



RHODES UNIVERSITY
INVESTEC BUSINESS SCHOOL
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*An evaluation of “on-line” banking Web sites
in South Africa
to determine Essential Design Criteria*

Research Dissertation

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**AN EVALUATION OF
"ON-LINE" BANKING WEB SITES
IN SOUTH AFRICA
TO DETERMINE ESSENTIAL DESIGN CRITERIA**

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Abstract

The use of the Web to carry out business on the Internet has become a viable option in all business sectors, and Internet banking in South Africa is no exception.

The nature of business on the Internet in South Africa and the World is investigated. The extent of Internet banking in South Africa is ascertained and the expectations and perceived problems of online bankers are discussed. The importance of Human Computer Interface and Web Interface Design for successful business is promoted with a discussion of their guidelines and principles. Web Evaluation techniques and Tools are assessed and The "Gartner" Web evaluation tool is selected to evaluate the three bank Web sites. The results of the evaluation indicate that there are several generally well implemented design criteria used by all of the banks while some criteria are not implemented at all. Each bank is discussed individually to identify strong and weak features of their Web site design. Essential aspects of Web design have been proposed for inclusion during the design of "online" Banking Web sites

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Definition of Terms

The terms used in this dissertation are defined below:

E-Business or E-Commerce is the term used for a broad spectrum of business activities on the Internet including buying and selling products and services, customer service and support, business partner collaboration, and enhancing internal productivity.

Frames are sections of a Web browser where the display area can contain different Web Pages.

HTML (Hypertext Markup Language) is the language used to create documents on the World Wide Web. It is a structured language that allows the designer to identify common sections of a document such as headings, paragraphs, and lists.

Hyperlink (or Link) is text or a picture that is associated with the location (path and filename) of another document or documents called Web pages.

The *Internet* is a public worldwide network of networks, connecting many small private networks. (Computers on the Internet use a common set of rules for communication.)

Internet Hyperlink is a connection between two Web pages at the same Web site.

Link (See Hyperlink)

Meta Tags are small segments of HTML code that are not visible on a Web page but are read by search engines.

Navigation bar is a series of icon or text internal hyperlinks to major pages at the Web site.

Navigational outline is a hierarchical outline showing all the levels of links between the home page or another major page and the page currently being viewed.

A *Network* is a group of two or more computers linked by cable or telephone lines.

Search engine is a Web search tool whose index is created automatically by software programs, called spiders, which browse the Web looking for new pages.

Servers are the group of linked computers includes special computers called servers that provide access to shared resources such as files, programs and printers.

Site Map is a Web page that shows each page at a Web site and how all the pages are linked together.

Splash page is a Web page that usually contains big, flashy graphics, and perhaps sounds used to create a showy entrance to a Web site.

Sticky Web sites are Web sites whose content keeps viewers coming back again and again.

Thumbnail is a small version of a larger image used on a Web page to speed up download times.

Ubiquitous means ever-present, omnipresent, universal or all pervading. (Ubiquitous Computing means that technology is embedded in the environment. Ubiquitous design means that the interface is embedded in the environment.)

Universal Resource Locator (URL) is a unique address of a file location on the World Wide Web that is typed into the browser to access a Web site. A Complete URL includes the protocol the browser uses, the server or domain name, the path, and the filename.

Example of a URL is: <http://www.ru.ac.za/research/evaluation/evaltools.htm>

Where *http* is the protocol, *www.ru.ac.za* is the domain name, and the rest of the URL is the path which shows that the destination file *evaltools.htm*, resides in the *research/evaluation* folder.

A *Web Browser* is a software application used to access and view Web Pages stored on a Web server. (Examples: Microsoft Internet Explorer and Netscape Navigator)

Web Pages are documents that can contain text, graphics, video, and audio as well as hyperlinks.

Web Servers are computers that store Web pages.

A *Web site* is a collection of related Web pages.

The “*World Wide Web*” (*WWW*) which is also simply called the *Web* is a subset of the Internet, where computers called Web Servers store documents called Web Pages that are linked together by hypertext links, called hyperlinks.

Chapter 1

Introduction

Abstract

This chapter introduces the topic of research by introducing the topics of Business on the Internet, Web site Design for e-Business, Internet banking and Web site Evaluation. The statement of the problem and sub-problems are specified. The scope of the research and the thesis organisation are determined.

