relationships	Alter Role of Intermediaries	Engage in Personalization to Look Small	Create Dependency to Lock-in User	
Interaction	Make Use of Extensive User Feedback	User Controls Detail of Information Accessed	Users Interact via Online Community	
Product	Automate Tasks Using Software Agents	Provide Online Decision Support Tools	Bundle Diverse Content with Rich Multimedia	

Value Creation		E-Business Value Grid		
		Efficiency	Effectiveness	Strategic
Dimension	Planning	Implement Rich Media for Company Wide Interaction	Provide Online Executive Information Systems	Facilitate Knowledge Management Between Partners
Development	Standardize Platform For Cross-Functional Design	Share Detailed Requirements Between Partners	Enable Concurrent Design Across the Virtual Organization	
Inbound	Support Electronic Transactions With Supply Partners	Generate Supply Flexibility Through E-Hub Communities	Offload Replenishment Responsibility to Supply Partners	
Production	Integrate Internal Systems	Exchange Production Data Between Partners	Optimize Utilization of Global Capacity	
Outbound	Support Electronic Transactions With Suppliers	Furnish Customized Instantaneous Order Status	Institute Direct Fulfillment via Logistic Partners	

Figure 2.8-1 Functionality Interaction Grid: Adapted from: Riggins and Mitra, (2003)

This dissertation does not examine the availability of these specialised technologies within the survey participating organisations' information technology (IT) structure.

Peterson (2004, p.238-242) argues that back-end data integration is a leap forward to 'the information quality of Web analytics data', which enables direct marketing to

customers, based on their on-line habits. Friedlein (2003, p.213-215) claims that the ultimate goal is to collect, manipulate and integrate all data the customer leaves behind across all points of interaction with the organisation (on-line or off-line), illustrated in Figure 2.8-2 as the *single customer view* (also referred to in other literature as the *enterprise customer view* or the *360 degrees customer view*). The author claims that this approach of integrating customer data with enterprise systems and business processes, is the ‘heart and engine’ of the organisation. It is at this point that the enterprise can really be considered customer-centric.

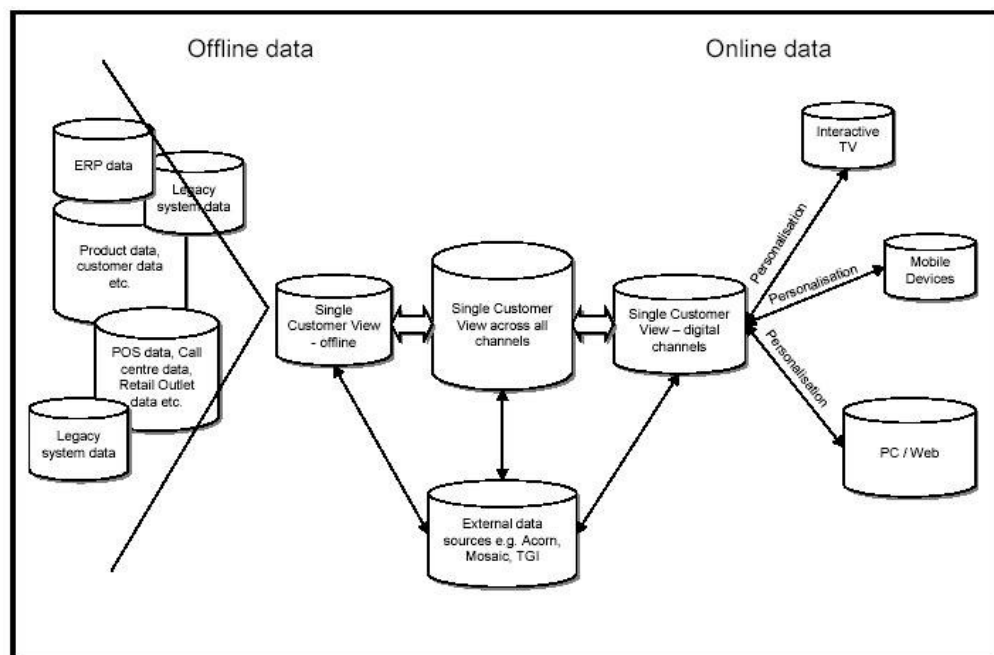


Figure 2.8-2 Data map of the single customer view: Reproduced from: Friedlein, (2003, p.214)

Data integration uproots privacy concerns. This is an issue not dealt with in this dissertation, as it is being assumed that organisations possess the necessary security measures to safeguard their own interests and the interests of their customers, and are in line with Data Protection legislations.

2.9 LITERATURE SUMMARY

The literature draws the attention to aspects of measuring customer activity on the website, with the ultimate objective of identifying the customer as a unique identified user (Peterson, 2004, p.56-57), contributing to the optimisation of ROI.

Cutler and Sterne (2000), Inan (2002), Sterne (2002), Friedlein (2003) and Peterson (2004) assume that the results of the proposed metrics are a reflection of the success obtained by each particular activity, such as website usability and marketing efforts. Riggins and Mitra (2003) reflect on the possibility that the data from such metrics is a result of the availability and quality of the resources and applications and the functionality between them. Although these functions might not generate positive cash flows when considered in isolation, a number of interrelated activities may contribute collectively to measurable benefits, for the effective and efficient performance of the organisation's ultimate strategy.

3 RESEARCH METHODOLOGY

'It is a capital mistake to theorize before one has the data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.'
Sherlock Holmes – *A Scandal in Bohemia* (Doyle, 1952)

3.1 THE SURVEY

This survey comprised a questionnaire which was prepared and targeted for the local market to investigate whether the website managers who administer and maintain their organisations' websites from the Maltese islands:

- **Are aware of Web analytics,**
- **Have access to Web measurement tools,**
- **Have access to e-Metrics tools of a certain level of sophistication and customer-centricity,**
- **Have the possibility and the resources of conducting in-depth analysis of the customers' data provided by the Web tracking tools,**
- **Take a reactive approach to changing websites and on-line strategies based on Web analysis for the purpose of increasing their organisations' return on investment.**

The purpose of this study is to gain an understanding of the extent to which the process of analysis of customer-related website traffic data contributes towards the success of the targeted organisations' Internet strategies. To test the hypothesis that organisations with a Web presence do not utilise Web analytics effectively to optimise their ROI, several considerations were included in the design of the research context.

First, the study focused on determining whether the target audience had access to website user tracking applications. The design allowed for the identification of the type of products in use and requested the informants, (on a voluntary basis), to identify the name and version of the product and the service provider supporting the application. The concept was to achieve a picture so as to determine whether data collection and analysis were being performed through tailor-made in-house software, or through Web analytics software installed on organisations' hardware, or via website measurement services offered by ASPs that host the application, the organisations' Web data and deliver the Web traffic analysis.

Second, the questionnaire was designed to establish the level of sophistication and customer-centricity of the Web analytics software in use by the cluster sample, in order to determine at which stage in the evolution path towards customer intelligence (*see Figure 2.6-4*) the target audience is positioned. To identify this trend it was necessary to determine whether the organisations, through the applications in operation, are collecting information grouped by Friedlein (2003, p.278) into the three distinct generation e-metrics: 'site stats', 'e-business intelligence', or 'e-customer intelligence'.

Third, to determine the type of browsing history data that is being held by organisations that can potentially contribute to analysing customers by their lifetime contribution towards the organisation, the questionnaire was designed to solicit respondents to indicate the level of customer anonymity they practiced on the website tracking facilities. This scenario enabled the researcher to determine to what extent the tracking application methods in use are capable of identifying unique visitors.

Fourth, those organisations that declared making use of some form of Web tracking application were solicited to reply to questions to determine the extent to which the organisations react to customer-centric website metrics. The design necessitated that insight would be obtained to determine whether these website tracking tools are effectively used to implement successful customer oriented organisation-wide and website strategies.

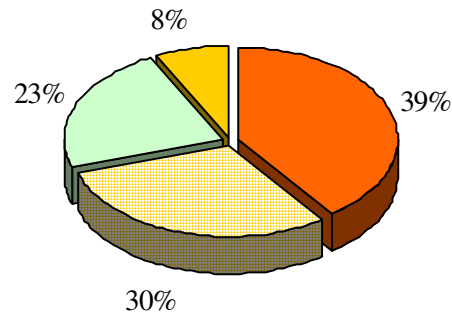
Fifth, the questionnaire design included questions to establish whether organisations that performed some form of website user tracking were in fact making use of these tools in the most efficient and effective manner. The idea was for the interlocutors to identify what obstacles, if any, were inhibiting the organisation from maximising the potential of the website measurement techniques.

Sixth, it was necessary to identify the frequency of the periodic 'in-depth' analysis that respondent organisations performed with the aim of improving their ROI. To

determine the level of intensity by which these organisations view the impact that these website traffic applications have on the success of their enterprises, the questionnaire was designed to identify with which frequency this type of analysis is performed.

For the purpose of collecting the required information, a single informant - the website manager, who administers the targeted websites - was selected as the respondent. By using a single informant, it was not intended to get only the website manager's view on the decision making process within the organisation, but the purpose was to find a knowledgeable person who was able to report on the strategies and the customer-related Web technologies adopted by the organisation. Prior research conducted by Cutler and Sterne (2000) indicates that website managers are considered an integral part of the senior management team, because they either exert primary influences on, or have sufficient first-hand information about their organisation's website strategies, as they fit within the overall business strategy. For this purpose and to identify the validity of the questionnaire, the interlocutors were asked to identify themselves by name and position held within their organisation. As illustrated in Figure 3.1-1, 92% of the respondents of this survey who disclosed their responsibilities hold top executive positions within their organisations while only 7% of the total survey respondents are Web administrators and non-executive individuals, as clearly depicted in more detail in Figure 3.1-2.

Respondents by declared role within organisation



92% of respondents who disclosed their role hold executive positions within their organisations.

- Owners – Directors – CEOs - Executive Directors
- Web Managers - IT & IS Managers
- Research & Marketing Managers – Sales Executives – Communication & PR Executives
- Website Administrators & Non-Executive

Figure 3.1-1 Survey respondents by declared role within organisation

Survey respondents by responsibility within organisation	
Responsibility	Number of respondents
Owners – Directors – CEOs - Executive Directors	16
Web Managers - IT & IS Managers	12
Research & Marketing Managers – Sales Executives – Comm. & PR Executives	9
Website Administrators & Non-Executive	3
Details not divulged	3
Total respondents	43

Figure 3.1-2 Survey respondents by responsibility within organisation

3.2 DATA COLLECTION METHOD

The survey was conducted by dispatching emails containing a Microsoft® Excel™ spreadsheet questionnaire rather than conducting alternative research methods such as direct interviews, telephone and mail. The email survey method of data collection was chosen for various reasons. Lack of time within which to conduct and finalise the survey was the major factor. The email transmission time in which surveys are delivered surpasses by far any other traditional form of communication. In fact a few responses were received within hours from the pilot study, the original survey transmission and the follow-up survey. Marketers have not committed themselves on the best day to send email surveys as it depends on the content and the target audience (Evans, n.d.), yet there seems to be consensus that Friday is the worst day (Barki cited Drew, n.d.). MacPharson (2000) states 'Fridays are too late in the week (and too close to the weekend) to be taken seriously'. The researcher therefore chose to dispatch emails on weekends through to Wednesdays, to limit the recipient from receiving any communication on Fridays.

Another decisive factor was the cost element. It was considered less expensive to send the questionnaires by email than to pay for postage, interviewers and telephone bills. Collection of data through the same medium (receiving emails) was considered superior to any other form of communication of the survey responses, since it facilitated the editing, sorting, and analysis of data, which were all returned in the same format.

To corroborate the methodology undertaken, the study conducted by Tse (1998) was considered. It identifies six major advantages of using email surveys compared to other traditional mailing methods: email is cheap, it eliminates mail processing, transmission is faster, it is less likely to be discarded as junk mail, it encourages respondents' replies, and it can be perceived to be environmentally friendly. The email as a medium chosen for this research was considered most appropriate since the population chosen and the survey content is oriented around Internet tools, and is most likely the preferred and most familiar medium with the target informant.

An evaluation process to decide on the consequences of non-delivered email to the person identified to receive it was conducted. In the case of this survey it was not possible to acquire the personal details and the email address of the 'website manager administering and maintaining the website from Malta'. It was therefore decided to use the 'info@' prefix in the email address on the researcher's hypothesis that it is customary for 'info@' administrators of email boxes in organisations to act as dispatchers and to forward emails to the persons concerned. Only 9% of all the survey respondents actually replied from the 'info@' email address, all others responded from their personalised email address, confirming the hypothesis.

3.3 CRITERIA OF SAMPLE SELECTION

As it was impossible to obtain a list of all Maltese administered websites, the researcher focused on a specific cluster of the total Maltese website population, having as the final part of their domain name, the extension *.mt*. Cluster sampling as defined by Easton and McColl (n.d.) 'is typically used when the researcher cannot get a

complete list of the members of a population they wish to study but can get a complete list of groups or 'clusters' of the population'.

NIC (Malta), being the authority awarded the top-level country domain for Malta (.mt) since 1992, was identified as the owner of the official repository of all domain names registered in Malta. NIC (Malta) through its website www.nic.org.mt provides the user with a complete detailed directory of .mt domain names, partitioned in sub-domains with the extensions .com.mt, .edu.mt, .net.mt, .org.mt, .tm.mt, and uu.mt, available together with registrant name.

The list extracted directly from the NIC (Malta) website was transferred to a spreadsheet. The domain name was manipulated within the spreadsheet in such a way as to concatenate the prefix 'info@' to the domain name creating a unique email address for the four available sub-domains with the following format: info@domain.com.mt, info@domain.org.mt, info@domain.net.mt and info@domain.edu.mt.

The survey was sent via MS® Outlook Express 6 to all NIC (Malta) registered domains with the email address prefix 'info@'. The issue of deliverability arose. What was to be considered a delivered email with respect to this emailed survey? According to Popov and McDonald (2004) 'with email, it's simply the ability to deliver a message to a recipient's inbox'. Using this standard, all permanently undeliverable emails, also known as a 'hard bounce', determined through ISP automated reports received, were eliminated from the sample size, whereas temporary failures also

known as a 'soft bounce', were retained unless they became permanently undeliverable.

The websites for the delivered emails were checked individually by keying in the uniform resource locator (URL) in the Web browser, to determine whether a website existed under the specific domain. 'Under construction' websites were eliminated from the total cluster population. URL's with extensions *.mt* that were rerouted to other sites with a different domain were retained in the sample, for example www.rerouted.com.mt to www.rerouted.com. URL's with extensions *.mt* that were rerouted to other sites with a different domain name but with an *.mt* extension already available in the sample population were eliminated from the sample size.

The URL's of the organisations that replied to the survey whose domain name extension was not a *.mt*, were thoroughly examined, in order to determine whether the respondent organisation was also registered with a *.mt* domain in the full NIC (Malta) register. After this examination only nine survey replies with extension *.biz*, *.info* and *.com* and one survey reply with extension *.org* had not been matched to a specific *.mt* domain in the original registered list. These replies have not been eliminated from the survey results and have been categorised with the total list of domains as follows: *.biz*, *.info* and *.com* with *.com.mt*; *.org* with *.org.mt*, thus increasing the total population size of NIC (Malta) registered Maltese domains by 0.45% and the cluster size by 1.92%. The total population sample of cleansed *.mt* domains, as explained above, was established at 2,256 domains, while the total cluster sample population of delivered emails was determined at 477, categorised by sub-domains as indicated in Figure 3.3-1.

The absolute difference between the number of registered domains and the number of delivered emails is due to a high occurrence of recognisable international and local brand names booked with an *.mt* domain extension, but not having a corresponding live website. This was visually verified against the registrant information available by NIC (Malta) on its website, using filtering and search techniques on the Excel TM spreadsheet.

A final population size of 477 Maltese *.mt* filtered domains (or rerouted, not to an *.mt* domain) with live websites having a valid contact email address with the pre-fix ‘info@’ is being considered a representative cluster of the total Maltese website population.

Total population of delivered surveys to filtered registered <i>.mt</i> domain names in Malta: by sub-domain		
Sub-domain	Number of registered domain names	Number of delivered surveys
.com.mt	2,041	400
.org.mt	155	63
.net.mt	41	6
.edu.mt	19	8
.tm.mt	-	-
.uu.mt	-	-
Total <i>.mt</i> domains	2,256	477

*Figure 3.3-1 Total population of delivered surveys to registered *.mt* domains in Malta*

3.4 PILOT STUDY

The pilot study was administered to 25 participants in the cluster. These were unaware that the questionnaire was a pilot study. The organisations were personally selected by the researcher, by 'hand picking' them from the cluster list, after having confirmed that the domain had an active website, and a contact email was available through the website content. The researcher obtained a 44% response rate from the pilot study.

As recommended by Balnaves & Caputi (2001, p.87) all the responses from the pilot study were examined in order to identify design problems and benefits, to reduce possible bias and error and to enhance construct and internal validity. Since Balnaves & Caputi (2001, p.82) also claim that 'wording for questions in a questionnaire is not only a matter of coming up with good questions that relate to the research question or hypothesis of interest but coming up with good questions that can be understood', the questions were scrutinised and amended to follow the recommendations in the checklist provided by DeVaus (1985, p.83). The wording and language ingredient was adjusted to fit the nature of the short phraseology. The 'glossary of terms' document was incremented with more definitions, to enable the user of the questionnaire to look up any words that might not have been clearly understood, or that might be understood in a different manner. The email message accompanying the survey was also amended, together with the introductory paragraph of the questionnaire, to instruct the receiver to forward the email to the appropriate person within the organisation who was intended to be the researcher's targeted informant, as explained earlier in chapter 3.1.

An identical pilot survey was sent to all the selected organisations, save that 12 of them received the questionnaire with a 'blue colour' background, whilst the other 13 received a questionnaire with a white background. The remarks from the respondents on the accompanying email received were general in nature, but were directed towards the topic chosen and the questionnaire detail. Three of the respondents also commented on the attractive layout, the design of the questionnaire and the ease of use. The comments of these three pilot study respondents were analysed and it was revealed that all had received a 'blue background questionnaire'. In view of the positive comments received, the researcher concluded that the 'blue background' was more appealing. Eventually, the first survey and the follow-up questionnaire all had a blue background colour.

The functionality of the questionnaire was changed enabling the use of the Excel TM horizontal scroll bar to cater for users with all kinds of monitor sizes, having disabled its use in the pilot study. The length of the questionnaire was also considered, and in order not to register a negative impact on its effectiveness, the researcher decided not to reduce the number of questions, albeit risking an adverse response rate as a result of its six-page length. It is pertinent to note that thanks to the pilot survey a categorisation section to the questionnaire was included in order to distinguish between respondent organisations' market sectors.

The pilot study immediately unearthed the researcher's bias of underestimating the availability of website traffic systems in use by the total population. The responses received from the pilot study led the researcher to identify the need to establish

whether organisations that used Web analytic tools were in fact using these tools to change strategy based on website traffic results. It was therefore considered whether the survey should include questions of this nature. It was decided that in order not to influence and lead respondents (DeVaus, 1985), the original survey would not include such questions. On the other hand three straightforward questions were designed in a “follow-up questionnaire” that were eventually delivered only to those interlocutors who confirmed that they track some form of user activity on their websites.

3.5 SURVEY OUTLINE AND QUESTION DESIGN

The email survey was launched on the 3rd June 2004 and replies received up to the 5th July 2004 were included in the data analysis. As explained earlier in chapter 3.1, 43 organisations out of 477 participated in the first questionnaire (*see questionnaire on page 146*), representing 9.01% of the total population cluster. The follow-up questionnaire (*see follow-up questionnaire on page 152*) delivered to 34 of the first questionnaire respondents, whose organisations track website activity, received a response rate of 91.2%.

Questions 1 to 19 and question 22, placed to the respondent were in simple dichotomy style, requiring an answer by a mouse click on one of two alternative ‘radio buttons’, either a ‘Yes’ or a ‘No’. In the event that the interlocutor responded in the negative the questionnaire directed the respondent to the next question. If the reply was in the affirmative (excluding questions 18, 19 and 22 which required no further responses) a set of fixed-alternate (otherwise known as closed-ended) questions were presented to the respondent, which the interlocutor had to click ticking a ‘check-box’. The choice

of presenting this type of closed questions was to avoid vague and inaccurate replies. The researcher decided that in view of the structure and detail of the responses required, had the respondent been asked open-ended questions, it would have been more difficult for the respondent to answer the questions, as each question required that the respondent refers to the Web user traffic application, turning back to the questionnaire to reply to the question. The researcher was aware that the design of the questions required an element of research, needed to anticipate in advance the respondents' replies. Questions 1 to 17 required the respondent to answer questions related to options available through the Web analysis system in operation by the organisation. Research was undertaken to establish the most important Web measurement benchmarks available on the market. Research was conducted by examining to a certain depth the options of different products made available by Web measurement and analysis vendors through their websites (*see vendors list on chapter 9.3*). These functions were grouped according to their relevance and functionality and a question was structured around these in checklist style where the respondent could choose any number of options that were relevant to the question being answered. On the other hand, the researcher was aware that closed questions are much easier to interpret since they are standardised and therefore can be analysed statistically.

Question 22 required the respondent to click one radio button that closely described the organisation's industry.

Questions 17 and 22 had an open-ended “other please specify” type box where the respondent could place any other option which might have been missed out or overlooked by the researcher. With respect to question 17 only one respondent utilised this option but the reply is not being considered relevant. Those who entered their industry category in this “other” box were appropriately categorised by the researcher, according to the indications provided by the respondent.

Question 21 required the respondent to mark a check box next to the respondent’s most familiar Web analytic terms.

Questions 23 to 25 were presented only to those organisations that track user activity on their website.

Questions 23 and 24 did not contain the initial simple dichotomy question as in questions 1 to 19 and 22, but were of a fixed-alternate nature containing the “other please specify” option.

The last question 25 was in a frequency determination style, where the respondent was required to select from the choice made available how often in a year the organisation performed an “in-depth” analysis of Web traffic results.

3.6 ADDITIONAL STEPS TO INCREASE RESPONSE RATES

Pearson NCS, (1997) suggest that 'a survey program is only as effective as its weakest link' indicating that mailed surveys compared to other face-to-face or telephone surveys produce low percentage returns. All of the 477 websites in the selected population cluster were examined, and additional emails were sent to those organisations that provided on their website an email address different from the original one sent.

Pearson NCS (1997) indicate that incentives 'are effective in increasing the response rates for mail surveys'. The respondents were offered an electronic copy of this empirical study. As suggested by Jensen (n.d.) this offer was optional, supplied only if specifically requested by the respondent. 88% of the respondents chose to receive the published research document.

With respect to the follow-up questionnaire, those who did not reply were reminded by email to complete the document on three separate occasions.

3.7 TREATMENT OF MISSING AND APPARENTLY INCORRECT ENTRIES

Question 20 is not being given much weight for the purposes of this analysis, since the researcher believes that there exists an element of confidential sensitivity with respondents in replying to this question. 50% of respondents chose not to divulge this sensitive data to the researcher as explained in chapter 3.9.3.

In cases when the interlocutor indicated on the questionnaire that the organisation performed some form of activity, yet the activity was not marked, the data on the research data collection spreadsheet was modified to indicate that that type of activity was not performed. Out of 43 respondents with a possibility of error of 13 instances per questionnaire only seven instances of this type were recorded, registering a possible error element of 0.01%.

While other techniques exist to adjust missing entries, the 'series means method' was chosen since it was considered simple, the least biased for this research and did not impair the response rate (Cohen & Cohen, 1983, cited Balnaves and Caputi, 2001). With this method, a case of a missing entry on a particular variable was assigned the mean of all the existing respondents for the same question. This method was deemed appropriate because it occurred in only two instances, and only in question 22. This question was directed at determining whether organisations have undergone a usability testing exercise performed by independent third parties. The results from those who specifically replied to this question show that 85.4% never performed such an exercise. Having assigned a negative response similar to the mean of all the other respondents, this effected the final results by 0.4%.

With respect to question 23 the researcher has considered that if a respondent ticked any of the following check boxes: 'Site traffic results do not influence changes in strategy' or 'Website changes are not influenced by website traffic results', or 'Website is changed through experience not as a result of website traffic results', or 'Do not know how to match metric results to strategy changes', then the interlocutor could not

have marked any of the other options in this question, as the strategy changes could not have been performed as a consequence of Web traffic results. 33.3% of the respondents who marked the above-mentioned options had this incongruence in their replies. To rectify this anomaly the researcher cleaned the responses by unchecking any of the marked option boxes save those mentioned above.

The researcher also considered that unless an in-depth Web traffic analysis was performed by the organisation, the respondent could not claim that website measurement influences website strategy. In occurrences when interlocutors who marked radio button 'Never' (*performed an in-depth analysis of website traffic results*) in question 25 and did not tick any one of the following check boxes in question 23: 'Site traffic results do not influence changes in strategy' or 'Website changes are not influenced by website traffic results', or 'Website is changed through experience not as a result of website traffic results', or 'Do not know how to match metric results to strategy changes', the researcher cleaned the results by removing all responses to question 23 and marking the option 'Website changes are not influenced by website traffic results'. Only one anomaly of this kind resulted.

3.8 METHOD OF ANALYSIS

The data was entered manually into an Excel™ spreadsheet, directly from the email replies received and were later checked independently for accuracy, prior to the commencement of the analysis. The spreadsheet was organised in such a manner that although the details of the respondent organisation were entered in the document they were not visible to the researcher during analysis to avoid any form of bias. Pivot

tables, filtering, frequency tables, graphs and charts were used to determine data relationships and assist the researcher.

3.9 LIMITATIONS

3.9.1 SAMPLE SELECTION – MALTESE WEBSITES

Although the researcher acknowledges the possibility of bias as a consequence of the selection process, this list is considered as a complete heterogeneous cluster of the total population of Maltese administered websites, until detailed future research is published identifying a larger significant population sample. The research could have covered all *.mt* sites by examining each of all the *.mt* domains and searching each site for a contact email address. A preliminary attempt of this process was performed, and it proved very difficult and laborious to achieve the desired outcome in the prescribed time. The cluster sample method on which this research was performed proved to be quick and precise, taking into account the time constraint.

3.9.2 SURVEY RESPONSE

The survey may have posed a problem to potential respondents for two reasons: firstly, the questionnaire may have been so specific that a willing respondent may have been unable to reply because of lack of knowledge, and secondly, a potential respondent who was able to reply may have been unwilling to divulge information about the success or otherwise of the organisation's on-line strategies, causing what is known as non response error.

Another limitation may have been the respondents' unfamiliarity with and/or the unavailability of the medium used for the survey (email, MS®, Excel™).

Although the survey contained a detailed 'glossary of terms' within its structure, this added complexity could have induced the recipients to disregard the survey. Two emails were received from targeted website administrators indicating that the surveys were being forwarded to their website developers due to its high technicality level. No record was taken of this occurrence in the research data spreadsheet. Although it could be argued that these organisations did not perform any customer website tracking, it could also be upheld that organisations could be in possession of website tracking facilities, but the analysis and recommendations could be performed for them by external consultants.

As the survey was presented on a Microsoft® product this could have posed two problems: either the recipient did not possess the tools to read the spreadsheet (because of version incompatibility or lack of the Excel™ tool) or the recipient was not familiar with spreadsheets, in particular those containing "radio buttons" and "check boxes". The instructions on the survey indicated that the completed survey could be returned directly via the "send to" option from the spreadsheet. This may have caused a problem for those who had the option disabled by their network administrators or for other reasons. This notwithstanding, the postal address of the researcher was included for those who may have encountered delivery problems. No such responses were received through the postal system.

3.9.3 CONFIDENTIALITY AND PRIVACY POLICY

The issue of confidentiality was given paramount consideration throughout the planning process of the questionnaire. The survey delivered made it clear to the recipients that the data submitted in this dissertation would include only data of a statistical nature and there would be no possibility of identifying and linking the data to the respondents. The researcher also informed the recipients of the emails that the organisations' responses would not be divulged to third-parties. A few respondents were clearly concerned about this issue, and voiced their concern when sending in their replies. This limitation had been predicted and in fact the questionnaire included only one question of a specific nature, to avoid confidentiality and ethical issues. Question 20 was specifically drafted to test the organisations' reluctance in divulging specific, precise, quantifiable and sensitive organisational data to the researcher. On a voluntary basis, question 20 requested the respondent to provide website statistics from the organisation's Web analytics tools. Average monthly 'Hits', 'Page Views', 'Visits', and 'Visits by Unique Visitor' were solicited. The results show that only 50% of those who have some form of on-line tracking possibilities were inclined to divulge this information to the researcher. The rest of the respondents did not reply to any of the four parameters requested. It was therefore decided not to delve deeper into trying to obtain this kind of sensitive data.

3.9.4 SPAMMING AND ISP

A delaying problem arose throughout the survey procedure with the researcher's ISP. Since the initial volume of emails was large and contained the same subject title with

the same attachment, on various occasions the ISP automated anti-spamming system detected this activity and blocked the use of outgoing emails. The ISP was contacted every time and the automatic lock released, a procedure that took an average of 24 hours per occurrence, delaying the dispatch process.

4 PRESENTATION AND ANALYSIS OF DATA

4.1 SURVEY RESPONSE RATE

The questionnaire was delivered to 477 organisations equivalent to the total population of the target cluster of Maltese *.mt* filtered domains (or rerouted, not to a *.mt* domain) with a live website having a valid contact email address with prefix 'info@'. 43 organisations replied to the first questionnaire (questions 1 - 22) delivering a response rate equivalent to 9.01%. The follow-up questionnaire (questions 23 – 25) delivered to all 34 organisations who indicated in the first questionnaire that they conduct some form of on-line website user tracking, received a response rate of 91.2% equivalent to 31 respondents.

4.2 MARKET SECTORS

The questionnaire allowed the respondents to categorise their organisation into one of 20 market segments (*for a list of sectors see questionnaire on page 146*). In order to protect the confidentiality of the respondents the researcher has deliberately narrowed the categories to 7 significant market sectors. Figure 4.2-1 illustrates how the participants of the survey are distributed into their representative market sectors. 51.2% of respondents covered the sectors of retail, wholesale, manufacturing, service, banking, finance and IT. The largest sector is represented by the service industry, banking, finance and IT industry, covering 27.9% of the total respondents, followed by the retail, wholesale and manufacturing sector covering 23.3%.

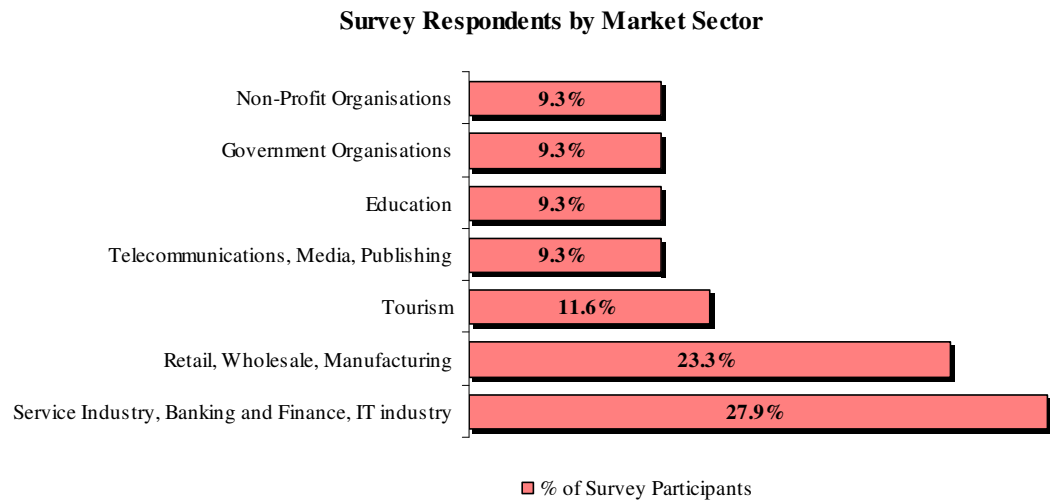


Figure 4.2-1 Survey respondents by market sector

4.3 EXPOSURE TO WEBSITE USER TRACKING FACILITIES

Question 1: Do you use any Web traffic applications to track user activity on your website? **Base:** All organisations

Question 2: Do you use and in-house Web server log file analysis to track user activity on your website? **Base:** All organisations

Question 3: Do you use page tagging systems to track website activity on your website? **Base:** All organisations

Question 4: Do you use ASP's to track website activity? **Base:** All organisations

Questions 1 to 4 of the survey were organised to determine whether respondent organisations are exposed to on-line website user tracking facilities. As illustrated in Figure 4.3-1, 79.1% of the respondents (equivalent to 34 out of a total of 43 organisations) reported having the possibility of tracking on-line users on their websites.

Organisations tracking online user website activity

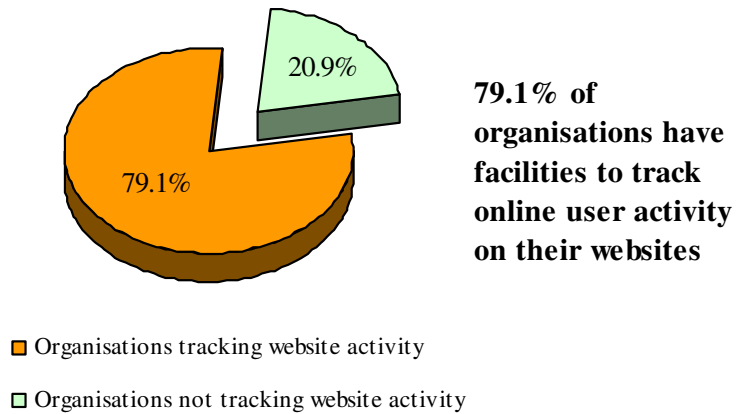


Figure 4.3-1 Organisations tracking on-line user activity on their websites

While all other sectors have a relatively high incidence of availability of tracking facilities, as can be observed in Figure 4.3-2, only 50% of the organisations in the retail, wholesale and manufacturing industry are exposed to this functionality. Interestingly, all Government, telecommunications, media, publishing and tourism organisations surveyed claim to have these tracking facilities available.

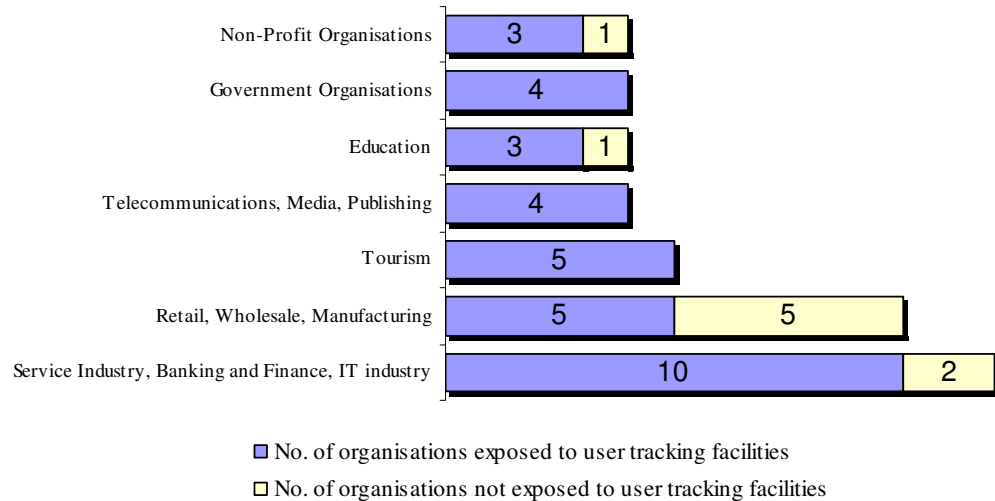
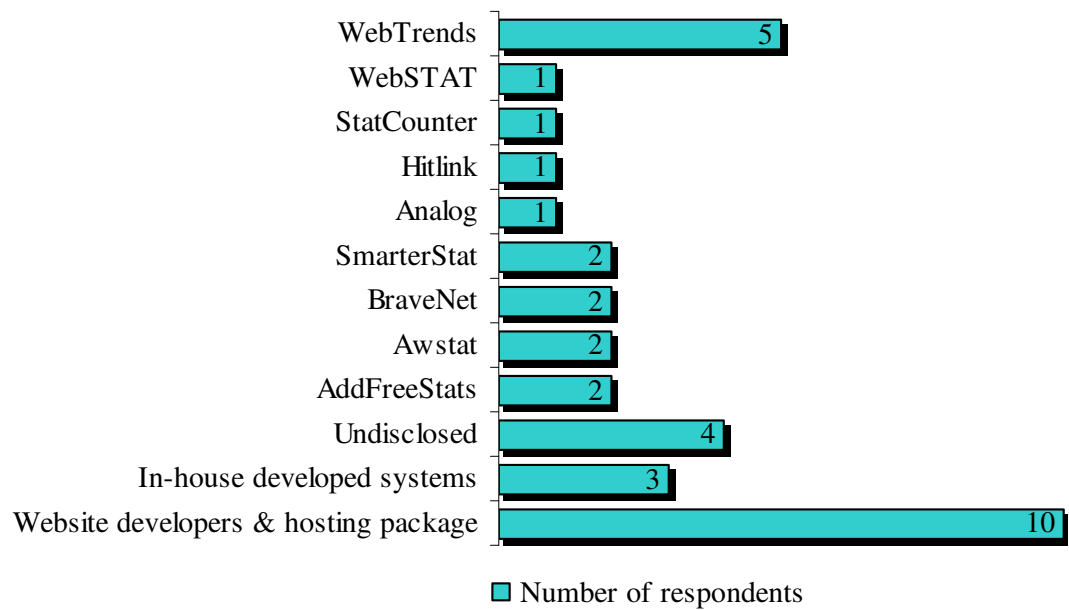
Organisations tracking online users on their websites: by market sector

Figure 4.3-2 Organisations tracking on-line users on their websites by: Market Sector

Although the availability of website on-line user tracking applications answers one of the research questions, this does not answer the question as to whether these applications are being properly utilised, an issue that shall be addressed further on in the analysis. Furthermore, in depth analysis was performed on the data obtained from questions 1 and 4 to determine which tracking applications were being utilised by the respondents, to attempt to answer the enigma as to what determined the unexpected high incidence of organisations availing themselves of such applications. When the results in Figure 4.3-3 are co-related to the replies of the rest of the questionnaire there is reason to believe that a large number of organisations are utilising user website tracking applications of a low level of sophistication, usually available for free from the ASPs listed in the chart or provided as part of a package offered by their Web developers and/or Web hosting service providers. Of particular interest is the fact that 33% of respondents (excluding the undisclosed) indicated that they utilise applications

provided by their website developers and website hosting service providers as part of a complete package.

Applications used to track online visitors



Questions: 1 to 4. Base: All organisations that collect on-line website traffic

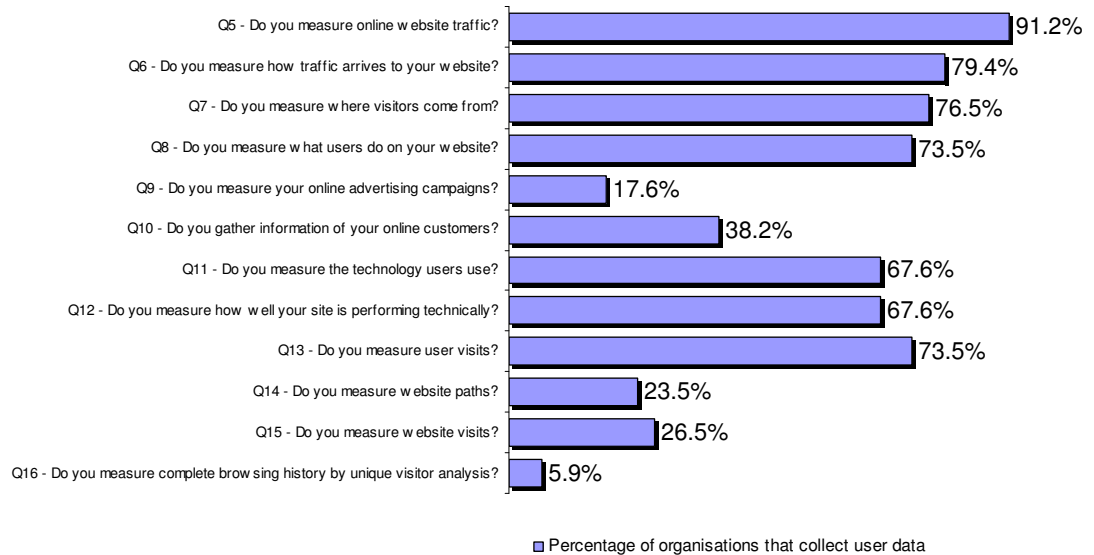
Figure 4.3-3 Applications utilised by survey organisations to track on-line visitors

4.4 ORGANISATIONS' ON-LINE USER DATA GATHERING PREFERENCES

Figure 4.4-1 enlists all questions 5 through 16 posed to respondents that have some on-line website tracking possibilities and illustrates which data gathering techniques are most popular with these survey respondents. The most unpopular techniques are those related to collecting data on advertising campaigns, on-line customers personal data, website paths, website visits, and complete browsing history analysis by unique visitor. This is a clear indicator that most surveyed organisations are not equipped with sophisticated Web analytics tools, and to a certain extent confirms the hypothesis that most of the tools installed are of a low cost budget. On the other hand, more than 50% of these organisations are eager to learn how much Web traffic they get on their website, which sites send them most traffic, where visitors come from, what users do on their websites, what technology users use, how well the site is performing technically, and what happens on the website per user visit.

What user data are organisations collecting?

(questions 5 to 16)

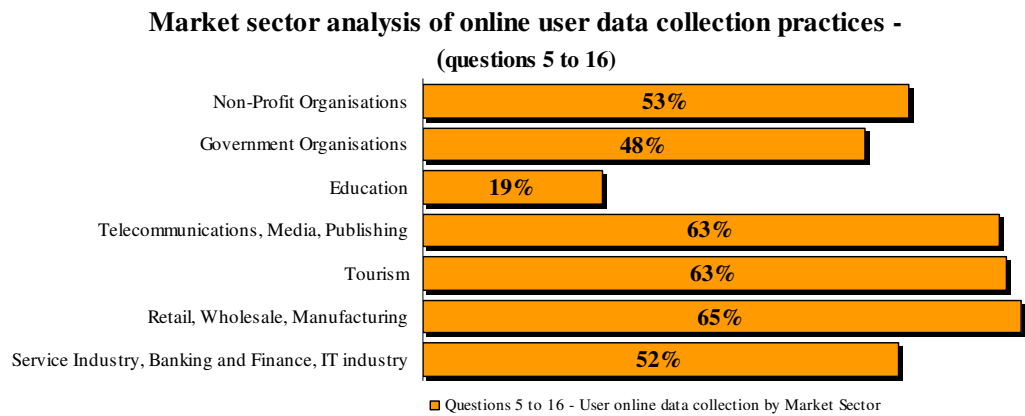


Questions: 5 to 16. **Base:** All organisations that collect on-line website traffic

Figure 4.4-1 Organisations' on-line user data collection preferences

Because of the issue of confidentiality the researcher has decided not to publish the data in detail (metric by metric) by market sector in this analysis to avoid the possibility of identifying what kind of data collection exercises a specific individual organisation is performing or is not performing. However, Figure 4.4-2 gives a clear indication which market sector is utilising the techniques suggested in the survey questions 5 to 16, measured aggregately. It can therefore be established that those survey participants coming from the telecommunications, media, publishing, tourism, retail, wholesale and manufacturing sectors that have the availability of website tracking applications, replied that they utilise over 60% of the data collection activities grouped per question. This statistic is indicative as it identifies the availability of the product, and a more accurate statistical representation will be provided in chapter 4.5

in order to establish whether the respondents measure a mix of the micrometrics attributed to the measurement function. The results obtained for each micrometric presented in chapter 4.5 are being accompanied by a ‘*micrometric popularity index*’ purposely devised to give an indication of the micrometrics’ popularity by sector calculated by using the means of micrometric occurrences to establish their popularity within the market sectors (key: ↑ = ‘most popular’; ↓ = ‘not popular’).



Questions: 5 to 16. **Base:** All organisations that collect on-line website traffic

Figure 4.4-2 Organisations’ user data collection practices by: Market Sector

4.5 METRICS ORGANISATIONS USE

4.5.1 TO MEASURE HOW MUCH TRAFFIC THEY GET ON THEIR WEBSITE

Question 5: Do you measure on-line website traffic? **Base:** All organisations

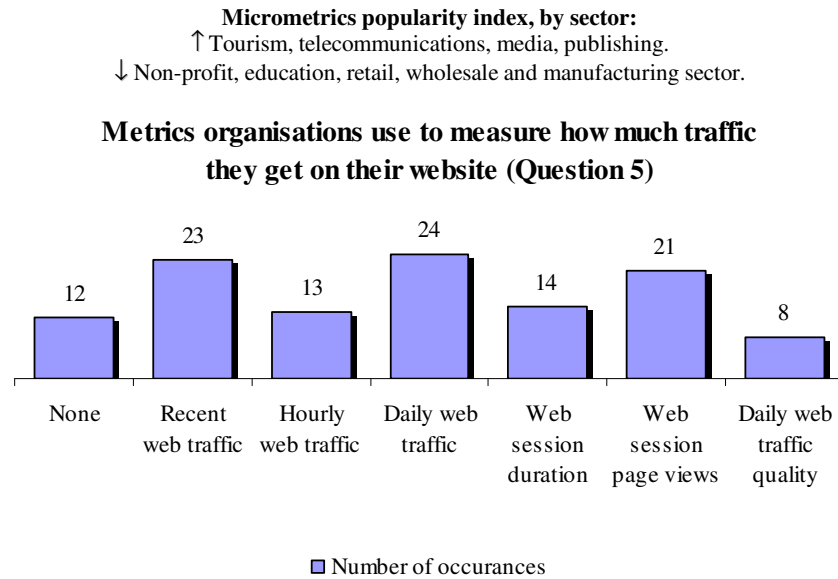


Figure 4.5-1 Metrics organisations use to measure how much traffic they get on their website

72.1% of the organisations are in a position to observe how much Web traffic gets on their website. This primary measure (*details set out in Figure 4.5-1*) is the most widely used by the respondents of the survey. Most popular micrometric measures - recent Web traffic, Web session duration and Web session page views – inform the user about the basic Web activity during a specified time window. A reason for this result could be that although there is awareness about website measurement, these industries are being offered very basic measurement products.

4.5.2 TO MEASURE HOW WEBSITE TRAFFIC GETS TO THEIR WEBSITE

Question 6: Do you measure how traffic arrives to your website? **Base:** All organisations

Micrometrics popularity index, by sector:

↑ Tourism, telecommunications, media, publishing and government organisations.

↓ Education, non-profit, retail, wholesale and manufacturing.

Metrics organisations use to measure how traffic gets to their website (Question 6)

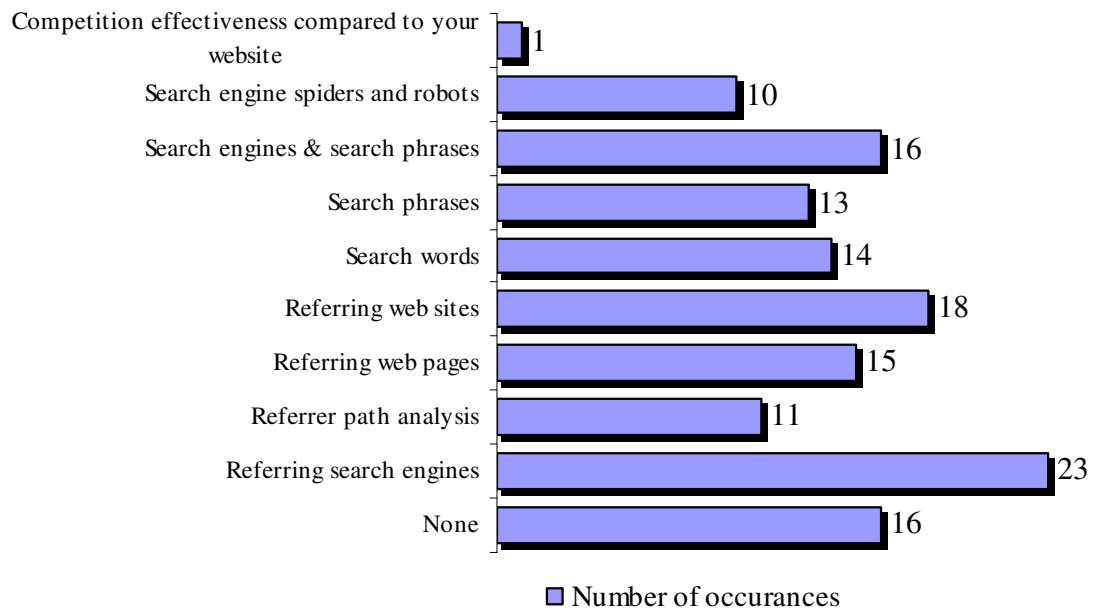


Figure 4.5-2 Metrics organisations use to how website traffic gets to their website

62.8% of all the respondents measure how traffic arrives at their website. The specific micrometrics identify the provenance of the on-line user, the popularity of the organisation's website, the effectiveness of the Meta tags utilised and the ranking effectiveness on search engines (see Figure 4.5-2). This group of micrometrics, although very popular, requires considerable exploration and analysis to identify the reasons for the results obtained. This involves a lot of time, a luxury not available to 50% of respondents who perform website tracking, as shall be illustrated later in chapter 4.13. The micrometric with the highest occurrence (23) is reported to be the

‘referring search engines’, triggered when a user clicks on a search engine link to the organisation’s website, enabling the organisation to gauge whether it is able to acquire its fair share of the market (*see Vade Mecum chapter 5.3.6*). Moderately popular is the micrometric that identifies search engine spiders and robots (10 occurrences), which, if not filtered may distort the data analysed (*see Vade Mecum chapter 5.2.3.2.5*). The ‘referrer path analysis’ micrometric, used to analyse the paths visitors take through the organisation’s website when they originate from a referring website or search engine, positioned in the retention stage of the customer life cycle (*see Vade Mecum chapter 5.5.4*), obtained only 11 occurrences. An unpopular metric (with just 1 occurrence) is that which measures competitive effectiveness compared to the website under study, in other words how users are lost to competitors’ websites. This is a clear indication that organisations surveyed are not analysing what competition is doing, losing out on the opportunities to strategically augment their websites accordingly, win back lost users and/or attract new ones (*see Vade Mecum chapter 5.3.6.2.7*).

4.5.3 TO DETERMINE WHERE ON-LINE VISITORS COME FROM

Question 7: Do you measure where visitors come from? **Base:** All organisations

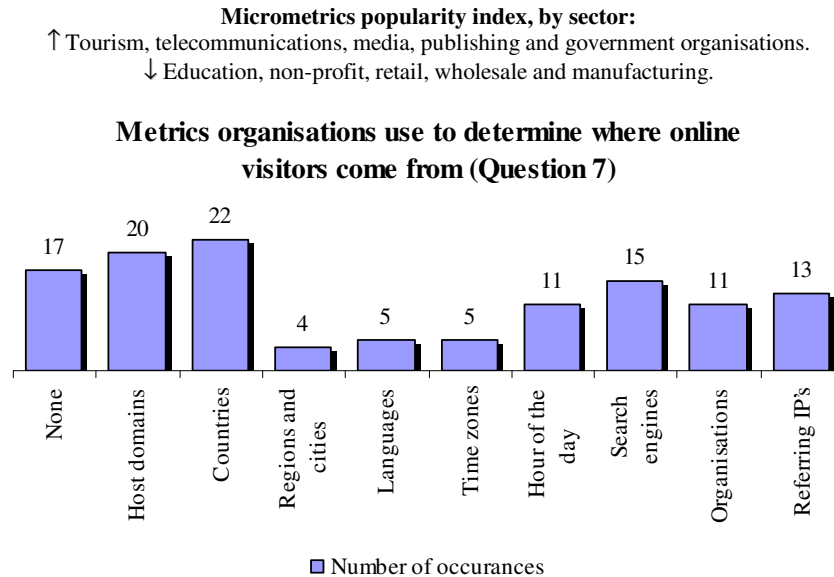


Figure 4.5-3 Metrics organisations use to determine where on-line visitors come from

This popular metric gives the organisation insight on a variety of indicators that could facilitate the task of identifying where the website is most popular. Figure 4.5-3 indicates that organisations are mostly tracking host domains and countries, yet their applications are not providing more specific details, such as time zones, regions and cities, which require more work for the ASP. This is a feature available from most ASP's once the free product is upgraded to a paying version. Organisations surveyed may not be mature enough to realise the potential of geographical information when marketing the website and are thus unable to take advantage of the Internet's global reach to identify unexpected traffic from outside the target market.

4.5.4 TO MEASURE HOW ON-LINE VISITORS USE THEIR WEBSITES

Question 8: Do you measure what users do on your website? **Base:** All organisations

Micrometrics popularity index, by sector:

↑ Tourism, service industry, banking and finance and IT industry.

↓ Education, non-profit, retail, wholesale and manufacturing, and government organisations.

Metrics organisations use to measure how online users use their website (Question 8)

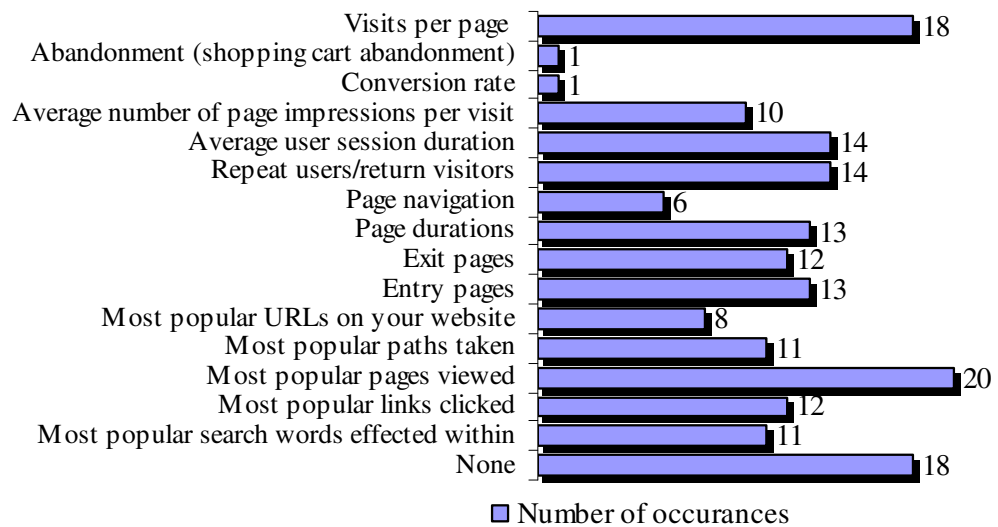


Figure 4.5-4 Metrics organisations use to measure how on-line users use their website

58.1% of all respondents claim to utilise this metric, which identifies what users do while they are on the organisation's website (see Figure 4.5-4). Most popular are the micrometrics relating to the pages viewed, available on all 1st Generation site stat applications. 2nd Generation micrometrics such as 'conversion rate' (see *Vade Mecum chapter 5.4.2*) and 'shopping cart abandonment rate' (see *Vade Mecum chapter 5.4.3.2.2*) are not popular with the respondents, probably as these are available on more sophisticated and costly ASP applications.

4.5.5 TO MEASURE HOW ON-LINE MARKETING IS WORKING

Question 9: Do you measure your on-line advertising campaigns? **Base:** All organisations

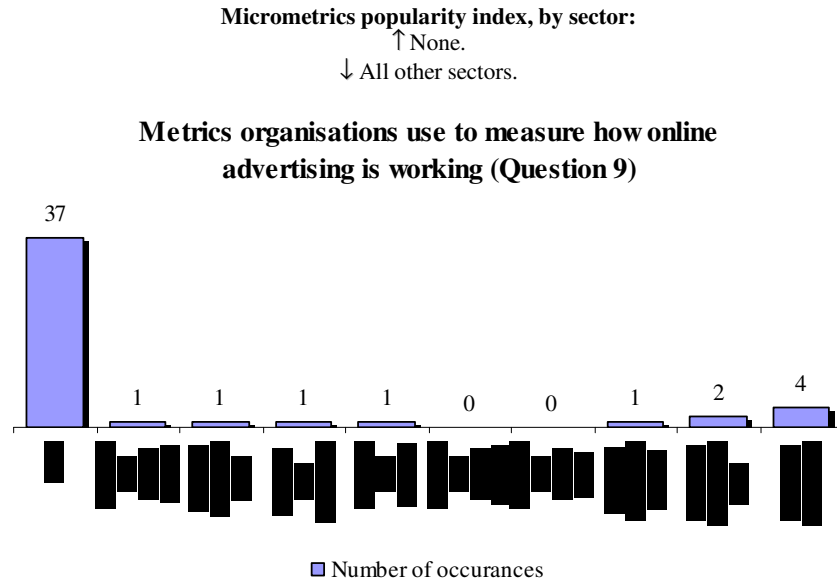


Figure 4.5-5 Metrics organisations use to measure how on-line advertising is working

One of the most important aspects of measuring the customer life cycle on any website is the identification of the effectiveness of the marketing efforts designed to reach, acquire, convert and retain customers (*see Vade Mecum chapter 5.2.3*). This question was intended to identify whether the organisations can determine the efficacy of their on-line advertising campaigns. Figure 4.5-5 illustrates that this measurement is extremely unpopular with the survey respondents. This may be attributed to two major factors. Firstly, advertising campaigns may not be very popular with the organisations surveyed and secondly because these metrics form part of the 2nd and 3rd Generation e-metrics most likely available at a charge. The tourism industry alone shows some interest in these measurement techniques.

4.5.6 TO MEASURE WHAT ON-LINE TECHNOLOGY VISITORS USE

Question 11: Do you measure the technology users use? **Base:** All organisations

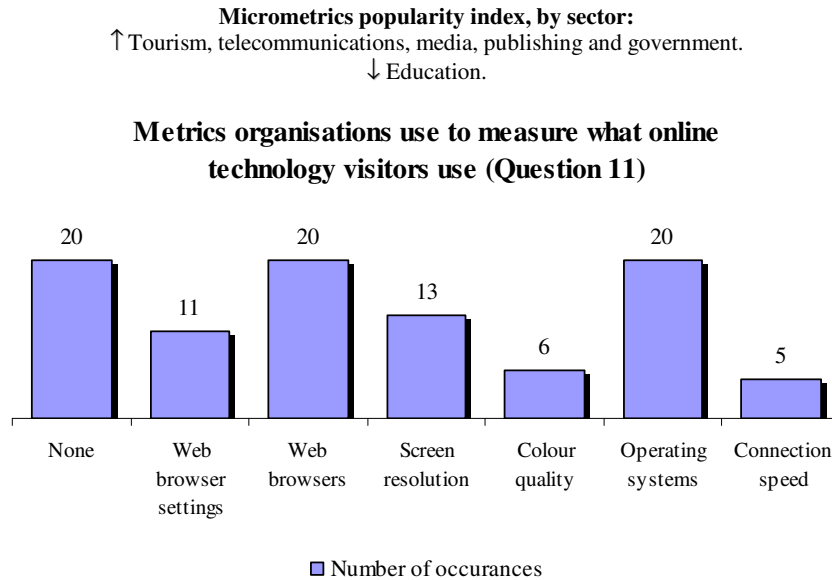


Figure 4.5-6 Metrics organisations use to measure what on-line technology visitors use

Measuring technology, favoured by 53.5% of all respondents, is available with most free Web analytics applications. Figure 4.5-6 illustrates that although Web browsers and operating systems are being monitored, connection speeds are poorly tracked. Organisations may not have realised that speed is of essence in the on-line business. Identifying average connection speeds utilised by on-line users could be essential in determining the design of the website, the location of the servers and the convenient technology to serve one's potential customers.

4.5.7 TO MEASURE HOW WEBSITE IS PERFORMING TECHNICALLY

Question 12: Do you measure how well your site is performing technically? **Base:** All organisations

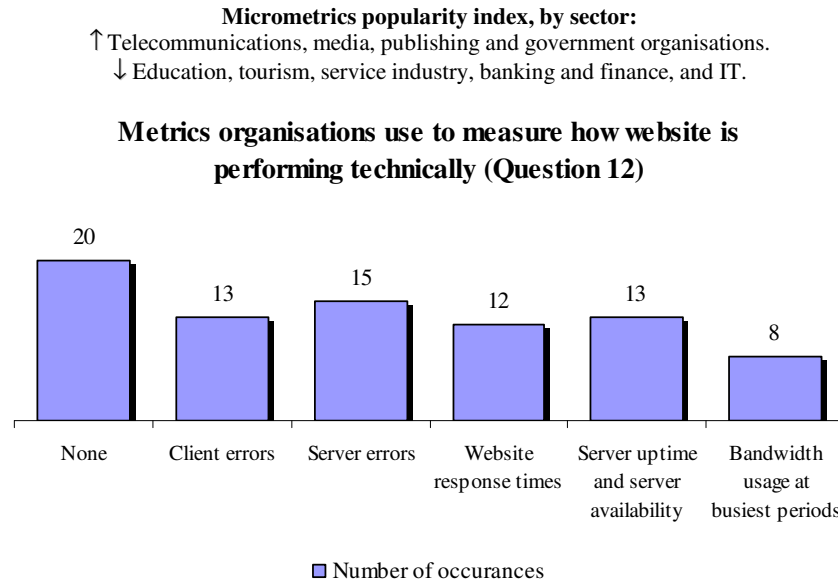


Figure 4.5-7 Metrics organisations use to measure how website is performing technically

This metric serves to identify technical problems on the website, the organisation's Web server, the Web hosting service or with the ISP (*see Vade Mecum chapter 5.2.2*). 53.5% of the survey respondents have access to this measurement. All micrometrics have been moderately marked (*see Figure 4.5-7*), confirming that some organisations are in a position to investigate these technicalities. This puts such organisations in the advantageous position of identifying and eliminating issues that hamper them from having a continuous reliable link with on-line users around the clock.

4.5.8 TO MEASURE USER VISITS

Question 13: Do you measure user visits? **Base:** All organisations

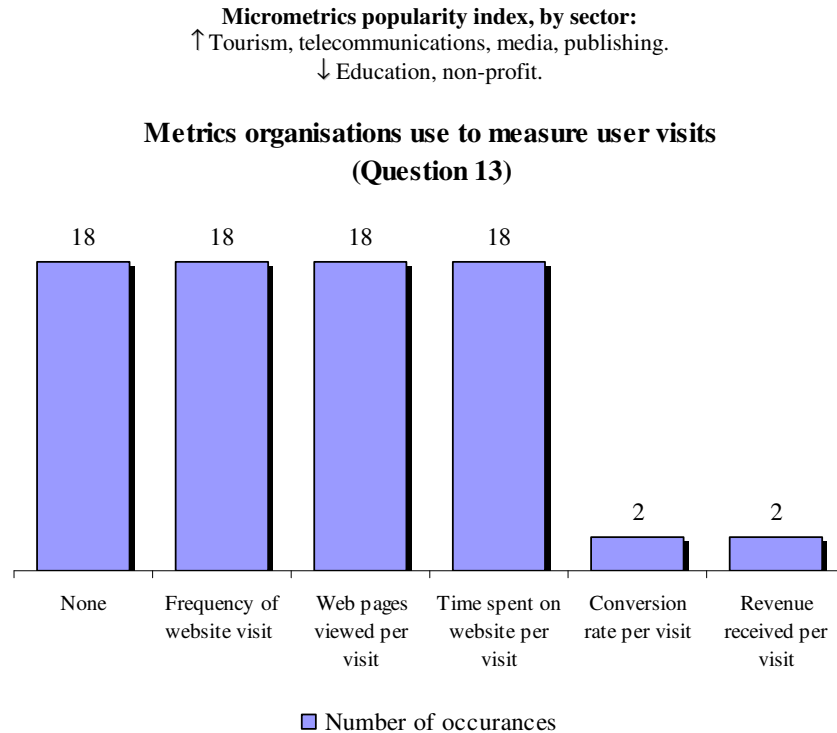


Figure 4.5-8 Metrics organisations use to measure user visits

Question 13, illustrated in Figure 4.5-8, was intended to identify whether organisations were seeking to obtain insight into user visits (*see Vade Mecum chapter 5.5.3*). Such metrics are obtainable to a reasonable standard by using a cookie-based system (RedEye, 2003). This measurement is used by 58.1% of the respondents. Survey results interestingly show that measurement is being performed aggressively on the following micrometrics: ‘frequency of website visits’, ‘Web pages viewed per visit’ and ‘time spent on website per visit’ (18 occurrences each). On the other hand, the micrometrics that measure ‘conversion rate per visit’ and ‘revenue received per visit’ had only 2 occurrences each. This disproportionate measurement suggests either that

surveyed organisations are extensively using 1st Generation applications or that respondents are not utilising their website to generate revenue, making these micrometrics superfluous.

4.5.9 TO MEASURE WEBSITE PATHS, VISITS AND BROWSING HISTORY

Question 14: Do you measure website paths? **Base:** All organisations

Question 15: Do you measure website visits? **Base:** All organisations

Question 16: Do you measure complete browsing history by unique visitor analysis? **Base:** All organisations

These three metrics are available to only 14.7% of the surveyed organisations (see Figure 4.5-9, Figure 4.5-10 and Figure 4.5-11). These metrics function effectively when used with specialised cookie-based applications and visitor login systems (RedEye, 2003) and may be aligned with a myriad of the organisation's data resources available across the enterprise. The lack of use of these metrics continues to fortify the indication either that sophisticated 2nd and 3rd generation e-metric tools are not widely used because of their cost, or because they are not required for the activity currently promulgated over the Internet by the organisations, or because their benefits are not recognised.

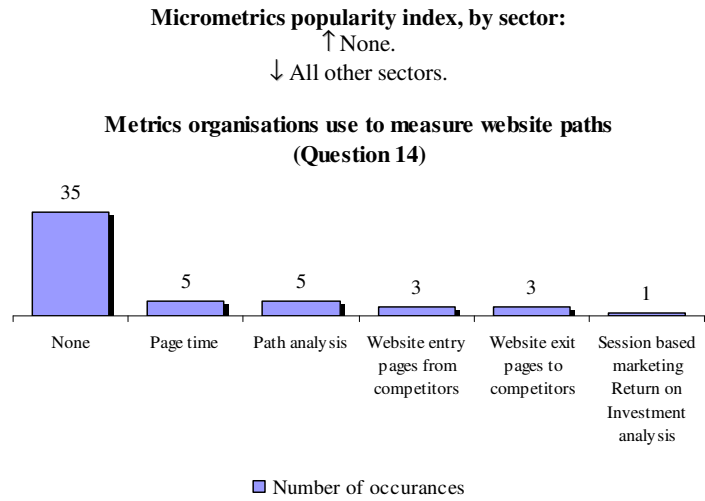


Figure 4.5-9 Metrics organisations use to measure website paths

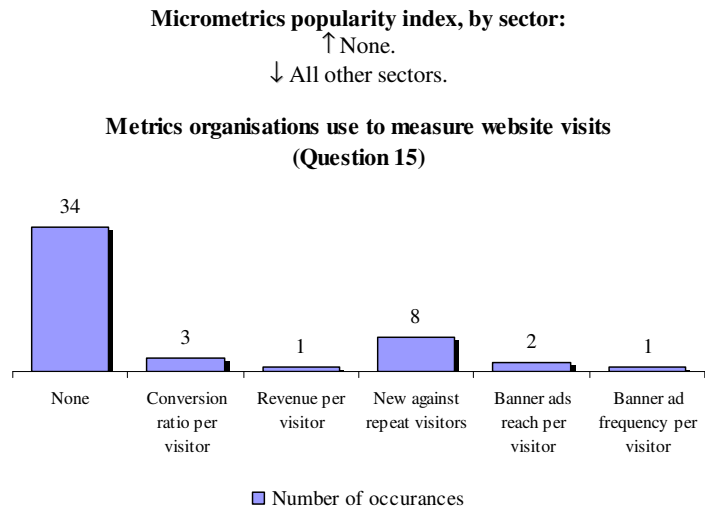


Figure 4.5-10 Metrics organisations use to measure website visits

Micrometrics popularity index, by sector:

↑ None.
↓ All other sectors.

Metrics organisations use to measure complete browsing history by unique visitor (Question 16)

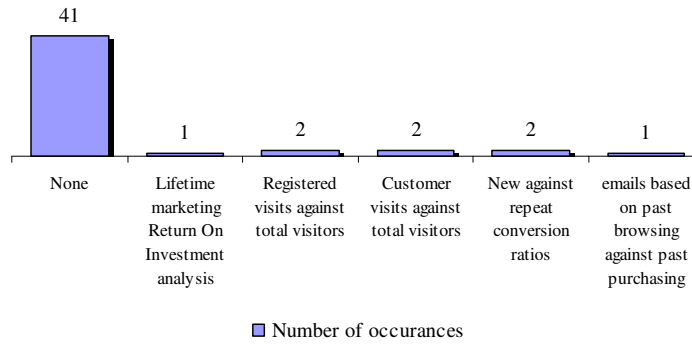


Figure 4.5-11 Metrics organisations use to measure complete browsing history by unique visitor

4.6 TRACKING METHODOLOGIES IN USE

Question 17: Do you track Web traffic via any of the following tracking application methods? **Base:** All organisations

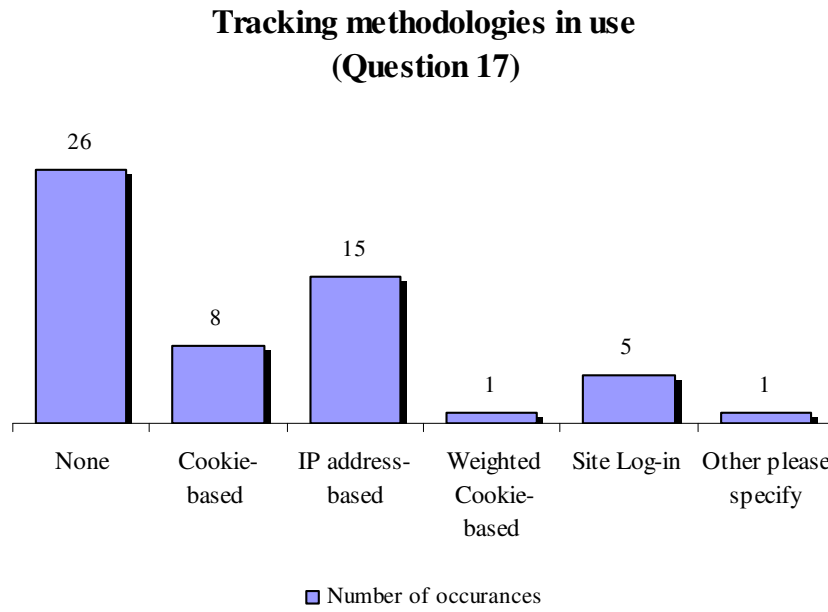


Figure 4.6-1 Tracking methodologies in use

It is interesting to note that although only 40% of the respondents have some kind of website tracking methodology mechanism in use, as suggested in question 17 of the survey (see Figure 4.6-1), the remaining 17 respondents have a number of combinations of solutions in operation, as illustrated in Figure 4.6-2. The most common are the Cookie-based combined with IP address based tools (5 users), followed by the IP address based tools combined with the site login (4 users) and the pure IP address based solutions (4 users).

Tracking mechanisms in combination, in use by respondents	Number of respondents
Cookie-based	2
Cookie-based + IP address-based	5
Cookie-based + IP address-based + Site Log-in	1
IP address-based	4
IP address-based + Site Log-in	4
IP address-based + Weighted Cookie-based + Other	1

Figure 4.6-2 Tracking mechanisms in combination, in use by respondents

4.7 UNIQUE VISITOR WEB TRAFFIC APPLICATIONS

Question 18: Have you requested in the past 12 months any quotes for any Web traffic applications with unique visitor analysis possibilities? **Base:** All organisations

Question 18 was designed as a follow-up of question 16. The primary objective was to analyse the results of question 16 which determined whether surveyed organisations measure complete browsing history by unique visitor, and then to confirm through question 18 whether there is a quest by organisations which do not do this to advance into more sophisticated ground in the field of Web analytics by adopting unique visitor tracking applications (*see Literature Review chapter 2.6*). It has been established from the survey that over 95% of respondents (41) do not perform unique visitor analysis (*see question 16 – chapter 4.5.9*), and of these only 3 respondents confirmed having requested a quote in the last 12 months.

4.8 QUOTATIONS FOR WEB TRAFFIC APPLICATIONS

Question 19: If you have received quotes for Web traffic applications did you consider them expensive? **Base:** All organisations

Question 19 was intended to identify whether users found Web analytics applications on the market expensive. If it were assumed that all respondents answered this question correctly, not checking the radio button would mean that the respondents

received no quotes. Therefore, since only 15 respondents out of 43 answered this question, this may indicate that the interest in advancing to higher ground in Web analytics is not being seriously considered, either because organisations are happy with what they are doing or because they are not aware of the available options and the attributable benefits later on amply laid out in the *Vade Mecum* section. Figure 4.8-1 illustrates the distribution of survey respondents to this question.

Quotations received by respondents in respect of Web traffic applications			
Respondents who:	Found quotes expensive	Did not find quotes expensive	Did not reply to question 19
Do not utilise Web traffic applications	-	1	7
Do not utilise Web traffic applications but have requested a quote for unique visitor analysis	1	-	-
Utilise Web traffic applications and have requested a quote for unique visitor analysis	2	-	1
Utilise Web traffic applications	2	9	20

Figure 4.8-1 Quotes received by respondents regarding Web traffic applications

4.9 ORGANISATIONS' WEBSITE STATISTICS

Question 20: Kindly provide your basic website statistics if available? **Base:** All organisations

50% (15 replies) of all the survey participants measuring on-line traffic replied to Question 20, as far as this was made possible to them by their applications. No reasons could be given for this low response rate except that of confidentiality, already mentioned earlier (*see chapter 3.9.3*).

Two of these respondents indicated that the average monthly page views recorded by their applications were higher than the average monthly hits. By normal standards and the researcher's reasoning this information is considered an impossibility (*see*

Literature Review Figure 2.6-2 on page 16). The reason for this anomalous result may be attributed to the interlocutor's erroneous entry of figures in the table provided, and/or the respondents lack of knowledge on how to extract this data from the application and/or the use of the organisation's internal standard definition for each of the core measurements 'Average Monthly Hits', 'Average Monthly Page Views', 'Average Monthly Visits', 'Average Monthly Visits by Unique Visitor' rather than the standard definitions provided in the glossary of terms.

4.10 FAMILIARITY WITH WEB MEASUREMENT TERMS

Question 21: Which of the following terms are you familiar with? **Base:** All organisations

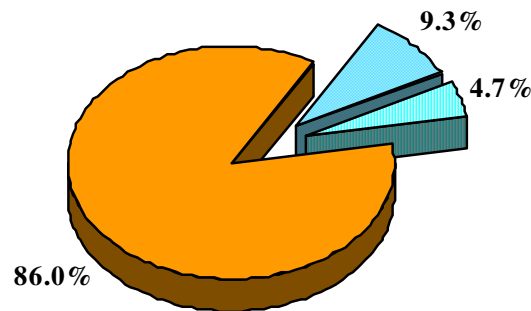
77% of the interlocutors have claimed that they are familiar with at least one of the terms listed in question 21: 'Web analytics', 'Web metrics', 'e-metrics', 'website measurement'.

Ironically 60% of respondents who did not mark any of the options are organisations that use web-tracking techniques. The researcher has no interpretation of this result, except that 50% of these respondents utilise applications provided by and rely on their local Web developers and Web hosting service providers.

4.11 USABILITY TESTING

Question: Have you ever undergone a professional website usability testing exercise performed by third-parties who are not your Web developers? **Base:** All organisations

Usability testing exercise - (question 22)



90.7% of surveyed organisations have never performed a 3rd party usability testing exercise of their website

- % Organisations who have performed pure usability testing of their website
- % Organisations who have never performed usability testing of their website
- % Organisations who have performed only accessibility testing of their website

Figure 4.11-1 Usability testing exercise

Figure 4.11-1 illustrates that 90.7% of all surveyed organisations have never employed third-parties to perform a pure usability testing exercise on their websites. From the comments obtained, two government sector organisations have indicated that they performed only accessibility testing for the benefit of disabled persons. The results suggest that local websites are not being monitored in a way to make them more user-friendly. The lack of usability testing suggests that organisations have no means to identify reasons for user website abandonment, critical user paths and website bottlenecks (*see Literature Review 2.7*).

4.12 HOW WEB ANALYTICS EFFECTS ORGANISATIONS ON-LINE STRATEGY

Question 23: What strategic changes have you recently (past 6 months) made to your website as a result of website traffic collected from your applications? **Base:** All organisations that collect on-line website traffic.

Strategic changes made to website as a result of Web traffic results (Question 23)

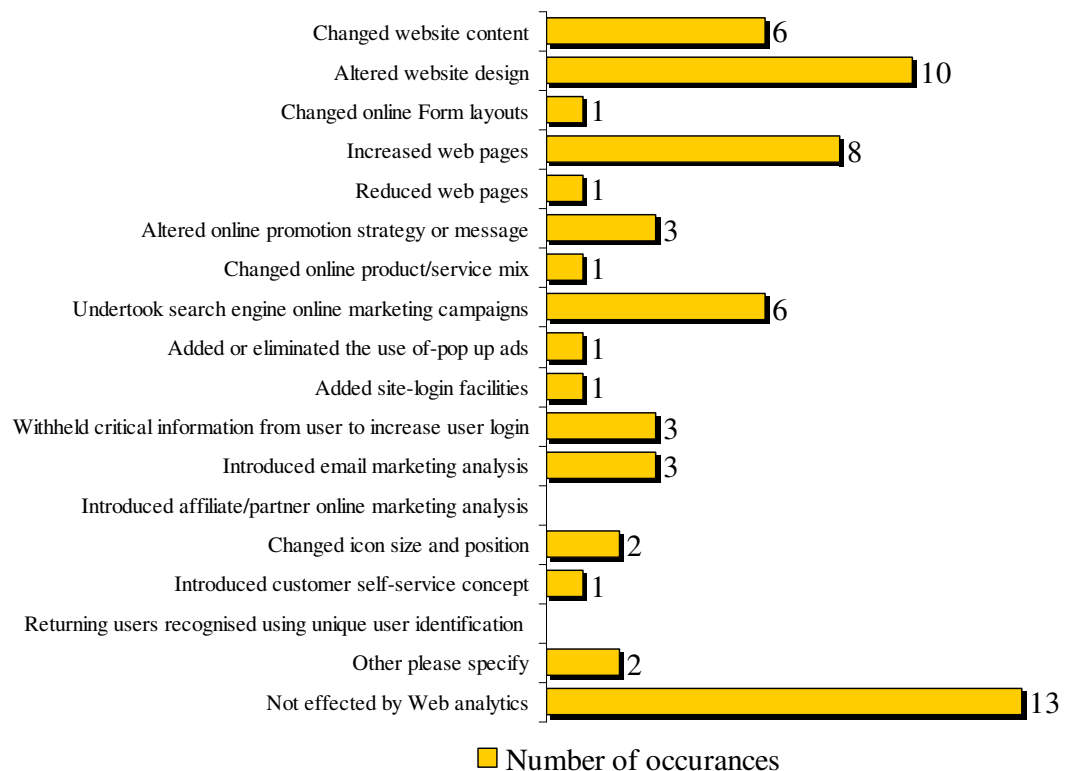


Figure 4.12-1 Strategic changes made to websites as a consequence of Web traffic results

After having cleansed the responses of question 23 as indicated in chapter 3.7 it was apparent that 13 organisations do not change website strategy as a consequence of website traffic results. The results represented in Figure 4.12-1 indicate clearly that website traffic contributed in particular to influence organisations to tweak their

websites and alter their design and content, increase Web pages, and undergo search engine on-line marketing campaigns. Other more specialised and intrinsic techniques are being avoided, and may be attributed to the limiting factors analysed in chapter 4.13.

4.13 LIMITING FACTORS IN MAXIMIZING WEB ANALYTICS POTENTIAL

Question 24: What is preventing your organisation from maximizing the value obtainable from website measurement techniques collected from your systems? **Base:** All organisations that collect on-line website traffic.

Limiting factors in maximizing Web analytics potential (Question 24)

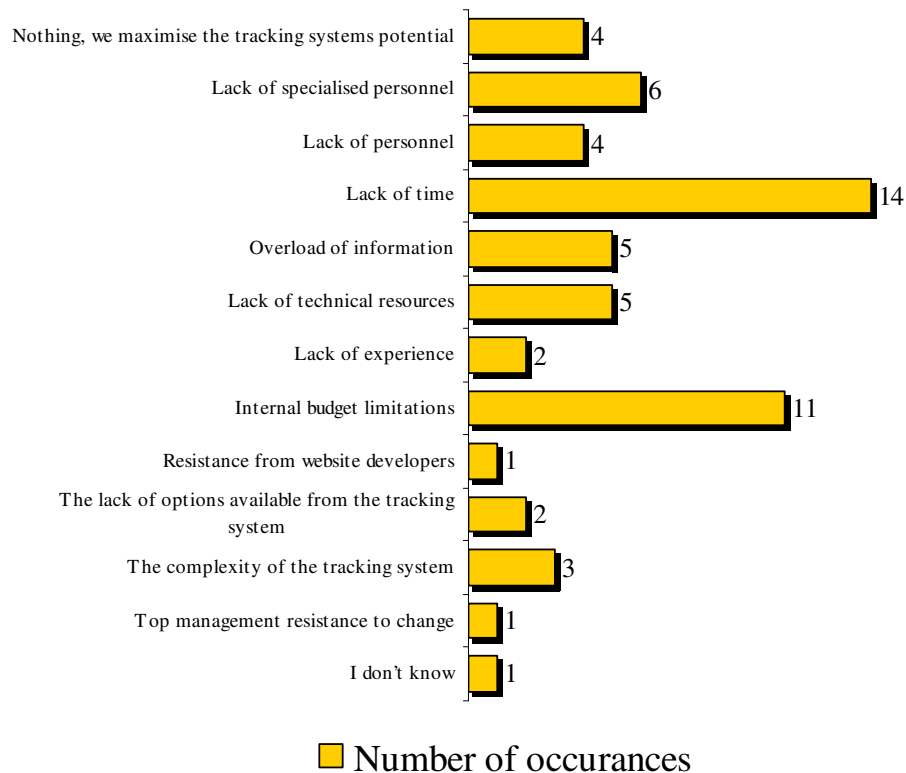


Figure 4.13-1 Limiting factors in maximizing Web analytics potential

The respondents believe that the following are the major limiting factors in maximizing the potential obtainable from Web analytics (*see detail in Figure 4.13-1*): 45% - lack of time, 35% - internal budget limitations, 19% - specialised personnel required, 16% - systems produce an overload of information, 16% - lack of technical resources. This data was manipulated further to determine the extent of the limiting factors effecting the maximization of Web analytics' potential. 71% of the respondents have identified

at least one of these three factors; ‘lack of time, budget limitations and lack of specialised personnel’ to be a limiting factor in maximising their Web analytics potential.

4.14 FREQUENCY OF WEB ANALYTICS ANALYSIS

Question 25: Do you perform an ‘in-depth’ analysis on your Web traffic results with the aim of improving your Return On Investment at least....? **Base:** All organisations that collect on-line website traffic.

Frequency of web analytics analysis (Question 25)

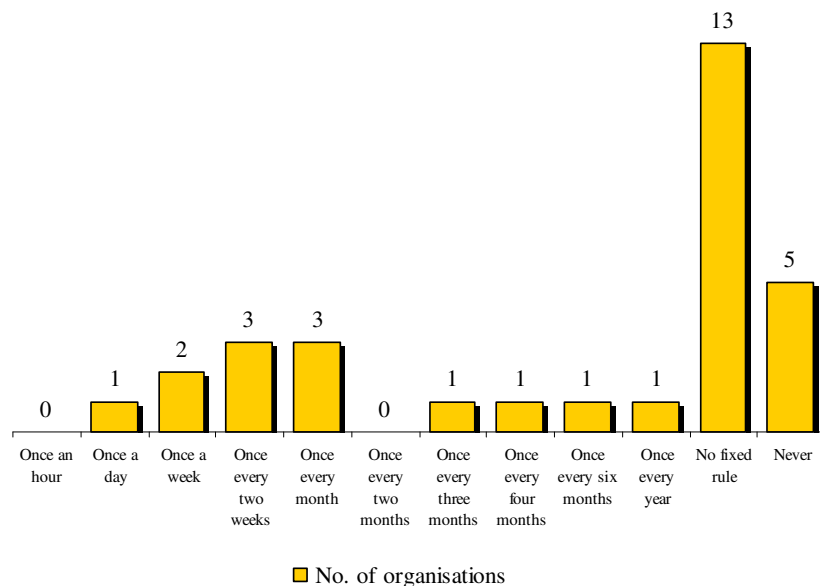


Figure 4.14-1 Frequency of Web analytics analysis

The success of on-line initiatives relies on the ability to make timely informed decisions, to change decisions that did not have the expected outcome, and to take immediate advantage of unexpected opportunities. ‘Reducing [reporting] turnaround time from months to weeks to days to hours – or less’ (Cutler and Sterne, 2000, p.19), makes this possible. However, notwithstanding the fact that the information may be available even in real time, the organisations surveyed do not appear to have reached

this level of intensity in metric reporting. The results expressed in Figure 4.14-1 show that 42% of organisations do not have a fixed criterion when they perform an in-depth analysis on their Web traffic results with an aim of maximizing ROI. On the other hand, surprisingly, 16% of surveyed organisations of the follow-up questionnaire never analyse these results.

4.15 SURVEY HIGHLIGHTS

- 79.1% of organisations have access to various levels of Web analytics notwithstanding that website measurement is still an emergent discipline. Tourism, telecommunications, media, publishing and government organisations rank top of the list.
- 42% of all surveyed organisations are known to take a reactive approach to changing on-line strategies based on Web analytics for the purpose of increasing their ROI. Tourism, telecommunications, media, publishing and non-profit organisations rank top of the list. This notwithstanding, micrometric indicators demonstrate the prevailing use of site stats and scarce e-metric sophistication.
- 71% of organisations with access to Web tracking applications have identified at least one of three factors ‘lack of time, budget limitations, and lack of specialised personnel’ to be a limiting factor in maximising their Web analytics potential.
- 41.9% of organisations do not have a fixed criterion when they perform an in-depth analysis on their Web traffic results with an aim of maximizing ROI.
- 94% of respondents of organisations with access to Web tracking applications do not measure complete browsing history by unique visitor analysis.
- 90.7% of surveyed organisations have never performed a 3rd party usability testing exercise of their website.
- 33% of all Web tracking applications are provided by the organisations’ website developers and website hosting service providers.

4.16 EVALUATION OF SURVEY FINDINGS

Organisations performing strategic website changes with the aim of improving their organisation's ROI as a result of regular 'in-depth' analysis of online customer-related e-metrics using Web Analytics tools and techniques (%)

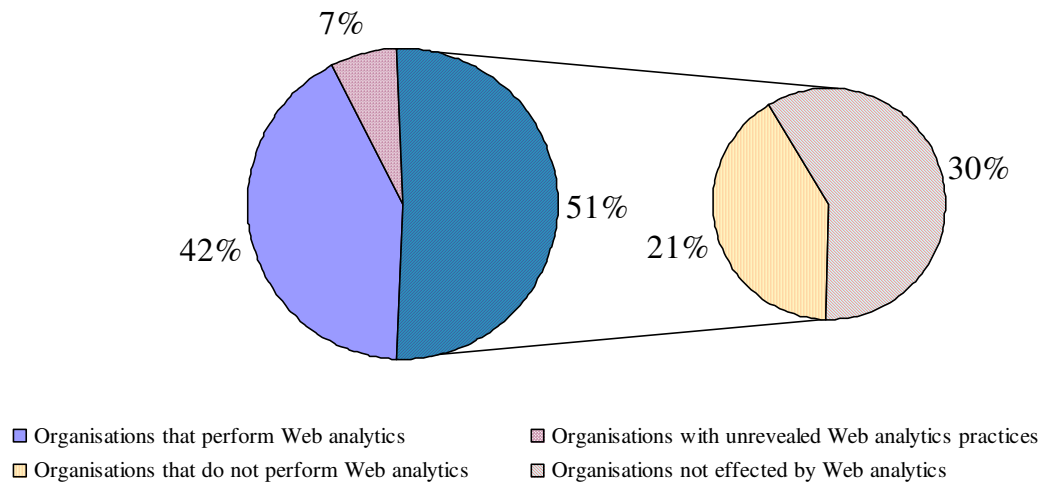


Figure 4.16-1 Relationship between organisations and strategic Web analytics

In contrast with the results of 79.1% of survey respondents who have access to Web analytic tools, the research confirms that only 42% of all organisations are known to perform strategic website changes with the aim of improving their ROI as a result of regular 'in-depth' analysis of on-line customer-centric related e-metrics, using Web analytics tools and techniques (*see detail in* Figure 4.16-1).

Organisations' relationship with Web Analytics: by market sector

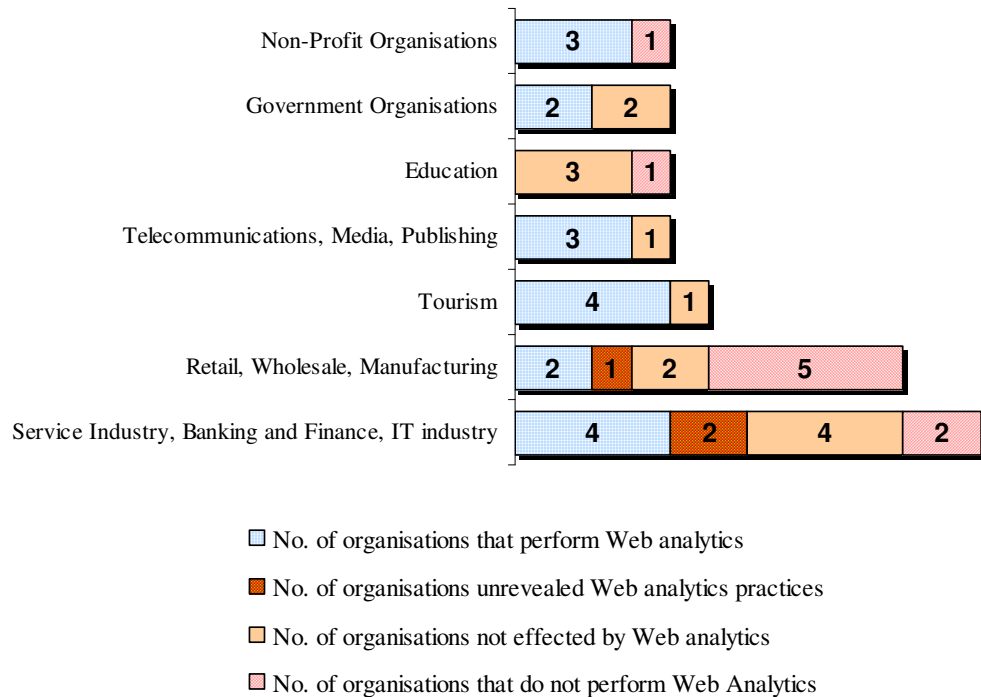


Figure 4.16-2 Organisations' relationship with Web Analytics: by market sector

Interestingly, analysis by market sector has revealed that 83% of the organisations in the tourism, telecommunications, media, publishing and non-profit sectors are taking advantage of the potential of this new medium to strategically improve their ROI (*see Figure 4.16-2*).

Web Analytics strategically utilised to improve ROI

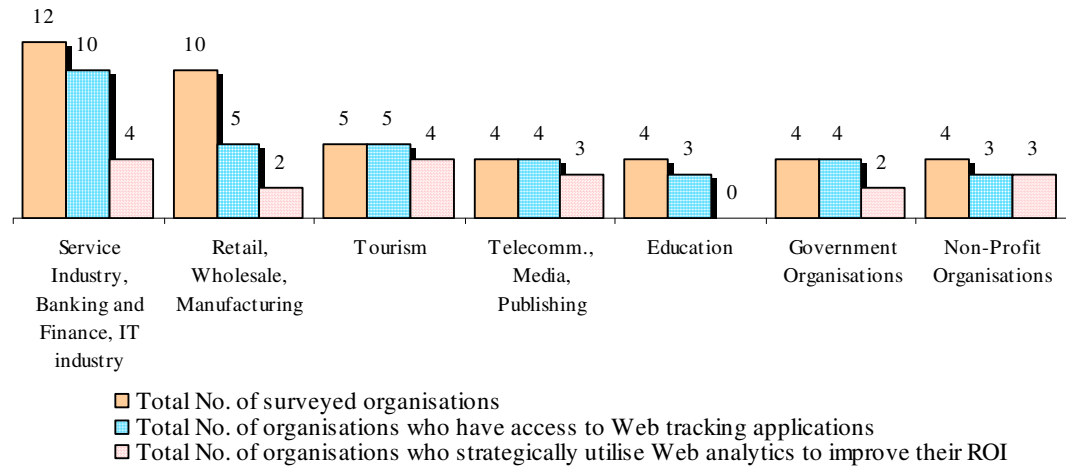


Figure 4.16-3 Web Analytics strategically utilised to improve ROI: by sector

On the other side of the spectrum, although they have access to on-line user tracking techniques, this research has also shown that only 36% of the service, banking, finance, IT, retail, wholesale, manufacturing, education and government sectors are taking advantage of the potential of this new medium to strategically improve their ROI (see Figure 4.16-3).

The following Figure 4.16-4 illustrates at a glance the utilisation popularity of the micrometrics compiled from the respondents' replies to each of the survey questions by market sector.

Micrometric Popularity Index Summary: by Sector											
Question No.	5	6	7	8	9	11	12	13	14	15	16
Non-Profit Organisations	↓	↓	↓	↓	↓	↔	↔	↓	↓	↓	↓
Government Organisations	↔	↑	↑	↓	↓	↑	↑	↔	↓	↓	↓
Education	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Telecommunications, Media, Publishing	↑	↑	↑	↔	↓	↑	↑	↑	↓	↓	↓
Tourism	↑	↑	↑	↑	↓	↑	↓	↑	↓	↓	↓
Retail, Wholesale, Manufacturing	↓	↓	↓	↓	↓	↔	↔	↔	↓	↓	↓
Service Industry, Banking and Finance, IT industry	↔	↔	↔	↑	↓	↔	↓	↔	↓	↓	↓
↑ = Popular ↔ = Moderately Popular ↓ = Not Popular											

Figure 4.16-4 Micrometric popularity index summary: by sector

Evidence obtained throughout the research survey indicates clearly that the tools and methodologies in use by participating organisations oriented towards customer-centric on-line measurement are not of a high level of sophistication.

The survey results seem to indicate that organisations may not be investing significant funds and resources on Web analytics. The results suggest that the tools made available to the organisations surveyed - although seemingly inadequate - may be

satisfying their expectations. The reason for this may be because top management is unaware of the potential of these tools and of the availability of more sophisticated applications on the market thus precluding such organisations from the need to acquire more advanced tools.

This research has demonstrated that although executives may have access to Web measurement applications, time restraints, budget limitations, and the lack of specialised personnel are major factors that hinder 71% of such organisations from maximising Web analytics potential. Furthermore, organisations are performing scarce in-depth analysis, with an aim of maximizing ROI, on their Web traffic results, with 42% of organisations not having a fixed criterion.

Research suggests, albeit inconclusively, that it is highly possible that Web analytics applications obtained from ASPs are supplied for free or at a low-cost monthly charge, while 33% of all Web tracking applications are provided by the organisations' website developers and website hosting service providers, perhaps forming part of a complete service package. The way these applications are being put to use by the organisations and their general level of sophistication appears to confirm this hypothesis.

The data obtained also confirmed that at least 41.9% of organisations that have access to on-line tracking applications, do not implement strategic website changes and on-line strategies as a consequence of Web traffic results, identifying the possibility of a shortage of expertise in the field and that management may not be responding reactively to the data.

Results have also shown that 90.7% of surveyed organisations have never performed a 3rd party usability testing exercise of their website. Moreover, 94% of the respondents of organisations with access to Web tracking applications do not perform complete browsing history by unique visitor analysis. The results also seem to indicate that the majority of organisations are not actively seeking further advancement into this area. Once again the results also suggest that senior executives are either unaware of the potential lever these tasks command in optimising ROI, or are reluctant to invest more funds on the on-line project as they may not believe that the cost of implementation would be justified.

In line with the above, the current foreign scenario appears to register similar results as indicated in the literature review (*see chapter 2.5*), with 21.7% who never measure results and 45.7% who do not utilise Web analytics effectively to optimise their ROI (WebTrends, 2004b).

These conclusions demonstrate that there is ample room for improvement in the use of Web analytics in the national scenario. This research has shown that many executives are not regularly incorporating the benefits obtainable from Web analytics into their efforts and decision-making processes. It is therefore apparent that unless Web analytics is given recognition, together with a generous input of funds to invest in more sophisticated tools, personnel, training, consultants and resources, the local scenario will lag behind the global competition. For this purpose the researcher has developed a 'Vade Mecum for the Web analyst' presented in chapter 5, compiled from literature and case studies by utilising salient areas of customer-centric on-line analysis, to illustrate

the efforts made by various on-line organisations that have effectively utilised Web analytics for the purpose of gaining competitive advantage, improving their ROI and on-line presence.

5 THE VADE MECUM FOR THE WEB ANALYST

5.1 INTRODUCTION

‘Every click leaves a record, every page view makes it mark. All data entered by a user is recorded’ (Cutler and Sterne, 2000, p.22).

Crane, (2003) claims that traditional profit and loss metrics fail to deliver a complete picture of the enterprises’ user behaviour, as they are most of the time sales-transaction-based, whilst e-metrics capture every click made, and every image seen.

5.1.1 PURPOSE FOR THIS VADE MECUM

The survey conducted in July 2004 revealed that although 79.1% of on-line organisations have access to Web analytic tools of various levels of sophistication, only 42% of all surveyed organisations are known to take a reactive approach to changing on-line strategies based on Web analytics for the purpose of increasing their ROI. It is evident that there is scope for improvement. The *Vade Mecum* is intended to reach Web strategists who already take a reactive approach to Web measurement results in order to encourage them to advance into more sophisticated applications and techniques and to invite those organisations that are lagging behind to appreciate the benefits other enterprises have reaped from e-metrics.

The *Vade Mecum* is a collection of documented solutions and tip-offs. Each customer-centric solution is strategically placed within a structured framework built around the customer’s life cycle optimisation process. This guide offers insight into proposing changes on on-line activities, marketing strategies and website appearance,

with the ultimate aim of reaching, winning and retaining the best customer with the minimum costs and the least expenditure of resources.

5.1.2 CUSTOMER LIFE CYCLE

Every on-line organisation continually performs activities to attract potential customers, influence them to engage with the website, persuade them to perform predetermined tasks, convince them to return, and evoke them to spread the word. This approach better known as the 'customer life cycle' illustrated in Figure 5.1-1 is a framework used in the works of Cutler and Sterne (2000), Inan (2002), and Peterson (2004).



Figure 5.1-1 The customer life cycle: Reproduced from: Cutler and Sterne, (2000, p.26)

This collection of case studies, extracted from different sources, and placed strategically into the optimisation process of customer life cycle framework - reach, acquisition, conversion and retention – enriches the available literature on the subject.

The presented framework based on Web analytics is built around understanding dropout patterns – leakage, abandonment, attrition and churn - indispensable for success. The number of users lost by the wayside, as dropouts, as the cycle progresses from the ‘reach’ to the ‘retention’ stage is illustrated by various authors in their personalised variations in what is commonly called the customer life cycle funnel (Cutler and Sterne, 2000, p.45; Inan 2002, p.85; Sterne, 2002, p.233).

Eisenberg (cited Eisenberg and Novo, 2002, p.8) claims that once the website has specific strategic objectives, then each page on the website must have a defined purpose. If these objectives are defined accurately the measurement process will be somewhat straightforward, and the Web analyst may easily develop a system of testing, measuring and optimising which can give that invaluable edge ahead of competition with the scope of improving the ROI of the enterprise.

5.2 OPTIMISE REACH

5.2.1 INTRODUCTION

‘You cannot attract people you cannot reach.’ (Peterson, 2004, p.110)

Reach is an activity aimed at attracting the attention of the target audience to a website (Inan, 2002, p.54; Peterson, 2004, p.105) through the exposure of a specific activity over a period of time. Reach techniques are influenced primarily by the business model within which the enterprise operates, the marketing strategies envisaged, the harmonisation with the organisation’s evolving activities (Inan, 2002 p.54-55), and financial restraints.

5.2.2 REACH METRICS

‘Reaching the right target audience with the right message is essential for success and will largely determine whether subsequent engagement stages are reached. Although you might have developed the best communication material on the market, if your website does not deliver on the promise made in this material you will experience large dropout volumes. Reach techniques must reflect the purpose and capability of websites’. (Inan, 2002, p.54)

The metrics in Figure 5.2-1 are used to determine on-line activity generated by banner impressions, keyword and phrase searches, direct email, links and referrals, directed towards the organisation’s website. Once an appropriate data collection mechanism exists, these metrics may also be used on activities such as adverts on newspapers, magazines, billboards, television, radio, direct mail, and the like.

The metrics in Figure 5.2-1, have been extracted from recommendations made by Peterson, (2004) and Inan, (2002) to help the Web analyst establish the effect of

on-line marketing campaigns designed to reach new visitors in an effort to attract them to the website:

<ul style="list-style-type: none"> ▪ Overall traffic volumes ▪ Number of people reached ▪ Percentage of targeted reaches ▪ Percentage of untargeted reaches ▪ Number of times a specific target customer is reached ▪ Number of visits ▪ Number of new visitors ▪ Ratio of new visitors to returning visitors ▪ Percentage of new visitors 	<ul style="list-style-type: none"> ▪ Entry pages and contents ▪ Visitors' geographical information ▪ Error pages ▪ Interested visitor share ▪ Cost per day ▪ Cost per targeted reach ▪ Percentage overlap with other active reach techniques ▪ Impressions served ▪ Open rates
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Figure 5.2-1 Reach Metrics: Adapted from: (Source – Inan, 2002; Peterson, 2004)

While observing reach metric results, the Web analyst should take note of spikes and dips in traffic that exceed the average in a predetermined time frame in order to capture customer trends (Burby & Jacobs, c2003, Herron, c2003) when measuring the overall traffic volume. Digging deeper into the data is essential to understanding the reasons for these fluctuations, establishing whether the cause was the marketing message placed in a strategic place at an optimal time. Analysing trends and comparing them to previous periods gives the Web analyst the insight for predicting changes in potential customer attitudes. Comparative analysis may also ascertain symptomatic relationship changes between the website and the user established through changes in visiting

users' on-line patterns. Establishing the number of new acquired visitors, the time of the day and the day of the week they visit the website, after the marketing message has been exposed to them, determines a measure of effective interaction with specific marketing campaigns. This valuable knowledge should be used for optimising the implementation of future campaigns (Peterson, 2004, p.110-115).

Peterson (2004, p.120) claims that reached customers that land on a website after having clicked on a banner, read an email, or have found the pre-selected word or phrase, expect to land on the relevant page with the content consistent with the message they were originally exposed to or intended to find. Not finding the required information will result in immediate abandonment of the search, by a simple click of the 'back' button on the browser. Similarly user abandonment is also a result of technical website and server errors such as "file not found (404), missing links, "the page cannot be displayed" or "Error 500: internal server error" (Peterson 2004, p.123), interpreted by the user as unprofessional (Friedlein 2003, p.264), which may be partially resolved as suggested by Friedlein (2003, p.264) by attributing an error tracking log number to the user in order to subsequently inform the user via email of having fixed the problem.

5.2.3 ADVERTISING REVENUE ANALYSIS

5.2.3.1 Overview

‘Click-throughs aren’t just a measure of how well your advertising, promotions and PR people are doing their jobs. Click-throughs reveal which messages are working.’ (Sterne, 2004c)

Click-through techniques measure the number of banner impressions served, and the number of times that these banners are clicked. Clicks are still counted if the visitors double click, hit the stop icon or abort before getting to the destination page (RedEye, n.d.-c). Banner ads compared simply by the number of click-throughs might induce advertisers to concentrate their marketing efforts on the worst campaign. Banner ads generating more purchase value with less click-throughs contribute to obtaining a higher ROI than campaigns that generate a high number of banner-ads but obtain no purchases. This metric cannot be taken in isolation but needs to be calculated against the costs of producing and delivering the banner ads.

‘Web publishers sell ad space on their sites. Yahoo[!], CNN, and The Los Angeles Times are publishers and they all have two ways to create more ad views for their advertisers: attract more visitors, and get those visitors to read more pages. If every visitor can be convinced to look at one more page per visit, the impact on the bottom line can be immense. If they can convince a million people who normally read 10 pages to look at one more page, they increase their ad inventory by 10%.’ (Sterne, 2004d)

The aim of any organisation should be that of increasing conversions. The analysis of the effectiveness of different promotional strategies must be kept in focus to determine which of these deliver the greater ROI.

‘The measurement process must correct for overstatement of ad-impressions and click-throughs, by “filtering out”, among other things, spider and robot activity.’ (ABC Interactive, 2002, p.3)

Spiders and robots distort metric figures and therefore filtering is essential for more accurate reporting. The findings of ABC Interactive, (2002, p.10) – www.abcinteractiveaudits.com have shown that 24% of all ads served from their sample contributed to robotic and spider activity. They also indicated that only 57% of the researched clients performed any such filtering and they concluded that the rest of the sample conducted “incomplete filtering”, leaving volumes of robotic activity undetected.

5.2.3.2 *Lessons learned and tip-offs*

5.2.3.2.1 **Timing, duration and frequency of ad**

It is important to determine the days of the week, and/or the time of the day, that generate most click-throughs. Barki (of RAD Data Communications - www.raddata.co.uk cited Drew, 2004) explains how click-through rates increased from 23% to 44% solely by changing the day of the week when a ‘Tip Of The Week’ hint was delivered to their clients.

5.2.3.2.2 **Banner ads**

It is essential to accurately determine the measurement of the ROI per banner ad by employing the appropriate metrics with the aim of improving branding efforts. RedEye, (n.d.-c) explains how easyJet - www.easyjet.com measured the ROI for their on-line advertising investment by going beyond click-through numbers. They tracked

and recorded each unique visitor, exposure to the easyJet brand, and all consequent activity on the website. They rated each banner ad for click-throughs, quality and customer loyalty, by introducing life-time-value metrics to their applications, enabling the measurement of the 'branding effect' of their advertising, attributing customer purchasing power to a specific advertising campaign whenever the purchase was finalised. Customer activity measured over a period of time provided easyJet with a reliable indicator of the long-term profitability of customers per banner ad. EasyJet analysed the ROI from on-line advertising, comparing performance, creativity and timing. They realised that most popular click-throughs did not acquire the most profitable customers. EasyJet compared click-throughs originating from generic ads and route-specific ads and discovered that one campaign generated a purchase probability of 30% more than the other. 40% of click-throughs from banner ads booked on their first visit, 17% that same day, 20% took over 2 weeks between their first click-through and their first transaction, while the average time from first visit to first transaction was 3.5 days. EasyJet achieved an increase on its marketing ROI of 86% in one month by refining its media strategy.

5.2.3.2.3 Meeting user expectations

Examination of the exact point of user website abandonment immediately after having landed on a website, correlated with the marketing message which carried the user to the website, enables the Web analyst to synchronise Web pages to the potential clients' expected content to be consistent with the advertising message.

5.2.3.2.4 Testing and monitoring advertising messages

Periodical testing of compelling ads with the aim of increasing the number of click-throughs during the reach process is essential in order to increase the ROI. Research conducted by Arbitron/Edison Media Research (see Rose and Rosin, 2003 p.8) concluded that pop-up ads are most annoying to 65% of on-line Americans, emails from advertisers to 9% and banner ads to 3%. In their quest to reach a different sector of consumers, Adidas – www.adidas.com monitored their TV ads while concurrently delivering an identical streamed spot over their website. Dynamic Logic (cited Hallerman, 2004, p.16) claimed that there was an increase of 24% in consumers who recalled that they had seen the advert on-line, and a 125% increase in the use of the search word ‘Adidas’ on Yahoo!

5.2.3.2.5 Spider and robot data cleansing

ABC Interactive’s (2002, p.14) findings support the need to apply proper filtration techniques, and the adoption of proper audit processes to identify whether the reporting and filtering of spider and robot activity is being properly carried out.

5.2.4 SELF-SERVICE ANALYSIS

5.2.4.1 Overview

Cunningham (2002, p.55) claims that since customer and partner support mechanisms contain an elevated cost overhead element attributable to support staff salaries, call centre personnel, rents, telephone costs, printing costs and the like, enterprises that succeed in identifying repetitive procedural activities and are capable of transferring

these to be handled by an on-line automated Web based application may 'create ROI of 500% or more'. Aylett (2003, p.3) argues that although the enterprise may identify the benefits of self-service, this is not enough. The challenge lies in the ability of recognising needs and expectations of the on-line customer and aligning all the necessary resources to achieving optimal benefits for the organisation. Tan (2003, p.14) claims that the recognition of the on-line customer expectations directs the way to finding the appropriate customer relationship management (CRM) solution that will satisfy customer needs, instituting long-term loyalty relationships. Website measurement results analysed against the offline enterprise's customer relationship database, through back-end data integration, is imperative in achieving this goal. The skills of the Web analyst and efficient applications that can tie these data sources together in a meaningful way are instrumental in reducing costs and increasing the ROI.

5.2.4.2 *Lessons learned and tip-offs*

5.2.4.2.1 **Downloads vs. print**

Web analytics is critical to meeting both client and organisation objectives. All organisations have limited budgets and they need to ensure that their investment in technology and resources is paying off. Determining who the website's prime users are and satisfying their expectations can reach the organisation's objectives. After having identified the users of The United States Holocaust Memorial Museum - www.ushmm.org, and tracked their requirements using appropriate metrics, WebTrends, (2004a) claim that the Museum was able to introduce a custom-made

downloadable 133-page Guide Book for teachers, decreasing print and mailing costs. Having offered this alternative, the requests for printed books diminished, as 200,000 downloaded copies were recorded in 2003, a definite positive contribution towards the Museum's ROI.

5.2.5 PAY-PER-CLICK ANALYSIS

5.2.5.1 Overview

Pay-per-click is another method of reaching out to potential customers. No printing and postage need to be paid, no payment for mailing lists is required. Payment is only effected when customers who are interested click-through to the target website, completely eliminating payment for banner ad impressions to uninterested customers. Jupiter Media (Aug. 2001 cited Overture, n.d. see Figure 5.2-2) concluded that advertisers receive the highest ROI from pay-for-placement searches when compared to email, banners and other forms of on-line advertising.

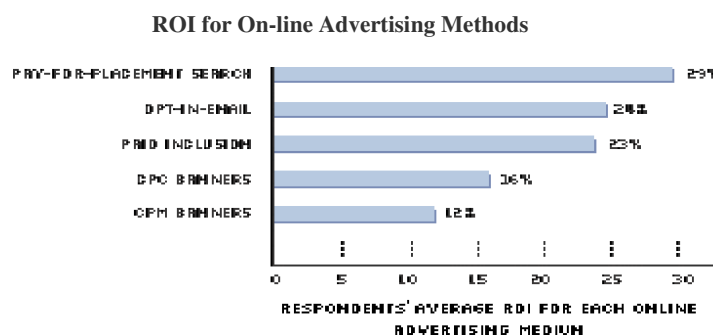


Figure 5.2-2 ROI for On-line Advertising Methods. Reproduced from: Jupiter Media (Aug. 2001 cited Overture n.d.)

5.2.5.2 *Lessons learned and tip-offs*

To determine the ROI received from on-line marketing, organisations should track user visits through appropriate path analysis from the originating point of referral. Kalmbach Publishing Co.'s – www.kalmbach.com (WebTrends, 2003f) illustrate the benefits realised by reducing the number of search terms with a pay-per-click search engine campaign. Tracking of user activity on the website revealed that the ROI generated from the sponsoring of general words and phrases with search engines was substantially lower than the contribution gained by the company when paying for more specific terms. WebTrends (2003f) concluded that path analysis revealed that the visits of users who arrive at a website having used general terms is 'short and generated no revenue' while visitors who searched specific, more obscure terms stay longer on the website, view more Web pages and ultimately shopped on-line.

5.3 OPTIMISE ACQUISITION

5.3.1 INTRODUCTION

Acquisition is the stage when the target audience has been successfully reached and persuaded to visit a website, (Inan, 2002, p.58) by having convinced the users to click on a link depositing them on the website or having persuaded them to type the URL into their browser and hit the “return” button (Peterson, 2004, p.106). The efficacy of the acquisition stage is closely dependant on the success of the reach stage, and the ability to match the offerings of the website with customer requirements (Inan, 2002, p.58-59).

5.3.2 ACQUISITION METRICS

Following the paths of customers on the website, and tracking conversions in a developed marketing lead database, enables the conversion of several registrants into customers. From information obtained from the visitor, prototyped products may be created for the segmented users (Acadia cited Drew, 2004). The metrics in Figure 5.3-1 are used to determine the interest generated in the audience targeted, through the promotional activities launched for the organisation’s products and services offered and the content and information available on the website, in the context of the organisation’s business model. These metrics determine the targeting efficacy of a promotional campaign and determine the “attraction” (Peterson, 2004, p.137) factor of the website, once the right audience has been solicited.

The following metrics have been extracted from recommendations made by Peterson, (2004) and Inan, (2002) to help the Web analyst establish the success of a website and an on-line marketing campaign:

<ul style="list-style-type: none"> ▪ Number of acquired visitors ▪ Average number of page views per visit ▪ Average pages viewed per visitor ▪ Page “stick” and “slip” ▪ Cost per visitor ▪ Ratio of new visitors to all new visitors ▪ Ratio of acquired visitors against all-time visitors ▪ Top pages and content requested by new visitors ▪ Percent of visits under 90 seconds 	<ul style="list-style-type: none"> ▪ Average time spent on site ▪ Depth of acquisition ▪ Responses and respondents ▪ Cost-per-acquisition/Cost per click ▪ Referring domains ▪ Referring URLs ▪ Navigation path by referring source ▪ Search engines ▪ Search keywords and phrases ▪ Content “focus”
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Figure 5.3-1 Acquisition Metrics: Adapted from: (Source – Inan, 2002; Peterson, 2004)

The Web analyst must focus on these metrics to achieve the highest possible incidence of potential customer conversions. Peterson (2004, p.138) argues that unless website content and architecture are constantly updated with the objective of attracting different audiences, these measurements are unlikely to reflect significant changes. Therefore the potential of the tracking mechanism that manages to identify whether the visit was made by a new user or frequent customer is indispensable for website

measurement purposes. This capability enables the organisation to treat these different users separately and uniquely, by showing them distinctive content. Inan (2002, p.60) claims that this personalisation treatment paves the way to accelerated conversions. Friedlein (2003, p.242) emphasises the importance of making website interaction pleasant and efficient for both the user and the organisation, while building a bond with the customer that encourages return to the website and ultimate purchase. The Web analyst, while striving to understand the needs of all website users, must undertake those functions which Kotler (2000, p.21) identifies as *responsive marketing*, *anticipative marketing* and *creative marketing*. Analysing the acquired users' measure of interest (Inan, 2002, p.62; Peterson, 2004, p.138-139) of the organisation's website prior to conversion is a tool to measuring the stickiness or slipperiness of the visitors' engagement to the website. This may also serve as a measure of the effectiveness of marketing campaigns, email direct marketing campaigns, search engine marketing campaigns and referral and affiliate marketing, with an eye on costs and ROI. These measures enable estimation calculations for those visitors probably a click away from conversion.

5.3.3 AFFILIATE MARKETING ANALYSIS

5.3.3.1 Overview

Acquisition may be obtained with the right choice of affiliates, considered by E-consultancy (2003, p.9) to be a cost effective way to generate sales and draw new

customers to a website, through affiliate marketing. Knowing customer acquisition costs and competition rates is of paramount importance for establishing the ROI.

5.3.3.2 *Lessons learned and tip-offs*

5.3.3.2.1 Choosing and compensating partners who deliver premium traffic

The goal behind entering into an affiliate marketing agreement is to obtain from the partner as high a number of quality prospective clients as possible who are most likely to navigate through the website with conversion purposes, rather than the curious Web surfer with no set intentions. Affiliates generating premium traffic and sales must be compensated by offering higher commission rates, promotions and exclusive content. The lifetime wallet value of customers acquired through the acquisition process of an affiliate program may induce the organisation to increase commissions for premium traffic, contributing to higher acquisition costs, which would eventually lead to an increased ROI. Information sharing with partners will ensure good long-term relationships (e-consultancy, 2003, p.9).

On-line business referring domain partners were categorised at EuroVacations – www.eurovacations.com (WebTrends, 2003h) according to the quality of the traffic driven to their booking website. They distinguished between websites that delivered high volume of low quality users, and those websites that delivered customers with high spending power that converted to purchase. The metrics adopted revealed that affiliated website promoting contests, although exposing EuroVacations to a larger number of visitors, actually secured less vacation booking revenue than other websites

offering quality content on their website. This invaluable data enabled EuroVacations to intensely market similar sites.

5.3.3.2.2 Reducing advertising costs

Organisations must accurately measure the number of visitors received on their websites and link them to promotional efforts that carried them there, together with the attributable costs incurred, in an endeavour to reduce affiliate marketing costs and optimise ROI. WebTrends (2003f) explain how promotional partner performance monitoring, through Web metric techniques, contributed towards the reduction of Kalmbach Publishing Co.'s – www.kalmbach.com advertising costs, by eliminating sites that did not add-value towards the company's ROI. Advertising was stopped gradually and the net effect of the traffic and sales revenue monitored closely and regularly, with the intention of eliminating non-contributory referral sites from the affiliate list. This intelligence increased company profits by approximately \$50,000 per annum, equivalent to 80% of promotional expenses, with no apparent reduction in user traffic. Identifying the top key partners and channelling the re-investment of these savings towards premium partners, led to increased Web traffic and net revenue.

5.3.4 LANDING PAGE ANALYSIS

5.3.4.1 Overview

Measurement techniques to analyse visitor landing pages after acquisition efforts have succeeded in the quest to lead them towards conversion, are critical and indispensable acquisition performance indicators (Peterson, 2004, p.138-139).

5.3.4.2 Lessons learned and tip-offs

5.3.4.2.1 Page stickiness and slipperiness analysis

Retaining customers as long as possible on the website increases the possibility of conversion. It is imperative therefore that problems which are the cause of lost potential customers be identified through the appropriate metrics and removed. The metrics adopted by EuroVacations revealed that a high proportion of visitors that landed on their home page exited the website soon after from the same page, without engaging in any activity on the website. Although reach activities were adequately successful, customer acquisition was lacking and the slipperiness condition of the home page had to be analysed. The navigation problem was solved and within one day from the launching of the new home page version EuroVacations recorded an average increase in visitor website stickiness of 33 percent, from 6 to 8 minutes, which Bhur on-line marketing director of EuroVacations (cited WebTrends, 2003h) claims to be 'well above the average for competitive travel portals and demonstrates the competitive advantage that we have obtained through our focus on eBusiness intelligence'.

5.3.5 EMAIL MARKETING ANALYSIS

5.3.5.1 Overview

Email tracking measurement techniques identify how profitable each email campaign is and continually help improve the design and customer target (RedEye, n.d.-b). Feedback reports are generated for the exclusive use of the creativity and design personnel indicating from the tracking metrics how email recipients use each different link on the emails sent. The effectiveness of each email campaign may be compared to the ROI from different angles such as different creative messages, plain text compared to HTML, different times of the day, and different days of the week. Customer segmentation may be performed by analysis of on-line customer behaviour placing activity similarities on to the ‘recency, frequency, monetary model’ (RFM) (*see chapter 5.5.3*) in order to establish automated email dispatch with the correct message, images and directed to the correct list of individual users.

5.3.5.2 Lessons learned and tip-offs

5.3.5.2.1 Email marketing campaign effectiveness

Sending newsletters by email and measuring their success is of paramount importance in order to determine the acquisition level of the effort of each marketing campaign. WebTrends, (2003c) explain how Family Education Network - <http://fen.com> increased the effectiveness of their email newsletters, improving on the number of visitors landing on the company’s various sites, the number of page views made by each visitor and the number of free trials generated for the subscription sites. Family

Education Network split up their mailing list into segmented groups, created the newsletter in different versions, (i.e. having different banners, headlines, layouts, content) and labelled with a different campaign code for identification purposes, in order to establish which campaign version drove the most traffic to the websites. Since this technique determines the number of visitors that click-through, the page depth for each visitor, and the number of conversions obtained by newsletter, this enables the Web analyst to accurately measure the income generated by each specific newsletter, and accurately determine which newsletters to enhance or to eliminate. With this methodology, the income generated by each specific campaign is placed into a profit and loss statement together with the expenses incurred by each newsletter, precisely establishing the ROI. Family Education Network reduced newsletter cost of production by about 50% by cancelling 48% of its email newsletter series and focusing their energy on improving the performance of the remaining campaigns, effectively generating twice the number of visits, each visitor viewing 50% more pages, tripling the total number of page views generated by the emailed newsletters.

5.3.5.2.2 Follow up emails

Establishing when and how frequently to deliver follow-up emails to entice a prospective customer to engage in an on-line activity is indispensable. RedEye, (n.d.-a) report that William Hill's betting service - www.willhill.com dramatically increased its on-line performance with the introduction of an account management support application system that delivers automated targeted emails by identifying key customers and analysing client behaviour after successful registration. It was established that

email follow-ups immediately after registration and three follow-up targeted emails for non-converted customers increased the possibility of conversion by 2.5 times compared to sending no emails. RedEye, (n.d.-b) reveal that customers land on William Hill's website directly from email marketing campaigns at the rate of 9.4% for emails sent on registration and 5.4% click-throughs with respect to the follow-up emails, generating 125% ROI on the initial stage of the project based on new client acquisition costs.

5.3.5.2.3 Plain text vs. HTML

Establishing that hypertext mark-up language (HTML) emails deliver more click-throughs to your email marketing efforts directly increases your ROI. Redeye, (n.d.-b) explain how an identical joint email campaign organised by Charcol (on-line mortgages) - www.flexible-mortgage-solutions.co.uk and Tesco Personal Finance - www.tescofinance.com delivered 90% more mortgage applications on HTML email correspondents. The text, delivered to the same number of users of both types of emails was exactly the same, while the HTML format included pictures and interactive links.

5.3.6 SEARCH ENGINE MARKETING ANALYSIS

5.3.6.1 Overview

‘Whenever someone performs a search, there are only two possible outcomes: they will either find you, or they will find your competitors.’
Marckini (c2003)

Marckini, (c2003) asks whether Web analysts are focusing on obtaining their fair share of traffic from search engines for their clients, and whether these obtained leads are in fact contributing to an increase in revenue or just a result of a worthless, heavier

workload on the Web server, that attract users who fall outside the scope of the target audience. Marckini suggests that the Web analyst should devise marketing strategies on how to measure beyond click-throughs that lead to the enterprise's website, to determine how effective search engine referrals are in contributing to increased revenue. Ranking first or second through an organic listing search results page delivers more than 50% of the clicks, while the average click-through for a paid search placement is about 2%, determining that organic search results give the highest recorded conversion rates and ROI.

5.3.6.2 Lessons learned and tip-offs

5.3.6.2.1 Targeted keywords and phrases

Knowing how people arrive at your website may open the door to new business. This may be achieved by targeting specific keywords and key phrases that qualified prospective customers are most likely to query when making their organic search on their Web browser (Aries - www.howtointernet.com cited Drew, 2004; Marckini, c2003; Pascoe, 2004, p.2). WebTrends (2003b) explain how Peterson's education portal – www.petersons.com after having analysed each keyword and established the search engines generating such traffic, researched the volume of traffic generated by various search engines, with those specific keywords. Besides having determined the most popular search engines for their website with a specific set of keywords, they could focus their efforts on specific search engines such as Lycos, Alta Vista, Excite and Go. Having adjusted the Web pages to suit the keywords, and examined keywords

utilised by competition, Petersons.com reported an increase of 25% new visitor click-throughs to their website.

5.3.6.2.2 Linguistic patterns and search behaviour

The study of the linguistic patterns and search behaviours of the prospective user identifies the specific keywords that win customers and optimise click-throughs (Marckini, c2003). Customer support may be obtained through a simple survey directed to identify what words or phrases customers use (Barnett, n.d. p.3).

5.3.6.2.3 Attract interested clients

Organisations may experiment with different keywords to determine which specific words really increase business. Paden (of Xemion Web Design - www.xemion.com cited Drew, 2004) explains how he managed to increase quote-requests and new assignments by improving key words ranking up to top three on search engines, focusing on the analysis of the specific clients who were really interested in the services offered by the company.

5.3.6.2.4 Orthographical errors, acronyms and abbreviations

Including words and phrases that describe the organisation's business and the clients' needs and requirements could create an effective lead to the website. Including common misspelling, acronyms and abbreviations, increases the chances of finding the website (Barnett, 2004). The Web analyst should identify whether English-speaking clients might have some form of impairment when writing. Upward and Pulcini (2003) explain the reasons why Italians who can communicate in English commit

orthographical errors due to the phonetic basis of Italian spelling. The needs of these clients might be worth addressing, due to the proximity of the Maltese islands to Italy. Including phonetically spelt English keywords and phrases could contribute towards increasing ROI.

5.3.6.2.5 Align keywords with content

It is important to select the right keywords from the data available from the analytical tool, and to align these with relevant content that matches the user's query keyword. Search words and phrases should deposit the user on the expected content specific entry page, otherwise high website abandonment is inevitable. Hoang (of O'Hagan, Smith & Amundsen - www.osalaw.com cited Drew, 2004) redesigned the law firm's website into three distinct areas catering for the interests of the different user interests (i.e. law practice, publications and events and careers) after having recognised through the use of Web analytics that three types of visitors, all with specific requirements, had to be addressed.

5.3.6.2.6 Search engine marketing life-cycle

A search engine marketing strategy should be prepared. This should be constantly tested, revised and optimised, with the aim of increasing the ROI, measuring the company's website interaction with the user throughout the total span of the customer life cycle (*see chapter 5.1.2*).

5.3.6.2.7 Competition monitoring

Organisations should constantly monitor what their competition is doing and how they rank on the various search engines, in order not to become invisible. Search engines accept higher monetary offers (*bid ranking*) in order to rank results higher on their search pages. This activity called '*paid search*' is the act of being listed in the results of specific search phrases or keywords' (Marckini, c2003) that may take the form of paid advertising or sponsorship options. Marckini insists that unless the website is found in the first three search page results ranking on the fourth page or beyond will obtain no click-throughs. It is therefore advisable to optimise performance in paid searches, taking into consideration the ROI for the continuous monitoring of the metric results over time.

5.3.6.2.8 Meta tag, headings and subheadings

Barnett, (2004, p.3-4) and Potter, (2002) suggest organising keywords and phrases in the headings and subheadings of the HTML code, and preferably also in the first sentence of the text, to determine a unique set of keywords for each page.

5.3.6.2.9 Search engine submission and ranking

Obvious as it may seem, Potter (2002) suggests that organisations should manually submit their websites to at least the most popular global search engines and the main country-specific search engines and directories ensuring that exposure is obtained. Ideally, this submission process is performed on search engines relevant to where in the world the organisation is maximising its strategic efforts, periodically keeping track of the ranking and may be compared to metric results previously obtained.

5.3.6.2.10 Link building campaigns

Increasing the traffic to your site increases the possibility of acquiring more customers. This may be obtained by link building campaigns. Firms may agree to the reciprocal linking of their websites. Ideally incoming links should come from relevant and highly-ranked websites. Links from business partners also contribute to improving website search engine ranking (Barnett, 2004, p.6; Chaffey, 2002, p.336-337) eventually increasing the overall ROI.

5.3.6.2.11 Search engine indexing

Marckini (c2003) claims that with the use of adequate tools and consultants, FordDirect.com - <http://www1.forddirect.fordvehicles.com> managed to increase its search engine rankings by 940%, optimised its search engine referrals by 4,838% and increased its visitors by 73,000 per month. This was done by modifying its single dynamic site to a multi-page static site, facilitating the indexing of each page by search engines, coupled with a search engine positioning campaign. FordDirect.com also investigated search behaviour and linguistic patterns to optimise its ROI.

5.4 OPTIMISE CONVERSION

5.4.1 INTRODUCTION

‘The final value of an offer (an advertisement, an email newsletter or any other means of getting attention and turning a prospect into a customer) is conversion.’ (Sterne, 2004d)

The conversion stage is the culmination of one of the primary objectives of a website, that of leading customers to the predestined goal, within the organisation’s strategy (the registration process to receive emailed newsletters, exchange of a product for cash, the download of a brochure, etc.). ‘For a company to achieve its goals, visitors must first achieve their goals’ says Shreeve (cited Eisenberg and Novo, 2002, p.11) and therefore ‘the conversion rate is a measure of an on-line company’s ability to persuade visitors to take the action they want them to take. It is a reflection both of a company’s effectiveness and of customer satisfaction’. The findings of a study as reported by Suchet (2003) of Kefta Inc. – www.kefta.com specifically conducted on on-line order abandonment, indicate that more than 50% of converted users abandon their shopping carts before the checkout process. The study reveals that 66% of these users were interested in the products on offer, but the majority of these claimed that the time to purchase was not right, the price was not favourable, they needed more help and information or were not comfortable purchasing on-line. It was also revealed that website usability (*see chapter 2.7*) contributed to less than 10% of those users who abandoned the site because of its complexity.

Boston Consulting Group (cited Caroll, 2002) identified various defects a website might have through the conversion stage of the customer life cycle. Their detailed funnel model is represented in Figure 5.4-1.

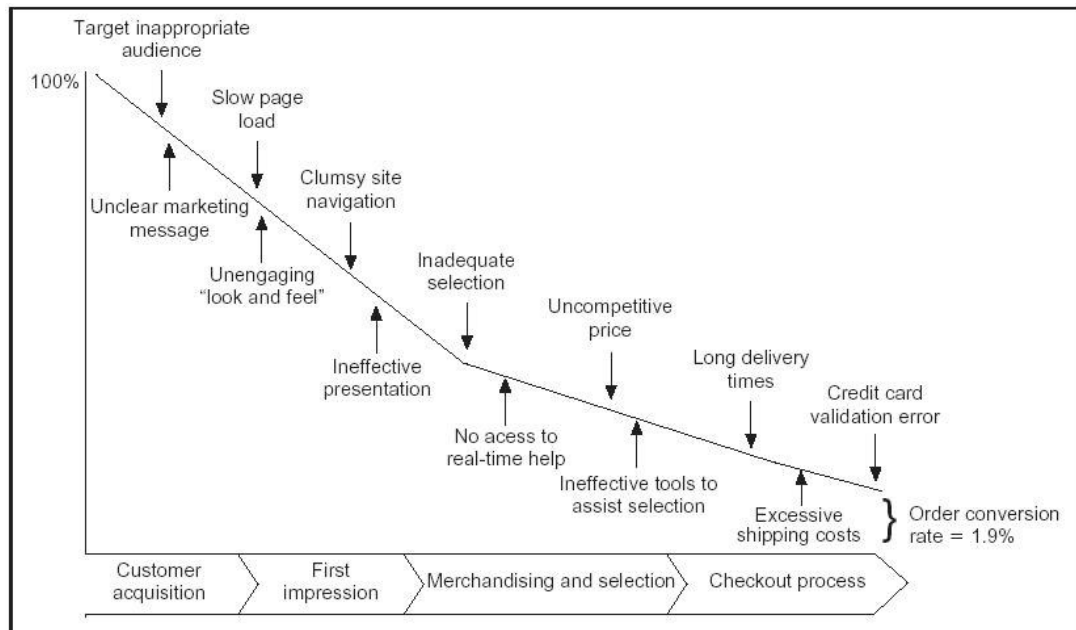


Figure 5.4-1 Conversion rate illustration: Reproduced from: Boston Consulting Group, (cited Caroll, 2002)

The Web analyst needs to identify these issues and provide for the necessary changes that would effectively optimise these metric results. Peterson (2004) indicates that activities leading to on-line purchase, the collection of lead-generation information, and the increase of the enterprise's ROI are the major categories of conversation which a Web analyst should be measuring.

'Conversion refers to those lead generation activities that bring a prospect one step closer to a purchase...getting [customers] to buy often takes several prior conversion activities' (Edwards, c2003).

5.4.2 CONVERSION METRICS

The conversion metrics in Figure 2.6-1 are used to determine procedures that can increase ROI, and identify solutions to reduce customer dropouts from the website.

The following metrics have been extracted from recommendations made by Peterson, (2004) and Inan, (2002) to help the Web analyst establish activities that optimise on-line purchasing, assist in lead-generation, and reduce operation costs:

<ul style="list-style-type: none"> ▪ Conversion rates ▪ Number of conversions ▪ Ratio of conversion to acquisitions ▪ Ratio of conversions to reaches ▪ Number of visits before conversion ▪ Abandonment rates ▪ Campaign conversion rates ▪ Number of clicks before conversion ▪ Cost-per-conversion ▪ Unit value of conversion ▪ Net value of conversion 	<ul style="list-style-type: none"> ▪ Average time spent before conversion ▪ On-line-affected offline conversions ▪ Campaign Return on investment ▪ Segment conversion rates ▪ Average order value (AOV) ▪ AOV for new and returning customers ▪ Percentage of orders from new and repeat customers ▪ New and repeat customers conversion rates ▪ Sales per visitor ▪ Searches yielding results to search no results
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Figure 5.4-2 Conversion Metrics: Adapted from: (Source – Inan, 2002; Peterson, 2004)

Inan (2002, p.65) suggests that the Web analyst should perform path analysis (*see chapter 5.5.4*) to determine the critical paths customers take to reach the conversion

stage in such a way as to identify what triggers drop-offs from the website. Intelligence of this kind induces the Web analyst to amend website content or advertising campaigns, re-design sections of the website, offer personalisation procedures, and create help instructions through usability testing techniques (*see chapter 2.7*). Peterson (2004, p.180) recommends that conversion rate measurements be monitored on a daily basis to ensure that the business goals are being achieved, while drastic changes should be investigated instantly to identify reasons for the shift in the trends. Conversion rates, conversion costs and average order values (AOV) are to be monitored closely to determine whether the ROI of a specific campaign is worth retaining or dismantling without delay. These performance indicators will enable the Web analyst to establish how many resources should be placed with the specific customer acquisition and retention programs.

5.4.3 ON-LINE PURCHASE ANALYSIS

5.4.3.1 Overview

Dropouts, in particular shopping cart abandonment, are to be expected during the on-line purchase process (WebTrends, 2003g). The Web analyst must take note of the so-called 'moment of truth' as illustrated by Friedlein, (2003, p.346) in order to optimise the customers' experience during the on-line conversion process. Typically these may be the registration page or the exact point of purchase. The smallest change during this critical process has a direct impact on the company's *bottom-line*. During these final stages of the on-line purchase process, users are at their apex of

circumspection, otherwise known as *perceived risk*, as illustrated by Bauer (1974 cited Kotler, 2000, p.182), because it entails a great physiological effort on the part of the user to commit, divulge personal information, make a purchase decision, and fork out the money to someone unknown for something the user did not physically inspect.

5.4.3.2 *Lessons learned and tip-offs*

5.4.3.2.1 Dropout monitoring

The inability to find the right on-line service quickly leads to user frustration and eventual dropout. The prospective buyer wants to know more about products and services prior to establishing whether the company may be considered trustworthy. It is essential to modify the process and personalise the content to meet the requirements of the target audience. H&R Block Inc. – www.hrblock.com employed user path analysis to eliminate user loops and streamline the process of moving from the home page to a determined service. A few simple changes increased the website visitor-to-service conversion rate by more than 3% percent between 2001 and 2002 (WebTrends, 2003e). Fairbanks of Draftworldwide Inc. – www.draftworldwide.com (cited Drew, 2004) determined the potential customer drop-off points, modified content and process, thereby decreasing drop-offs by more than 50%.

5.4.3.2.2 Shopping cart abandonment

Examining the checkout process and identifying the dropout points is key to establishing the reasons for the inability of convincing the user to convert to a purchase. ‘Once customers start the checkout process, they should be expected to

finish it, and any unfinished checkouts are a matter of concern' WebTrends.com (2003g). Fry Consultants Inc. - www.fryconsultants.com, designers and developers of the world's top e-commerce websites, concluded that having managed to slightly increase the percentage of visitors completing a checkout process substantially increased their clients' sales and ROI. Aided by Web metrics, they achieved this re-design by analysing the step-by-step process of customer checkout behaviour before and after the implemented changes, using website effectiveness analysis and scenario-based website design. Fry Inc. used reverse path analysis to identify problem pages that required potential customers to request help from customer service and forward path analysis to match navigational systems with actual user on-line behaviour, identifying unclear links and jumps. They also conducted 'early leaver analysis' to establish dropout points from the check-out process. These streamlined changes contributed towards a \$1.2 million annual increase in turnover in the pilot website. Fry Inc. in turn sold the idea to their customers, enticing them to upgrade their systems.

Having realised through Web metrics that shopping cart abandonment is partly due to too many steps to reach the required goal of concluding a purchase, Amazon – www.amazon.com reduced these steps and managed to patent their '1-Click™ Ordering' system way back in 1997 (Boulton, 1999). Barnes & Noble – www.barnesandnoble.com reacted accordingly introducing the 'Express Checkout' feature that ended in an injunction won by Amazon over their rivals to stop using this procedure.

5.4.3.2.3 Personalisation

Davis (cited Friedlein, 2003, p.252) of First Direct - www.firstdirect.com claims that personalising procedures through segmentation, obtained an efficiency rate of over 4%, and managed to attract 30% of their new customers through referrals, without any marketing spending. Personalisation purports a message of recognition to the user and increases loyalty. Davis insists that, although automation assists in the basic processes, the human touch ought not to be neglected and communication via short message service (SMS) and email is indispensable to increase customer value and for the eventual reduction of customer service costs.

5.4.4 LEAD-GENERATION ANALYSIS

5.4.4.1 Overview

Lead-generation mechanisms provide a wealth of personal information about the visitor (Peterson, 2004, p.176). Lead-generation is triggered when the potential customer takes action and makes additional contact with the enterprise through purposely-created mechanisms. Filling out a form, registering for an event, subscribing to email newsletters and receiving feedback by telephone, are examples provided by Edwards (n.d.). Gilbert (cited Drew, 2004) of The Hacker Group – www.hackergroup.com claims that determining the drop-off points by the user from lead-generation mechanisms gives insight to the Web analyst to enable the determination of factors inhibiting conversion. Tracking conversions in a developed marketing-lead database enables the conversion of several registrants into customers

(Acadia cited Drew, 2004). The Web analyst should determine what the users are looking for on the website and deliver it to them making it easier for them to convert (Edwards, n.d.).

5.4.4.2 *Lessons learned and tip-offs*

5.4.4.2.1 **Form design**

When loyalty has not yet been established between the organisation and the customer, form design should be simple and should request only indispensable personal detail from the visitor. By using Web analytics Elugardo (cited Drew, 2004) of Ybos Corporation – www.ybos.net recognised that their percentage of visitors-to-purchases was not satisfactory. The organisation identified the user drop-off points and by making their forms simpler, providing better instructions and eliminating a step, they immediately obtained better results, thereby optimising their ROI.

5.4.4.2.2 **Prototyping and differentiation of products**

From the information obtainable either by direct questionnaires or through the analysis of visitor behaviour, the nature of the audience may be determined. Mayer (cited Friedlein, 2003, p.230) of Netpoll – www.netpoll.net claims that through visitor research, segmentation of on-line customers was possible enabling the organisation to differentiate content, pricing, charging mechanisms and services, offered to different users, resulting in positive feedback and exceeding ROI predictions.

5.4.4.2.3 Lead-generation activity schemes

Website locations with lead-generation activity should be tested and measured using different schemes of colour, size, font, and language and results should be monitored on a test basis using the appropriate metrics. The use of unequivocal action strategically-placed statements (such as ‘Register here’ or ‘Contact our customer care now on our free-phone’), is indispensable for the success of lead-generation schemes. All leads must be examined and action on them taken immediately, in order to turn a prospective buyer into a loyal customer (Edwards, n.d.). Withholding user-valuable website content from the client may encourage the user to spontaneously submit personal data and contact details in order to obtain the information desired. On-line registration is essential in order to engage in new customer relationships, the ultimate aim being maximisation of consumer satisfaction and brand loyalty and higher ROI. WebTrends (2003) explain how leads were increased by 40% by changing the position of the registration icon on the Black & Decker – www.blackanddecker.com website.

5.5 OPTIMISE RETENTION

5.5.1 INTRODUCTION

‘The cost of retaining customers is much less than the cost of acquiring new ones...regardless of the channels used by the business.’ (Inan, 2002, p.70)

In 1996 Reichheld F. (cited Kotler, 2000, p.49) claimed that the cost of acquiring a new customer is five times more than the cost of satisfying and retaining a client. He also claimed that the average customer defection rate is of ten percent per annum and that the retained customer generates incremental annual profits. Novo (n.d) states that on-line customer acquisition costs could range between 6 to 7 times higher than on-line customer retention costs.

Customer-centric metrics may be used to improve customer retention by preventing customer defection, to obtain customer intelligence, to create the platform for Web personalisation and customer relationships, thus bonding customers and the enterprise together. This experience increases switching costs, thereby reducing the probability of the customer turning to competition, situated only a click away (Friedlein, 2003, p.272; Novo, n.d.). Amit and Zott (2001, p.505) state that repeat transactions increase transaction volumes that may be achieved through ‘lock-in’, preventing the migration of customers to competitors.

Vatanasombut *et al* (2004, p.65-69) argue that organisations that perform cost/benefit analysis on their retention programmes realise that not all categories of customers yield a positive ROI. The survey they conducted revealed that customers should be sorted

into categories based on their technological sophistication level. It was also established that retention of on-line customers must be oriented towards trust, by creating a perceived on-line secure environment that empowers the user to remain committed with the organisation, increasing perceived competition switching costs.

‘Measuring the lifetime value of your customers is thinking of your customers as assets.’ (Sterne, 2002, p.301)

Although some business models do not expect frequent visits, due to the nature of the product or service on offer, it is unlikely that these websites are designed to allow a visitor to enter the website, make a purchase and leave without ever returning again (Peterson, 2004, p.220). The personal circumstances of customers cannot be completely known, and returning visitors are prospective buyers if the organisation can nurture a good relationship with the customer.

Notwithstanding Web analytics, customers are not likely to return unless the organisation is geared towards offering prices which compare well with the competition, has efficient marketing campaigns that help build brand image, keeps the promises it makes to its customers and builds and maintains a good reputation (Peterson, 2004, p.219).

5.5.2 RETENTION METRICS

The retention metrics in Figure 5.5-1 are a measurement of customer loyalty and trust factors with the organisation.

The following metrics have been extracted from recommendations made by Peterson, (2004) and Inan, (2002) to help the Web analyst establish the success of the website and the organisation's strategies with respect to retaining customers:

<ul style="list-style-type: none"> ▪ Number of returning visitors ▪ Average frequency of returning visitors ▪ Ratio of returning visitors to all visitors ▪ Loyalty metrics ▪ Duration of retention ▪ Frequency of visit ▪ Frequency of retention ▪ Recency of visit ▪ Recency of conversion 	<ul style="list-style-type: none"> ▪ Value of customer ▪ Cost of customer retention ▪ Net value of customer retention ▪ Percentage of share of the customer's business ▪ Activity of retained visitors ▪ Views of key pages and contents ▪ Retained visitor conversion rate ▪ Customer retention rate ▪ Average frequency of return for retained visitors
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Figure 5.5-1 Retention Metrics: Adapted from: (Source – Inan, 2002; Peterson, 2004)

Although Friedlein (2003, p.244) claims that there is 'not enough published proof' that personalisation contributes positively to an organisation's ROI, Sterne (2004d) demonstrates how to measure 'behavioural optimisation' through the integration of Web analytics, email marketing, click-stream analysis, Web personalisation, CRM, on-line analytical processing (OLAP) and dynamic content delivery, with the

organisation's legacy systems and data. The Web analyst's capability of identifying and delivering the right message to the right audience at the right moment is instrumental in creating the necessary loyalty bond with the customer. This is possible according to Sterne (2004d) when emails are targeted, content is more personalised and up-selling and cross-selling more specific. These activities are possible when data is obtained and analysed from individual responses through personalised surveys, historical click-stream data, purchase behaviour and real-time website tracking analysis.

Inan (2002, p.70) claims that the 'best customer analysis' techniques may identify high-value customers, and therefore the Web analyst can, after having examined the retention metrics, personalise the relationship with the customer in order to increase the retention rate.

In such a dynamically evolving competitive Web environment, where competitors standing one mouse-click away are actively investing in strategies to attract one's organisation's potential returning customers, Peterson (2004, p.204) claims that attrition and churn are unavoidable.

5.5.3 REGENCY, FREQUENCY AND MONETARY VALUE ANALYSIS

5.5.3.1 Overview

‘Our customers require robust and accurate data to enable them to create more profitable customer relationships by getting more customers spending more money, more often.’ (RedEye, 2003, p.3)

Recency measures how recently a customer has purchased/visited, frequency measures how often a customer purchases/visits and monetary value measures how much a customer spends (Friedlein, 2003 p. 310).

RFM analysis (or *best customer analysis*) as illustrated in Figure 5.5-2 answers many questions regarding the visits of website customers. With the adequate clustering tools, customers may be divided into segments, enabling customer profiling (Sterne, n.d.), permitting the Web analyst to devise accurate strategies to engage with customers (Inan, 2002, p. 80), determine a precise picture of how a website is being used, and make the fine changes which will increase yield.

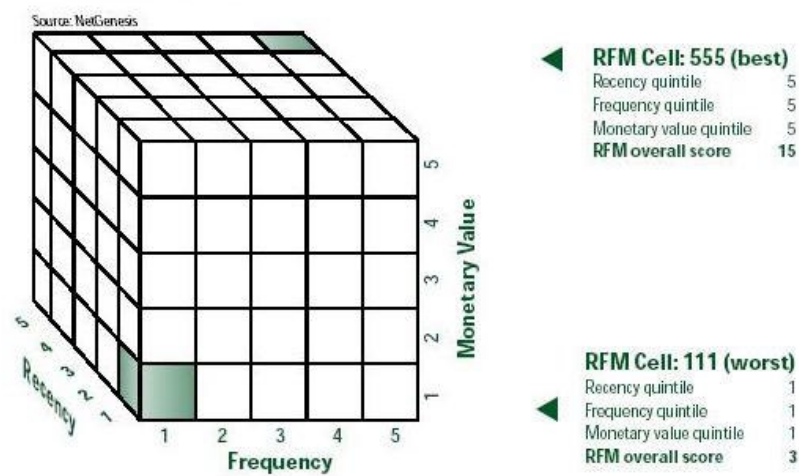


Figure 5.5-2 Visualisation of 125 RFM segments: Adapted from: Sterne, (2002, p.289)

As recency is considered to be the strongest indicator for predicting the customer's future behaviour (Sterne, n.d.; Inan, 2002 p. 80) based on the nature of a product or service on offer, the loyalty factor can be measured. Tools to track 'unique visitors' such as cookies, IP address recognition or log-in capabilities may contribute to recognising the customer, enabling website customisation, triggering-off the use of 'welcome messages' and targeted special offers, used to entice the customer to purchase on-line. Alternatively, customers who have furnished their contact details may be contacted in the same way by email, SMS, or telephone, once it is established that they have not visited the website on a regular basis. The scope of the Web analyst is to increase recency in order to increase the potential of future on-line or multi-channel purchasing or service delivery. 'The longer it has been since you had contact with the customer, the less likely it is that the customer is still a customer' (Novo, n.d.).

Frequency patterns illustrate how many times the users entered the conversion phase on a particular website, whether their intentions were to snoop or to purchase (Inan, 2002, p.81). Changes to the metric results indicate a change of relationship between the enterprise (through the website) and the user. Sterne (n.d.) recognises the practical potential of monitoring frequency patterns and establishes that producers can use frequency information to notify distribution channels of potential sales, while service organisations that monitor customer activity can establish the right moment to up-sell and cross-sell. Frequency patterns are a reflection of discontent of the customer or the possibility of increased business, both directly affecting the ROI.

The monetary value is only measurable when a purchase is concluded on-line, determining the net revenue and the profit margin data, which contribute to establish the characteristics of the customer with respect to his buying preferences. It is at this point that the three factors of RFM analysis are put to the act, in a three-dimensional representation (*see Figure 5.5-2*). The Web analyst may calculate the profitability of different types of consumers using appropriate mathematical formulae to establish whether a marketing campaign to target the customers situated in the lowest RFM cells will yield a profit and contribute towards the enterprise's ROI.

5.5.4 PATH ANALYSIS

5.5.4.1 Overview

Path analysis, also referred to as click-stream analysis, and considered to be the simplest of customer-experience measurement, is the scrutiny of a consecutive stream of clicks a user performs while navigating the website, outlining a step-by-step path of the pages visited from point of entry up to the exit page (Inan, 2002, p.122; Sterne, 2002, p.158; Friedlein, 2003, p.297). The data obtained from the metrics reveal the effectiveness of the information architecture, and provides behavioural data about the users on the website, contributing to increasing the ROI (Inan, 2002, p.122). Real-time user path-analysis enables the Web analyst to recommend the elimination of low usage pages, transferring the data into higher-visited pages, enhancing the website and shortening the paths-to-action that bring revenue to the enterprise (Jaret of *e-design* cited Drew, 2004; Eisenberg of *Future Now Inc.* cited Drew, 2004).

5.5.4.2 Lessons learned and tip-offs

5.5.4.2.1 Segmentation and personalisation

Click-through scenarios for each target user category, during the design stage of a website or during a re-vamp, should preferably include the path of every predicted micro-action leading to the specified predetermined objective. Through the use of Web metrics it is possible to examine targeted segments of individuals, in order to identify which pages on the website fall short of the necessary focus they were designed to deliver. Budhai (cited Drew, 2004) of the U.S. Department of Labor -

www.bls.gov claims that taking advantage of the statutory personal details of their customers in their back-end database (i.e. age, gender, race, occupation and education levels) they are able to proactively respond to the returning public on a segment-by-segment basis.

5.5.4.2.2 Navigational patterns

Establishing why customers return to your website, what they do on each page, how long they take to navigate from one page to another, and determining why they fail to get to the pre-established position - be it to purchase, download a white paper, or fill in a form to receive an email - is of paramount importance to optimise the retention process. Also crucial is the examination of the trends and travel patterns the user takes on the website in order to establish what the visitor is looking for, possibly determining the user's needs and interests (Inan, 2002, p.123), thus organising the critical paths, eliminating intermediate pages and actions. The effectiveness of the navigational elements of the pages on the website needs to be established. Identifying and redesigning those pages (sometimes with pop-ups, links and banner-ads) which create confusion, distract visitors and sidetrack their attention (Inan, 2002, p.122) - sometimes inducing the returning user to click outside the pre-established desired schema the Web page was designed to deliver - is essential in optimising ROI. Kostin (cited Drew, 2004) of the Association of American Medical Colleges – www.aamc.org explains how it was possible to understand the needs and interests of the loyal customers within the different segments through a homepage click-through study and with the aid of

usability testing exercises. A redesign of the homepage and the realignment of content creating shadow pages to identify different paths proved to be successful.

5.5.5 CONTENT ANALYSIS

5.5.5.1 Overview

Eisenberg (cited Eisenberg and Novo, 2002, p.8) claims that introducing relevant content on your website, reduces inbound call-centre metrics, decreases support inquiries, increasing customer satisfaction metrics. In terms of ROI, this automatically increases the value if the content is easily found and utilised by the on-line client.

5.5.5.2 Lessons learned and tip-offs

5.5.5.2.1 Links and selected content

It is fundamental to determine which the most popular pages are and to place links and specially selected content to catch the attention of the returning identified individual user who forms part of the target segment. This is done in order to enable the user to enjoy the stay, retrieve the information researched and return to the website again and again, creating the much desired loyalty factor. In order to increase the ROI, special features and product-offering must be strategically placed on the most popular pages, in order to deliver user-specific content where it is seen most (Turner, M. of Timex Corp. - www.timex.com cited Drew, 2004).

5.5.5.2.2 Support systems

It is possible to optimise retention by keeping track of returning visitors who have learned how to use the organisation's on-line support system. The Johns Hopkins Bloomberg School of Public Health - www.jhsph.edu, reduced help desk calls to zero, saving an equivalent of one full time help desk employee and making good for the cost of the new application installed (WebTrends, 2003d).

5.5.5.2.3 User feedback and data mining techniques

Tapp (cited Friedlein, 2003, p.79) of Magicalia Ltd. – www.magicalia.com uses user feedback to fuel their robust content model and information architecture, trying to satisfy clients as much as possible, keeping them gratified and inviting them to return to the website again and again, increasing the loyalty factor. While allowing the look and feel of the website to be driven by the customer, the back-end user profile database is managed by the company. Customer information left behind at any contact point with the organisation is 'stitched' to the database, for the purpose of delivering to that user the right content at the opportune moment.

5.5.5.2.4 Migration to new content management systems

Coombs (cited Friedlien, 2003, p.110) of Channel 4 Interactive – www.channel4.co.uk claims to have redesigned and restructured their whole website as a result of their migration to a new content management system (CMS). However, Coombs also states that by concentrating their efforts on only a few key areas of the power and flexibility of their complex CMS they managed to obtain 80% of the user deliverable benefits from the system, saving resources and optimising their ROI.

6 CONCLUSION

This dissertation has looked into whether organisations with on-line presence optimise their ROI as a result of the adoption of Web analytics. It has been clearly demonstrated that organisations are not taking advantage of Web analytics to optimise their ROI and that there is ample room for advancement in this field. It is also evident that although the majority of organisations have access to Web measurement tools, the level of sophistication and customer centricity of the applications in use is low. Organisations are unaware of the potential power of performing usability testing on their websites and the importance of measuring the complete browsing history by unique visitor. Executives are not regularly incorporating web analytics into their strategic on-line decision making processes. Management is not investing enough time, money and human resources towards maximising Web analytics applications' potential.

To this aim and to encourage the use of Web analytics and to augment its adoption for the optimisation of ROI, executives are directed to the *Vade Mecum* section in this dissertation where solutions to problems faced by international enterprises are strategically placed within the customer lifecycle framework.

The researcher believes that when the local industry reaches a certain level of maturity and readiness to promote products and services on-line, metrics that measure on-line marketing will become run of the mill. It is being predicted that in the future more and more organisations will move from 1st Generation 'site stats' to more intrinsic 2nd and 3rd Generation e-metrics, as they progress to reap the fruits of e-customer intelligence,

an evolution similar to that followed by accounting systems, from simple databases to produce daybooks for statutory and basic accounting functions, to fully integrated systems built around customer relationship management systems to assist the entire enterprise across the whole value chain.

7 IMPLICATIONS FOR FUTURE RESEARCH

The *Vade Mecum* and the survey outlined in this dissertation can be used to identify future research directions that address current gaps in the evolving literature in this area, especially with respect to the local scenario. The following are a few promising research directions:

- Unveiling the reasons why on-line tracking facilities are not available at the same level of sophistication to all sectors of the economy.
- Obtaining a clear understanding of how Web developers and Web hosting service providers are offering Web tracking tools to their clients and the scalability of the applications offered as part of their services.
- Obtaining insight from managers as to the reasons for and the perceptions relating to the current deficiency in usability and accessibility testing on local websites with the aim of providing practical solutions to overcome these prejudices. A relationship between the nature and dynamic content of the website compared to the level of testing performed by organisations would be of interest.
- Determining whether organisations take into consideration the customer centric website tracking analysis requirements during the design stage or whether they are adopted after the launch of a website. Selected organisations could be evaluated against methodologies similar to the 'Design For AnalysisTM' framework (NetGenesis, 1998, passim.).

- Investigating the reasons why organisations in the local scenario are reluctant to invest in on-line revenue generating activities.

- Delving into the merits and the metrics of back-end integration as an enabler of the functionality of front-end applications to uncover the relationship that exists between back-end metrics and the front-end net-enabled applications as they contribute towards robust Web analytics methodologies.

8 REFERENCE LIST

- ABC Interactive (2002). *A Comparison Between Ad Serving Methodologies and the Impact of Robot and Spider Activity on the Measurement and Reporting of Ad Impressions and Clicks*. [on-line] ABC Interactive. Available at: <http://www.abcinteractiveaudits.com/news/case040202.pdf> [Accessed 19th May 2004]
- Aylett, A. (2003). Getting the most out of self-service. *eLoyalty*. [on-line] May. 12, 2003. Available at: http://www.eloyalty.com/publications/files/wp_self-service.pdf [Accessed 11th June 2004]
- Amit, R. and Zott, C. (2001). Value creation in e-Business. *Strategic Management Journal*, 22: 493-520
- AWStats (2004). *Log analyzers comparison* [on-line] AWStats. Available at: http://awstats.sourceforge.net/docs/awstats_compare.html [Accessed 19th June 2004]
- Balnaves, M and Caputi, P. (2001). *Introduction to quantitative research methods: An investigative approach*. London: Sage
- Barnett, E. (2004). *Copywriting for search engine placement*. [on-line] e-consultancy-May. 2, 2004 http://www.edesigninc.com/news/newsletters/whitepapers/eb_wp_20040427.pdf [Accessed 22nd May 2004]
- Boulton, C. (1999). Amazon wins first round in 1-Click battle. *Internet Planet*. [on-line] Dec. 2, 1999 <http://www.internetnews.com/ec-news/article.php/253081> [Accessed 2nd June 2004]
- Bunker, G. (2002). *Public report – ebusiness survey 2002*. [on-line] Usability by Design Limited-Mar. 10, 2002 http://usability.uk.com/downloads/ebusiness_survey2002.pdf [Accessed 25th June 2004]
- Burby, J and Jacobs, M. (c2003). *Mastering the website optimization process*. San Jose CA USA: WebTrends-NetIQ
- Cap Gemini Ernst & Young (2000). *Measuring the Future*. Cambridge MA: Cap Gemini Ernst & Young Center for Business Innovation
- Carroll, M. (2002). *Usability and web analytics: ROI justification for an Internet strategy*. [on-line] Interactive Marketing- Oct. 2, 2002. Available at: http://www.theusabilitycompany.com/resources/research_pdfs/usability_and_web_analytics_jan_03.pdf [Accessed 25th June 2004]
- Chaffey, D. (2002). *E-Business and e-commerce management*. UK: FT Prentice Hall
- Chaffey, D. (2004). What's on your mind re: Web Analytics? *E-Consultancy-expert forums*. [on-line] e-consultancy-May. 7, 2004 Available at: <http://www.e-consultancy.com/forum/101040-what-s-on-your-mind-re-web-analytics.html> [Accessed 12th May 2004]
- ChannelMinds. (2003). Report raises serious issues with on-line business modeling: study demands re-think on web analytics standards. *My Channel Minds News Reader*. [on-line] Nov. 20, 2003 http://www.channelminds.com/imprimersans.php3?id_article=1402 [Accessed 22nd May 2004]
- Crane, A. S (2003). Actionable e-Metrics. *Intelligent Enterprise*. [on-line] Feb. 1, 2003. Available at: http://www.intelligententerprise.com/030201/603feat2_2.jhtml?requestid=253140 [Accessed 2nd May 2004]
- Cunningham, M. J. (2002). *E-Strategy*. UK: Capstone Publishing
- Cutler, M. and Sterne, J. (2000). *E-metric – business metrics for the new economy*. Cambridge, MA: NetGenesis Corp.
- DeVaus, D.A. (1985). *Surveys in social research*. Sydney: Allen and Unwin
- Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications)

- Doyle, A. (1952). *The complete Sherlock Holmes*. Garden City, New York: Doubleday
- Drew, G. (2004). *Heroes of the results revolution: 25 real stories of better results through web analytics*. [on-line] WebTrends-May. 1, 2004 Available at: http://www.netiq.com/f/form/form.asp?id=2480&origin=ON_bp_revge [Accessed 2nd May 2004]
- Easton, V. and McColl, J. (n.d.). *Sampling*. Statistics Glossary 1(1) [on-line] Available at: http://www.cas.lancs.ac.uk/glossary_v1.1/samp.html#clustsamp [Accessed 2nd June 2004]
- e-consultancy (2003). *Online Marketing Benchmarks: Setting realistic goals and how to achieve them*. [on-line] e-consultancy-Jun. 2003. Available at: http://www.e-consultancy.com/publications/marketing_benchmarks/online_marketing_benchmarks.doc [Accessed 26th May 2004]
- e-consultancy (2004). *Usability & accessibility – roundtable output*. [on-line] e-consultancy-May. 2004. Available at: <http://www.e-consultancy.com/publications/usability-and-accessibility-roundtable/usabilityandaccessibility-2004.doc> [Accessed 16th June 2004]
- Edwards, A. (c2003). *Mastering the art and science of online lead generation*. San Jose CA USA: WebTrends-NetIQ
- Eisenberg, B. (2002). Forward. In: Eisenberg, B. and Novo, J. ed. (2002). *The Marketer's Common Sense Guide to e-Metrics: 22 benchmarks to understand the major trends, key opportunities, and hidden hazards your web logs encounter*. USA: Future Now: 3-8
- Eisenberg, B. and Novo, J. ed. (2002). *The Marketer's Common Sense Guide to e-Metrics: 22 benchmarks to understand the major trends, key opportunities, and hidden hazards your web logs encounter*. USA: Future Now
- eMarketer (2004). Does the perfect online ad plan exist? *eMarketer*. [on-line] Jun. 10, 2004. Available at: <http://www.emarketer.com/Article.aspx?1002847> [Accessed 16th July 2004]
- Evans, R. (n.d.). Email marketing timing: When and how to use email marketing for best results. *Email Marketing Resource Center*. [on-line] Available at: <http://www.email-marketing-software-resource.com/rc/email-marketing-timing.html> [Accessed 26th April 2004]
- Friedlein, A. (2003). *Maintaining & Evolving successful commercial websites: Managing change, content, customer relationships and site measurement*. USA: Morgan Kaufmann Publishers
- Hallerman, D. (2004). *Measuring online advertising effectiveness: Preview*. New York USA: eMarketer, Inc.
- Hauser, J. and Katz, G. (1998). *Metrics: You are what you measure!* Research. MA: ICRMOT and CIPD
- Hellriegel, D., Jackson, S and Slocum, J. (2002). *Management: A competency-based approach*. Canada: South Western
- Herron, B. (c2003). *Don't obsess over absolute numbers, focus on trends*. San Jose CA USA: WebTrends, NetIQ
- Kotler, P. (2000). *Marketing Management. (The Millennium ed.)*. New Jersey: Prentice-Hall
- Inan, H. (2002). *Measuring the success of your website : A customer-centric approach to website management*. Australia: Prentice Hall
- Inan, H. (2004). Definition of Web Analytics. *Web Analytics Glossary* [on-line] Available at: http://www.hurolinan.com/book/br_detail.asp?LocatorCode=420 [Accessed 5th May 2004]
- Jensen, J (n.d.). Ten Easy Ways to Increase Response Rates For Your Online Survey. *QuestionPRO.com* [on-line] Available at: <http://www.questionpro.com/marketing/deploy01.doc> [Accessed 5th July 2004]

- MacPharson, K. (2000). B2B discovers e-mail marketing' ClickZ Network solutions for Marketers. *Clickz* [on-line] Apr. 17, 2000 Available at: http://www.clickz.com/experts/em_mkt/em_mkt/article.php/822661 [Accessed 10th April 2004]
- Marckini, F. (c2003). *Maximize the ROI of your search engine marketing by measuring beyond click-through*. San Jose CA USA: WebTrends-NetIQ
- Inan, H. (2002). *Measuring the success of your website: A customer-centric approach to website management*. Australia: Prentice Hall
- Morris, H.D. (2003). Predictive Analytics and ROI: Lessons from IDC's Financial Impact Study. *IDC Analyze the Future*, (1) 2-8.
- NetGenesis (1998). *Design for Analysis: Delivering the promise of e-business intelligence*. Cambridge, MA: NetGenesis Corp.
- Nielsen, J. (2000). Why you only need to test with five users. *UseIt.com*. [on-line] Mar. 19, 2000. Available at: <http://www.useit.com/alertbox/20030107.html> [Accessed 18th June 2004]
- Nielsen, J. (2003). 'Return on investment for usability'. *UseIt.com*. [on-line] Jan. 7, 2003. Available at: <http://www.useit.com/alertbox/20000319.html> [Accessed 12th June 2004]
- Novo, J. (n.d.). *Increase customer retention by analyzing visitors segments*. San Jose CA USA: WebTrends-NetIQ
- Overture (n.d.). *Maximize your return on investment*. [on-line] Overture. Available at: http://www.content.overture.com/d/USm/ays/ays_roiP.jhtml [Accessed 12th June 2004]
- Pascoe, D. (2004). Four secrets to online success revealed' Maxamine [on-line] Available at: http://www.maxamine.com/maxamine/Four_Secrets_Revealed_web_assets.pdf [Accessed 20th May 2004]
- Patton, S. (2002). Web Metrics That Matter *CIO Magazine* [on-line] Nov. 15, 2002. Available at: <http://www.cio.com/archive/111502/matter.html> [Accessed 2nd October 2003]
- Pearson NCS, (1997). *Increasing response rates*. [on-line] Pearson NCS. Available at: <http://www.pearsonncs.com/research-notes/97-01.htm> [Accessed 4th July 2004]
- Peterson, E. T. (2004). *Web Analytics Demystified – A marketer's guide to understand how your website affects your business*. USA: Celilo Group Media and CafePress
- Popov, K. and McDonald, L. (2004). E-mail deliverability: The challenges. *ClickZ Network solutions for Marketers*. [on-line] May. 12, 2004. Available at: http://www.clickz.com/experts/em_mkt/email_delivery/article.php/3351411 [Accessed 2nd June 2004]
- Potter, R. (2002). *Search Engine Secrets: How to get a high ranking*. [on-line] e-consultancy. http://www.e-consultancy.com/publications/search_engine_secrets/SearchEngineSecrets.pdf [Accessed 20th May 2004]
- RedEye, (2003). *The RedEye Report: A study into the accuracy of IP and Cookie-based Online Management Information*. UK: [RedEye](http://www.redeye.com)
- RedEye, (n.d.-a). *Segmented emails increase William Hill's online profitability*. [on-line] RedEye. http://www.redeye.com/case_email_willhill.html?nolnktype=body [Accessed 29th May 2004]
- RedEye, (n.d.-b). *How do you get the most revenue from each email*. [on-line] RedEye. http://www.redeye.com/case_email_test.html?nolnktype=body [Accessed 29th May 2004]
- RedEye, (n.d.-c). *easyJet doubles the sales from their banner advertising*. [on-line] RedEye. Available at: http://www.redeye.com/case_drive.html?nolnktype=body [Accessed 26th May 2004]

- Riggins, F. J. and Mitra, S. (2003). *A framework for developing e-business metrics through functionality interaction*. Research: DuPree College of Management's Information Technology Partnership Program
- Rhodes J. S. (2001). A business case for usability. *WebWord.com* [on-line] Oct.21, 2001. <http://www.webword.com/moving/businesscase.html> [Accessed 24th May 2004]
- Rose, B. and Rosin. L. (2003). *Internet and multimedia 11: New media enters the mainstream*. [on-line] Arbitron-Sep. 24, 2003. Available at: http://www.arbitron.com/downloads/Internet_Multimedia_11.pdf [Accessed 7th June 2004]
- Sawhney, M. (2002). Danm the ROI, Full speed ahead. *CIO Magazine*. [on-line] Jul.15, 2002. Available at: <http://www.cio.com/archive/071502/netgains.html?printversion=yes> [Accessed 2nd May 2004]
- Shreeve, J. E. (2002). Where does the money go?. In: Eisenberg, B. and Novo, J. ed. (2002). *The Marketer's Common Sense Guide to e-Metrics: 22 benchmarks to understand the major trends, key opportunities, and hidden hazards your web logs encounter*. USA: Future Now: 9-15
- Sterne, J. (2002). *Web Metrics: Proven methods for measuring website success*. USA: Wiley
- Sterne, J. (2003). E-Metrics: Measuring website success. In: E-consultancy and Netimperative, *Web Analytics – making it work for you. 19th November 2003 London*: Seminar
- Sterne, J. (2004a). 10 steps to measuring website success. *CIO Magazine*. [on-line] Feb. 10, 2004. Available at: <http://www.cio.com/archive/111502/matter.html> [Accessed 2nd May 2004]
- Sterne, J. (2004b). Web metrics versus web analytics. *MarketingProfs.com* [on-line] Mar. 16, 2004. Available at: <http://www.marketingprofs.com/4/sterne14.asp> [Accessed 2nd May 2004]
- Sterne, J. (2004c). Weather vane for the CMO. *MarketingNPV.com* [on-line] Available at: <http://www.marketingnpv.com/04i3article03.asp> [Accessed 15th May 2004]
- Sterne, J. (2004d). *Real time use of web analytics for the management of online campaigns and dynamic marketing*. [on-line] Sitebrand.com. Available at: http://www.sitebrand.com/pdf_en/SB_White_Paper.pdf [Accessed 20th May 2004]
- Sterne, J. (n.d.). *Use customer information to maximize website performance*. [on-line] e-commerceconsortium.co.uk. Available at: http://www.e-commerceconsortium.co.uk/asp/documents/eI3_customers_fin.pdf [Accessed 8th May 2004]
- Suchet, P. (2003). *Kefta reports major findings on online order abandonment*. [on-line] Kefta.com. Available at: <http://www.kefta.com/press/releases/20031208.html> [Accessed 8th May 2004]
- Tan, M. E. (2003). The customer interaction model. *eLoyalty* [on-line] May.23, 2003. Available at: http://www.loyalty.com/publications/files/wp_CIM.pdf [Accessed 8th June 2004]
- Tse, A. (1998). Comparing the Response Rate, Response Speed and Response Quality of Two Methods of Sending Questionnaires: E-mail vs. Mail. *Journal of the Market Research Society*, 40(4), 353-361.
- Upward, C. and Pulcini. C. (2003). *Italian spelling and how it treats English loan words*. [on-line] The simplified spelling Society-Nov. 23, 2003. Available at: <http://www.spellingsociety.org/journals/j20/italian.html> [Accessed 22nd May 2004]
- Vatanasombut, B., Stylianou, A and Igarria, M. (2004). How to retain online customers. *Communications of the ACM*. 47(6), 65-69
- WebFinance Inc. (2004). Definitions. *Search for a term* [on-line] Available at: <http://www.investorwords.com> [Accessed 9th May 2004]

- Webopedia (2004). The #1 Encyclopaedia dedicated to internet technology *Intenet.com*® [on-line] Available at: <http://www.webopedia.com>
- Webster's Revised Unabridged Dictionary, © 1996, 1998 MICRA, Inc.
- WebTrends (2003) *Black and Decker nails a 40% increase in visitor registration.* [on-line] WebTrends.com. Available at: http://download.netiq.com/CMS/CASESTUDY/NetIQ_CS_BlackDecker.pdf [Accessed 24th May 2004]
- WebTrends (2003b). *Peterson get a A+ for search engine optimization.* [on-line] WebTrends.com. Available at: http://download.netiq.com/CMS/CASESTUDY/NetIQ_CS_Petersons.pdf [Accessed 24th May 2004]
- WebTrends (2003c). *Education Site Boosts Newsletter Visit Rate 100% While Reducing Cost 50%.* [on-line] WebTrends.com. Available at: http://download.netiq.com/CMS/CASESTUDY/NetIQ_CS_Customer%20Insights.pdf [Accessed 24th May 2004]
- WebTrends (2003d). *NetIQ Helps Johns Hopkins Bloomberg School of Public Health Deliver Automated Password Reset for 5,000 Users* [on-line] WebTrends.com. Available at: http://download.netiq.com/CMS/CASESTUDY/NetIQ_CS_VPM_JohnsHopkinsSPH.pdf [Accessed 24th May 2004]
- WebTrends (2003e). *H&R Block Increases Tax Service Conversion Rate 3% With WebTrends Reporting Service.* [on-line] WebTrends.com. Available at: http://download.netiq.com/CMS/CASESTUDY/NetIQ_CS_HRBlock_Final_new2.pdf [Accessed 24th May 2004]
- WebTrends (2003f). *Kalmbach Cuts 80% in Promotional Expenses While Increasing Site Traffic.* [on-line] WebTrends.com. Available at: http://download.netiq.com/CMS/CASESTUDY/NetIQ_CS_Kalmbach_final.pdf [Accessed 5th June 2004]
- WebTrends (2003g). *Fry designs a site and delivers \$1.2 Million sales growth* [on-line] WebTrends.com. Available at: http://download.netiq.com/CMS/CASESTUDY/NetIQ_CS_Fry.pdf [Accessed 5th June 2004]
- WebTrends (2003h). *WebTrends for Breakfast: Helps EuroVacations.com Travel to Online Success.* [on-line] WebTrends.com. Available at: http://download.netiq.com/CMS/CASESTUDY/NetIQ_CS_Eurovacations.pdf [Accessed 11th June 2004]
- WebTrends (2004a). *The US Holocaust Memorial Museum Extends Its Reach with WebTrends.* [on-line] WebTrends.com. Available at: http://download.netiq.com/CMS/CASESTUDY/NetIQ_CS_holocaust_museum_final.pdf [Accessed 24th May 2004]
- WebTrends (2004b). *Industry insights from Internet marketers: How companies are using Web sites, marketing and Web analytics.* [on-line] WebTrends.com. Available at: http://download.netiq.com/CMS/WHITEPAPER/Industry_Insiders_final.pdf [Accessed 14th July 2004]

9 APPENDICES

9.1 SURVEY PARTICIPANTS

Survey Participants	
Organisation	Website URL
Alf Mizzi and Sons (Marketing) Ltd.	www.kwiksave.com.mt
Archdiocese of Malta	www.maltachurch.org.mt
Atlas Insurance Ltd.	www.atlas.com.mt
B&D Blinds and Drapes Limited	www.blindsanddrapes.biz
Bank of Valletta plc.	www.bov.com
British American Insurance Co. (Malta) Ltd.	www.britishamerican.com.mt
Corinthia Group of Companies	www.corinthia.com
E. Calleja & Sons Limited	www.ecs.com.mt
Embassy Shopping Complex	www.embassycomplex.com.mt
Faculty of Education – University Of Malta	www.um.edu.mt
Farsons Group of Companies	www.farsons.com
Fortune Enterprises Ltd.	www.fortunemalta.com
Foundation for Medical Services	www.fms.com.mt
Galea Debono & Associates	www.galeadebono.info
Howard Johnson Diplomat Hotel	www.diplomat.com.mt
International Institute on Ageing	www.inia.org.mt
Island Hotels Group	www.islandhotels.com
KPMG Malta	www.kpmg.com.mt
National Commission Persons with Disability	www.knpd.org
Malta College of Family Doctors	www.mcfd.org.mt
Malta Freeport	www.freeport.com.mt
The Scout Association of Malta	www.maltascout.org.mt
Malta Standards Authority	www.msa.org.mt
Media Centre	www.mediacentre.org.mt
Med-Way Ltd.	www.medway.com.mt
Methode Malta	www.methode-eur.com
MGI Malta	www.mgimalta.com
MISCO	www.misco.com.mt
MITTS Limited	www.gov.mt
Mobisle Communications Ltd.	www.go.com.mt
My-Malta.com	www.my-malta.com
Nylon Knitting Ltd.	www.nylonknitting.com.mt
Paradise Diving	www.paradisediving.com
Philip Toledo Ltd.	www.ptl.com.mt
Portelli & Brincat Ltd.	www.portelliandbrincat.com.mt
Prism Consulting Ltd.	www.prism.ch

Roberta Tedesco Triccas	www.roberta.com.mt
Savio College	www.saviocollege.edu.mt
Sedqa Agency	www.sedqa.org.mt
Shireburn Co. Ltd.	www.shireburn.com
Switch Ltd.	www.switch.com.mt
The Times of Malta	www.timesofmalta.com
Tetc Ltd.	www.click.com.mt

Figure 9.1-1 Survey participants

9.2 THE SURVEY QUESTIONNAIRE

9.2.1 THE 1ST QUESTIONNAIRE

The questionnaire delivered by email in Microsoft ® Excel TM format, was viewed by the user as a continuous document, with a blue background.

CUSTOMER-CENTRIC WEB METRICS AND THE MALTESE SCENARIO

This document will evaluate the extent of on-line customer related website measurement techniques currently in use, in the local scenario.

Privacy policy: All information gathered shall not be divulged to third-parties and shall only be used as statistical data, together with other responses received.

*Are you a website manager administering and maintaining your website from Malta?
If not, I would appreciate if you would kindly forward this e-mail to the appropriate person in your organisation who could reply to this survey.
If 'yes' this survey is intended for you.*

Q1 Do you use any web traffic applications to track user activity on your website? Yes No

type here the application or service provider

Q2 Do you use any in-house web server log file analysis to track user activity on your website? Yes No

Q3 Do you use page tagging systems to track website activity? Yes No

Q4 Do you use ASP's (Application Service Providers) to track website activity? Yes No

type here the application or service provider

Q5 Do you measure online website traffic?

Yes => Mark any metric below

No => Go to next question

- Recent web traffic
- Hourly web traffic
- Daily web traffic
- Web session duration
- Web session page views
- Daily web traffic quality

Q6

Do you measure how traffic arrives to your website? Yes => Mark any metric below No => Go to next question

- Referring search engines
- Referrer path analysis
- Referring web pages
- Referring web sites
- Search words
- Search phrases
- Search engines & search phrases
- Search engine spiders and robots
- Competition effectiveness compared to your website

Q7

Do you measure where visitors come from? Yes => Mark any metric below No => Go to next question

- Host domains
- Countries
- Regions and cities
- Languages
- Time zones
- Hour of the day
- Search engines
- Organisations
- Referring IP's

Q8

Do you measure what users do on your website? Yes => Mark any metric below No => Go to next question

- Most popular search words effected within website
- Most popular links clicked
- Most popular pages viewed
- Most popular paths taken
- Most popular URLs on your website
- Entry pages
- Exit pages
- Page durations
- Page navigation
- Repeat users/return visitors
- Average user session duration
- Average number of page impressions per visit
- Conversion rate
- Abandonment (shopping cart abandonment)
- Visits per page

Q9	Do you measure your on-line advertising campaigns? <input type="radio"/> Yes => Mark any metric below <input type="radio"/> No => Go to next question <input type="checkbox"/> Revenue from search engines <input type="checkbox"/> Revenue from entry pages <input type="checkbox"/> Revenue from campaigns <input type="checkbox"/> Revenue from referrers <input type="checkbox"/> Revenue from search phrases <input type="checkbox"/> Revenue from search words <input type="checkbox"/> Revenue from email tracking <input type="checkbox"/> Campaign conversion rates <input type="checkbox"/> Campaign entry pages
Q10	Do you gather information of your on-line customers? <input type="radio"/> Yes => Mark any metric below <input type="radio"/> No => Go to next question <input type="checkbox"/> Basic personal information <input type="checkbox"/> Segmentation details <input type="checkbox"/> Lifestyle <input type="checkbox"/> Interests and preferences
Q11	Do you measure the technology users use? <input type="radio"/> Yes => Mark any metric below <input type="radio"/> No => Go to next question <input type="checkbox"/> Web browser settings <input type="checkbox"/> Web browsers <input type="checkbox"/> Screen resolution <input type="checkbox"/> Colour quality <input type="checkbox"/> Operating systems <input type="checkbox"/> Connection speed
Q12	Do you measure how well your site is performing technically? <input type="radio"/> Yes => Mark any metric below <input type="radio"/> No => Go to next question <input type="checkbox"/> Client errors <input type="checkbox"/> Server errors <input type="checkbox"/> Website response times <input type="checkbox"/> Server uptime and server availability <input type="checkbox"/> Bandwidth usage at busiest periods

Q13 Do you measure user visits?

Yes => Mark any metric below No => Go to next question

- Frequency of website visit**
- Web pages viewed per visit**
- Time spent on website per visit**
- Conversion rate per visit**
- Revenue received per visit**

Q14 Do you measure website paths?

Yes => Mark any metric below No => Go to next question

- Page time**
- Path analysis**
- Website entry pages from competitors**
- Website exit pages to competitors**
- Session based marketing Return on Investment analysis**

Q15 Do you measure website visits?

Yes => Mark any metric below No => Go to next question

- Conversion ratio per visitor**
- Revenue per visitor**
- New against repeat visitors**
- Banner ads reach per visitor**
- Banner ad frequency per visitor**

Q16 Do you measure complete browsing history by unique visitor analysis?

Yes => Mark any metric below No => Go to next question

- Lifetime marketing Return On Investment analysis**
- Registered visits against total visitors**
- Customer visits against total visitors**
- New against repeat conversion ratios**
- emails based on past browsing against past purchasing**

Q17 Do you track web traffic via any of the following tracking applications methods?

Yes => Mark any below No => Go to next question

Cookie-based

IP address-based

Weighted Cookie-based

Site Log-in

Other please specify

type here

Q18 Have you requested in the past 12 months any quotes for any web traffic application with unique visitor analysis possibilities? Yes No

type here the application or service provider considered

Q19 If you have received quotes for web traffic applications, did you consider them expensive? Yes No

Q20 Kindly provide your basic website statistics if available:

Average Monthly Hits	Data if any
Average Monthly Page Views	Data if any
Average Monthly Visits	Data if any
Average Monthly Visits by Unique Visitor	Data if any

Q21 Which of the following terms were you familiar with prior to this survey?

Web Analytics	<input type="checkbox"/>
Web metrics	<input type="checkbox"/>
E-Metrics	<input type="checkbox"/>
Website measurement	<input type="checkbox"/>

Q22 Have you ever undergone a professional website usability testing exercise performed by third-parties who were or are not your Web developers? Yes No

type here service provider

Kindly include domain name (URL) of your organisation

type here URL

Name of individual compiling this document and position held in organisation would be appreciated.

type here Name
type here Position Held

Tick one category that most closely describes your organisation's industry.

Retail	<input type="radio"/>	On-line retail	<input type="radio"/>
Wholesale	<input type="radio"/>	On-line community	<input type="radio"/>
Manufacturer	<input type="radio"/>	On-line shopping mall	<input type="radio"/>
Government organisation	<input type="radio"/>	On-line auctions	<input type="radio"/>
Non-profit organisation	<input type="radio"/>	On-line gaming	<input type="radio"/>
Tourism	<input type="radio"/>	Portal	<input type="radio"/>
Building and construction	<input type="radio"/>	IT industry	<input type="radio"/>
Banking and finance	<input type="radio"/>	Telecommunications	<input type="radio"/>
Education	<input type="radio"/>	Media	<input type="radio"/>
Service industry	<input type="radio"/>	Publishing	<input type="radio"/>
Other		<input type="text" value="specify here"/>	

In appreciation of the time taken to compile this document, on completion of my Executive M.B.A. (e-Business) degree, I would be pleased to forward you with a digital copy of my finalised dissertation. Kindly include preferred e-mail address in the box provided below.

While thanking you for your cooperation, I welcome you to submit any comments you would like to make. (If limited for space kindly send separate e-mail)

Type from here

.....

.....

.....

.....

..... to here

SENDING THIS DOCUMENT VIA E-MAIL:

Follow these instructions
Click "File" => "Send to" => "Mail Recipient"
and type rolan@vol.net.mt
in the "To" box of your e-mail service

9.2.2 THE FOLLOW-UP QUESTIONNAIRE

The follow-up questionnaire delivered by email in Microsoft ® Excel ™ format, was viewed by the user as a continuous document, with a blue background.

CUSTOMER-CENTRIC WEB METRICS AND THE MALTESE SCENARIO (follow-up)

This document will evaluate the extent of on-line customer related website measurement techniques currently in use, in the local scenario.

Privacy policy: All information gathered shall not be divulged to third-parties and shall only be used as statistical data, together with other responses received.

This e-mail is intended, only for those persons who have answered the first survey, who have confirmed that they have access to website traffic data. The scope of this short follow-up survey is to identify how traffic results influence website changes within your organisation.

Q23 What strategic changes have you recently (past 6 months) made to your website as a result of website traffic data collected from your applications?

(Please mark any number of boxes below.)

- Site traffic results do not influence changes in strategy
- Changed website content
- Altered website design
- Changed online Form layouts
- Increased web pages
- Reduced web pages
- Altered online promotion strategy or message
- Changed online product/service mix
- Undertook search engine online marketing campaigns
- Added or eliminated the use of-pop up ads
- Added site-login facilities
- Withheld critical information from user to increase user login
- Introduced email marketing analysis
- Introduced affiliate/partner online marketing analysis
- Changed icon size and position
- Introduced customer self-service concept
- Returning users recognised using unique user identification
- Website changes are not influenced by website traffic results
- Website is changed through experience not as a result of website traffic results
- Do not know how to match metric results to strategy changes
- Other - please specify - please enter text in this box or in a separate e-mail..... To here**

Q24 What is preventing your organisation from maximizing the value obtainable from the website measurement techniques collected from your systems?

- Nothing, we maximise the tracking systems potential
- Lack of specialised personnel
- Lack of personnel
- Lack of time
- Overload of information
- Lack of technical resources
- Lack of experience
- Internal budget limitations
- Resistance from website developers
- The lack of options available from the tracking system
- The complexity of the tracking system
- Top management resistance to change
- I don't know

Other - please specify - please enter text in this box or in a separate e-mail

Q25 Do you perform an 'in-depth' analysis on your web traffic results with the aim of improving your Return On Investment at least?

Once an hour	<input type="radio"/>	Once a day	<input type="radio"/>
Once a week	<input type="radio"/>	Once every two weeks	<input type="radio"/>
Once every month	<input type="radio"/>	Once every two months	<input type="radio"/>
Once every three months	<input type="radio"/>	Once every four months	<input type="radio"/>
Once every six months	<input type="radio"/>	Once every year	<input type="radio"/>
Never	<input type="radio"/>	No fixed rule	<input type="radio"/>

Type any comments from here

.....

.....

.....

.....

..... to here

SENDING THIS DOCUMENT VIA E-MAIL:

Follow these instructions

Click "File" => "Send to" => "Mail Recipient"

and type rolan@vol.net.mt

in the "To" box of your e-mail service

9.3 RESEARCHED VENDORS

Accrue	http://www.accrue.com
Analog	http://www.analog.cx
AWStats	http://awstats.sourceforge.net
BraveNet	http://www.bravenet.com
Clickstream	http://www.clickstream.com
Clicktracks	http://www.clicktracks.com
FunnelWeb	http://www.quest.com/funnel_web/analyzer/
Intellitracker	http://www.intellitracker.com
Livestats	http://www.deepmetrix.com/
Nedstat	http://www.nedstat.com
NetGenesis (CustomerCentric Solutions)	http://www.customercentricsolutions.com/
NetIQ (WebTrends)	http://www.netiq.com
RedEye	http://www.redeye.com
RedSheriff	http://www.redsheriff.com
Roicast	http://www.roicast.com
Sawmill	http://www.sawmill.net
Site Intelligence	http://www.site-intelligence.co.uk
Speedtrap	http://www.speed-trap.com
Touch Clarity	http://www.touchclarity.com
Urchin	http://www.urchin.com
Webabacus	http://www.webabacus.com
Webalizer	http://www.webalizer.com
WebSideStory (HitBox)	http://www.hitbox.com/
WebSTAT	http://www.webstat.com
Webtraffiq	http://www.webtraffiq.com
WhiteCross Systems	http://www.whitecross.com

10 ABBREVIATIONS

AOV	- Average Order Value
ASP	- Application service provider
B2B	- Business to Business
CEO	- Chief Executive Officer
CMS	- Content Management System
CRM	- Customer Relationship Management
FEMA	- Faculty of Economics, Management and Accountancy of the University of Malta
HTML	- Hypertext Mark-up Language
ICT	- Information Communication Technology
IP	- Internet Protocol
ISP	- Internet Service Provider
IT	- Information technology
NPV	- Net Present Value
OLAP	- On-line Analytical Processing
ROI	- Return On Investment
RFM	- Recency, Frequency, Monetary value
SMS	- Short Message Service
URL	- Uniform Resource Locator
UUID	- Unique User Identifier

11 GLOSSARY OF TERMS

Affiliate marketing

‘Systems used by organisations to drive Web traffic from chosen on-line partners to their website against payment.’

Application service provider

‘An ASP hosts the applications required to do the analytics and has the expertise on hand to do the analysis.’

Attrition

‘Drop out at the final stage of engagement is called attrition. This occurs when a customer has had successful engagement with the website, and has been in the convert stage at least once, but decides to go elsewhere for subsequent needs. Examples include the changing of a subscription for Internet access from one provider to another, or the buying of books or CDs from one online outlet, and then proceeding to buy these goods from another online retailer. Among the various types of dropout, attrition represents the greatest cost to your business.’ (www.hurolinan.com)

Browser

‘Web browsing software such as Microsoft™ Internet Explorer™ or Netscape Navigator.’ (www.webtraffiq.com)

Campaign conversion rates

‘An online campaign will deliver Web traffic to your campaign entry pages. When these visitors view your commerce pages to perform a commercial action, they are said to be campaign conversions. The number of conversions divided by the number of visits to the campaign page provides a measure called the campaign conversion rate. A high conversion rate indicates a successful online campaign.’ (www.webtraffiq.com)

Campaign entry page

‘A campaign entry page is a page on your website with a special name to indicate that traffic to the page originates from an online campaign.’ (www.webtraffiq.com)

Change

‘The change in a value compared with the previous period, which normally is the previous week, represented as a percentage.’ (www.webtraffiq.com)

Churn

‘Is the ratio of retention to attrition.’ (Sterne, 2002, p.285)

Click

‘A click on a link. A click is registered whenever a user navigates from one Web page to another inside a website.’ (www.webtraffiq.com)

Click-stream or Path analysis

‘A user’s click-stream is simply the stream of clicks that he or she has made navigating through a site. This stream of clicks represents a navigation path, so ‘click-stream analysis’ and ‘path analysis’ is synonymous. It is useful to see ‘where users are going’, particularly around key sections of the site such as the homepage, registration or purchase processes.’ (Friedlien, 2003, p. 286)

Click-through

‘The measurement of a user-initiated action of clicking on an ad element, causing a redirect to another Web location. Click-throughs are tracked and reported at the ad server, and generally include the use of a 302 redirect. The measurement is filtered for robotic activity.’ (IAB, 2002, p.17)

Colour quality

‘The quality of colour that may be displayed on the user's display monitor.’ (www.webtraffiq.com)

Commerce entry page

‘The first Web page seen by a visiting user who eventually navigated to your commerce pages. Commerce entry pages have special names to indicate which affiliated websites are delivering commerce Web traffic.’ (www.webtraffiq.com)

Commerce from campaigns

‘The navigation to a commerce page from one of your campaign entry pages. Commerce from campaigns is a way to measure your return on investment (ROI) from online campaigns such as paid listings at Google™ and Overture™.’ (www.webtraffiq.com)

Commerce search engine & phrase

‘A search engine and search phrase used by your customer to find your website.’ (www.webtraffiq.com)

Commerce referrer

‘A website with links to your website. A website commerce referral occurs when a user clicks a link to your site, then navigates to your commerce pages.’ (www.webtraffiq.com)

Commerce search phrase

‘A phrase that visitors type into search engines before becoming customers.’ (www.webtraffiq.com)

Commerce search word

‘A word that visitors type into search engines before becoming customers.’ (www.webtraffiq.com)

Commerce traffic log

‘Web traffic to your commerce pages. This is a list of host computers, referrers, search phrases and the commerce pages that were visited, ordered by the time of day.’ (www.webtraffiq.com)

Commercial email tracking

‘Email tracking includes establishing which users read them, click on the link to your commerce Web pages and convert to perform your predetermined tasks.’ (www.webtraffiq.com)

Conversions

‘A conversion occurs when a commerce page is viewed by a visitor who entered your site at a campaign page. A high conversion rate indicates a successful online campaign.’ (www.webtraffiq.com)

Conversion/Browse-to-buy/Browse-to-apply/Browse-to-register/Click throughs

‘These metrics are typically expressed as percentages, rates or ratios and give a measure of the number of people who are doing something that you want to track: buying, clicking on an advert, registering, enquiring or applying are typical examples. These ratios, when tracked over time, become useful benchmarks against which targets can be set such as to increase the browse-to-apply ratio from 2% to 4%.’ (Friedlien, 2003, p. 286)

Cookie

‘A cookie is a small file that is stored on the user's computer to enhance the Web experience and help track Web activity.’ (www.webtraffiq.com)

Country

‘The country where the user connects to the Internet.’

Daily Web traffic graph

‘A summary of Web activity on a website over a number of days. Details include the number of unique users, visits and page views per day.’ (www.webtraffiq.com)

Daily Web traffic quality

‘A graph showing the quality of Web traffic over a number of days. Details include the number of page views per unique user and page views per visit per day.’ (www.webtraffiq.com)

Downloads

‘The number of times particular files have been downloaded. You can set the types of file that you wish to monitor and see which downloads are most popular. By cross-referencing the number of visits to the download page with the number of actual downloads you can see how interested users are in the download.’ (Friedlien, 2003, p. 286)

Entry page

‘The first Web page seen by a visiting user. Entry pages usually indicate book marked pages and links in referring Web pages.’ (www.webtraffiq.com)

Exit page

‘The last Web page seen by a visiting user. Exit pages usually indicate the least interesting content in a website.’ (www.webtraffiq.com)

Hits

‘A request to the server for a file. Now not considered a particularly useful metric as one page can contain as many hits as you desire - cut one graphic into 100 files you get 100 hits instead of one. Not worth tracking and analysing to find out what people are doing on the site.’ (Friedlien, 2003, p. 286)

‘Nothing more than a tool to monitor the activity of the server application, a term which should no longer be used by business and marketing professionals.’ (Peterson, 2003, p. 57)

Host domains

‘The domain names of the host computers that connect your Web users to the Internet. Host domains are typically Internet Service Providers or large corporations.’ (www.webtraffiq.com)

Hour of the day

‘The number of page views and visits your website receives per hour of the day. The time zone of the website is used to calculate these figures.’ (www.webtraffiq.com)

Hourly Web traffic graph

‘A summary of Web activity on a website over a number of hours. Details include the number of visits and page views per hour.’ (www.webtraffiq.com)

Java

‘Most Web browsers may optionally view Java programs known as Applets. This capability may be enabled or disabled depending on the user's security preferences.’ (www.webtraffiq.com)

Language

‘The user's preferred language.’ (www.webtraffiq.com)

Link

‘A hyperlink from one Web page to another page or a download file.’ (www.webtraffiq.com)

Loyalty

‘Loyalty is a measure of the number of visits any visitor is likely to make over their lifetime as a visitor.’ (Peterson, 2003, p. 55)

New user

A user who has visited a website for the first time.
(www.webtraffiq.com)

Operating system

‘The computer operating system installed on the user's computer, such as Microsoft™ Windows™.’ (www.webtraffiq.com)

Organic search

‘Organic search also known as natural or pure search, is the act of being listed in the results of specific search phrases based on the search engine’s algorithmic calculation.’ (Marckini, c2003)

Page duration

‘The average duration (hours, minutes and seconds) that Web visitors spent reading your Web pages.’ (www.webtraffiq.com)

Page Impression / Page View

‘A request to the server for an HTML page. Be aware that frames, proxy servers and caching can distort the validity of page impression figures. Non-human traffic such as search engine spiders also needs to be filtered out for an accurate reading. Useful to gauge levels of site activity by time of the day and by section of the site. This gives an indication of relative popularity of each page or area of the site. If tracked over time this becomes particularly useful following a redesign as you can work out the impact on ‘normal’ levels of activity for particular sections. Accurate page impression figures are clearly very important to any site owner charging for advertising based on a CPM (cost per thousand page views) model.’ (Friedlien, 2003, p 286)

Page navigation

‘The number of times Web visitors clicked the links in your website.’
(www.webtraffiq.com)

Page view

‘A single viewing of a Web page.’ (www.webtraffiq.com)

Page views per visit

‘The number of page views a user makes when visiting your website.’
(www.webtraffiq.com)

Paid search

Paid search is the act of paying to be listed in the results of specific search phrases (or keywords). Several search engines and directories offer this service as paid advertising or sponsorships option.’
(Marckini, c2003)

Paths

‘An analysis of the paths that visitors take through your website, showing a detailed breakdown of Web traffic paths from each of your entry pages.’ (www.webtraffiq.com)

Recent Web traffic

‘This is a list of host computers, referrers, search phrases and the Web pages that were visited, ordered by the time of day.’
(www.webtraffiq.com)

Referrer path analysis

‘An analysis of the paths that visitors take through your website, showing a detailed breakdown of Web traffic paths from your referring websites.’ (www.webtraffiq.com)

Referring search engine

‘A search engine with links to your website. A search engine referral occurs when a user clicks a link to your site. Read our search engine guide for more information.’ (www.webtraffiq.com)

Referring Web page

‘A Web page with links to your website. A Web page referral occurs when a user clicks a link to your site.’ (www.webtraffiq.com)

Referring website

‘A website with links to your website. A website referral occurs when a user clicks a link to your site.’ (www.webtraffiq.com)

Referring IPs / URLs / Top Referring Domains

‘Details of the IP address, URL or domain that users came from to arrive at your site. The referring site’s IP address is passed in the HTTP header as a user arrives at your site. This IP address can then be looked up to find out the domain associated with it. This is useful to see where the majority of your traffic is coming from. If you are controlling the link that the users click on (for example a banner or text advert) you can track even more precisely where users have come from by sending them to a special tracking URL on your site which logs details of inbound traffic then immediately redirects to the page the user is expecting.’ (Friedlien, 2003, p. 286)

Regions and cities

‘The regions and cities where your Web visitors live.’ (www.webtraffiq.com)

Return on investment

‘ROI measures how effectively the firm uses its capital to generate profit’ (www.investorwords.com, 2004).

‘ROI (return on investment) is one of the most common ways to measure the economic benefit derived from an investment in a marketing program or initiative. The simple formula for ROI is:

$$\frac{(\text{Total Incremental Profit} - \text{Total Investment})}{\text{Total Investment}}$$

Total Investment

The result is expressed as a percentage. The ROI for an initiative is then compared to a "hurdle" rate set by finance to determine if the project is expected to generate a better return than the company could get by investing its money. In more complicated scenarios, the ROI is determined by measuring the [net present value (NPV)] of the expected profit over time. In some instances, the ROI is adjusted by the degree of risk associated with the project.” (www.marketingnpv.com, 2004)

Returning user

‘A user who has visited a website before. For example a daily returning user is a user who visited on a previous day, and a weekly returning user is a user who visited on a previous week.’ (www.webtraffiq.com)

Screen resolution

‘The width and height in pixels of the user's computer display screen.’ (www.webtraffiq.com)

Script

‘Most Web browsers may optionally run small programs known as Scripts. This capability may be enabled or disabled depending on the user's security preferences.’ (www.webtraffiq.com)

Search engine & search phrases

‘A search engine and search phrase used by a Web visitor to find your website. Read our search engine guide for more information.’ (www.webtraffiq.com)

Search engine spiders

‘Search engine spiders are automatic programs used by search engines to read your Web pages, for cataloguing of website pages to their search indexes.’ (www.webtraffiq.com)

Search phrase

‘A phrase typed into a search engine by a user to find your website.’
(www.webtraffiq.com)

Search word

‘A word typed into a search engine by a user to find your website. Read our search engine guide for more information.’ (www.webtraffiq.com)

Search engine marketing

‘Search engine marketing is the art and science of increasing a website’s visibility across the major search properties (both engines and directories) through a combination of paid search advertising and organic search engine optimisation methodologies on a targeted list of keywords and phrases relevant to your company, products or services.’
Marckini (c2003)

Spider and robot activity

‘A spider is a computer program that automatically fetches Web pages without human intervention. A robot is a computer program that automatically runs online without human intervention’. (ABC Interactive, 2002, p.17)

Time Zone

‘The user's time zone.’ (www.webtraffiq.com)

Unique user

‘An individual person in the world. Users may be distinguished by IP address or by cookie or by log-in.’ (www.webtraffiq.com)

Unique Visitors

‘Users distinguished by IP address or by cookie. Dynamic IP addressing used by ISPs can give you a falsely high number of users. Proxy servers on the other hand cause the number of unique users to appear lower than the real value. Non-human traffic will also account for some unique users. Despite the inaccuracies, this is the best indication (other than users actually logging in to the site) of how many different people you have using your site.’ (Friedlien, 2003, p. 286)

Visit / Session

‘A session spent on the site with no breaks in activity of longer than 30 minutes (usually). This will be defined by the session timeout that you set on the Web server. This is usually set to a default of 30 minutes but you could positively skew results by shortening this period. Where machines are shared, or due to a proxy server, it can be hard to tell where one user leaves off and another takes over. Different sites would expect different average session lengths. The number of sessions, or visits, should be at least as high, and invariably higher, than the number of unique users. If your number of sessions is significantly higher than your number of unique users this would indicate lots of repeat visits from the same users.’ (Friedlien, 2003, p. 286)

Visit duration

‘The duration in minutes of the visits to a website.’
(www.webtraffiq.com)

Visits

‘A visit is a period of time when a Web user browses a website. It is customary that each page view must be made within 30 minutes of the previous page view, otherwise it is considered that a new visit is started.’ (www.webtraffiq.com)

Visits per page

‘The number of visits that visited your Web pages. During a visit, a user may view your page more than once so the number of page views is likely to be higher than then number of visits per page.’
(www.webtraffiq.com)

Web browser settings

‘Web browsers such as Internet Explorer and Netscape Navigator may be setup to enable or disable various features. These settings include cookies, Java and script. For example, some Web users disable cookies and script to better protect their online privacy.’ (www.webtraffiq.com)

Website interest

‘This is an indication of how interesting your website content is for your Web visitors. It is customary to measure the proportion of visits to your site that lasted longer than one minute.’ (www.webtraffiq.com)

Website slipperiness

‘Is the opposite of stickiness’ (Peterson, 2004, p.139) *see definition - website stickiness*

Website stickiness

‘This is an indication of how compelling your website content is for your Web visitors. With reference to single pages it is the ability to keep a visitor engaged, keeping the necessary attention, drawing them deeper into the website’. (Peterson, 2004, p.138-139)

Web traffic log

‘A log of all the Web traffic in a day. This is a list of host computers, referrers, search phrases and the Web pages that were visited, ordered by the time of day.’ (www.webtraffiq.com)

Web traffic summary

‘A collection of statistics about a website, which provide an executive summary of its Web traffic.’ (www.webtraffiq.com)

Yield

‘The annual rate of return on an investment, expressed as a percentage’ (www.investorwords.com, 2004).

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ABC Interactive	www.abcinteractiveaudits.com
AddFreeStats	www.addfreestats.com
Adidas	www.adidas.com
Amazon	www.amazon.com
Association of American Medical Colleges	www.aamc.org
Analog	www.analog.cx/
AWStats	http://awstats.sourceforge.net
Barnes & Noble	www.barnesandnoble.com
Black & Decker	www.blackanddecker.com
BraveNet	www.bravenet.com
Channel 4 Interactive	www.channel4.co.uk
Draftworldwide Inc.	www.draftworldwide.com
EasyJet	www.easyjet.com
E-consultancy	www.e-consultancy.com
EMarketer	www.emarketer.com
EuroVacations	www.eurovacations.com
Family Education Network	http://fen.com
First Direct	www.firstdirect.com
Flexible Mortgage Solutions	www.flexible-mortgage-solutions.co.uk
FordDirect.com	http://www1.forddirect.fordvehicles.com
Foundation for Information Technology Accessibility (Malta)	www.knpd.org/mittsfita/
Fry Consultants Inc.	www.fryconsultants.com
How to Internet Your Business	www.howtointernet.com
HitsLink	www.hitslink.com
H&R Block Inc.	www.hrblock.com
Johns Hopkins Bloomberg School of Public Health	www.jhsph.edu
Kalmbach Publishing Co.	www.kalmbach.com
Kefta Inc.	www.kefta.com
Logan Tod & Co.	www.logantod.com

Magicalia	www.magicalia.com
Net Imperative	www.netimperative.com
Netpoll	www.netpoll.net
NIC (Malta)	www.nic.org.mt
NOP Research Group	www.nop.co.uk
O'Hagan, Smith & Amundsen	www.osalaw.com
Peterson's Education Portal	www.petersons.com
RAD Data Communications	www.raddata.co.uk
SmarterTools Inc.	www.smarterstats.com
StatCounter	www.statcounter.com
Target Marketing of Santa Barbara	www.tarketing.com
Tesco Personal Finance	www.tescofinance.com
The Hacker Group	www.hackergroup.com
The United States Holocaust Memorial Museum	www.ushmm.org
The Usability Company	www.theusabilitycompany.com
Timex Corp.	www.timex.com
U.S. Department of Labor	www.bls.gov
Web Analytics Demystified	www.webanalyticsdemystified.com
Webalizer	www.mrunix.net/webalizer
Webopedia	www.internet.com
WebSTAT	www.webstat.com
WebTrends	www.netiq.com/webtrends/default.asp
William Hill plc.	www.willhill.com
Xemion Web Design	www.xemion.com
Ybos Corporation	www.ybos.net

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