1.1 Introduction

The Internet, which originated in the 1960's, has led to a change in the traditional view of carrying out business in many, if not all, of the business sectors. According to Napier, Judd, Rivers & Wagner (2001: 3), more businesses are using the Internet to conduct their business activities and millions of people use the Internet to shop for products and services, conduct research, get stock quotes, keep up to date with current events, and send email. Computers are used to interface with the Internet and it is crucial for the interaction to be simple and clear. Web sites have become the front of shop for Internet business activities, and design of usable Web sites is essential for a business to succeed.

The concepts and requirements for running a business on the Internet are introduced and the notion of the need for Web site design for e-Business is argued. An introduction to Internet banking follows as well as a discussion concerning Web site evaluation. The problem and sub-problems of the research are stated. Finally, the particulars of the scope of the research and the thesis organisation is presented.

1.2 Business on the Internet

Napier et al (2001: 5) defines E-Business or E-Commerce as "business conducted on the Internet using the Web". Although Napier et al (2001: 5) claim that it is difficult to determine how many individuals are online and which Internet services they are using, the NUA Internet Surveys

(2003) state that this type of business (E-Business) on the Internet is expanding rapidly. The NUA Internet Surveys (2003) advocate that during the five years from 1997 to 2002, the total number of Internet users in the world grew from 57 million to 605 million. Of these, more than 30 percent resided in Canada and the USA, only 1 percent in Africa and approximately half of those in South Africa. In USA, the number of people online in April 2002 was estimated at 59 percent of the total USA population while only 7 percent of the total South African population are said to be on-line. NUA Internet Surveys (2003) advocate that this represents an overall growth rate in the world of over 1000 percent while during the same five years in South Africa, the growth rate was less than 450 percent.

In order to understand how e-Business is conducted on the Internet, it is important to understand the difference between the Internet and the World Wide Web.

Napier et al. (2001: 4) defines the Internet as “a public worldwide network of networks, connecting many small private networks.” Computers on the Internet use a common set of rules, for communication, which are in the programs or software inside of the computers used for this purpose. Napier et al, (2001: 5), state that “The “World Wide Web” (WWW), also simply called the Web is a subset of the Internet, where computers called Web Servers store documents called Web Pages that are linked together by hypertext links, called hyperlinks.” A related set of Web pages which make up a Web site can contain text, graphics, video, and audio as well as hyperlinks. The combination of this text, graphics etc which is the design of a Web page is crucial for the success of a business wishing to carry out business on the Web.

1.3 Web site Design for e-Business

Business on the Web is normally carried out interactively using a personal computer which is connected to the World Wide Web. According to Newman & Lamming (1995: 6) the most crucial aspect of a system which interacts with people is its support for human tasks and activity. The interaction with an interactive system is via an interface. A usable “interface” that is convenient and understandable to the user is central to the success of E-Business. Web site design and the design of Web pages has therefore become an important aspect of E-Business. Web design is closely linked to the field of Human-Computer Interaction (HCI) in which the focus centers on the design of appropriate and usable interfaces for the users of computerised systems.

The study of HCI now includes that of interfaces for mobile computing and the Internet and has facilitated the design of usable interfaces for online business on “the Web”. Rapid growth in Web usage has been matched by growth of information added to the Web, which in turn has created an important role for ‘style guidelines’ on the preparation of hypertext documents that define the look and feel of Web sites in general, and Web pages or documents in particular.

Preece, Rogers and Sharp (2002: 273), insist that the design of a Web site does play a role in attracting or deterring potential and current clients from using a Web service. They (Preece et al, 2003) contend that one of the problems for users of large Web sites is that of navigating around the site. The phrase “lost in cyberspace” is often in the mind of users of the World Wide Web. Nielsen (2000) and others have provided guidelines, which are intended to encourage good navigation design. Napier et al. (2001: 240), believe that navigation elements are important because a viewer may not always enter a Web site from its home page. Navigation can be achieved by using internal hyperlinks with logical navigation schemes, navigation bars, navigational outline or a site map.

Accessing of many of the Web sites is also a problem for people with slow Internet connections together with limited processing power, and Nielsen (2000) has suggested that by avoiding complex URL’s and lots of pages with graphics will help to alleviate that problem.

Primus Knowledge Solutions (2002) white paper believe that because the Web has become a crucial channel for interacting with customers and prospective customers, the customer experience on the Web needs to be improved by better interface design. This endorses the fact that good Web site design is essential for good business. Primus Knowledge Solutions (2002) states further that: “The Web site visitors simply don’t get what they want: sites are overly complex and difficult to navigate; users often can’t find even the most basic information they’re looking for; and no one seems to be paying attention to them unless they go to the contact center.” This confirms the need for simpler Web sites, and better navigation elements. Primus (2002) continues with a promise that the Web will be more usable in the future because of the added customer focus on Web site design, together with continual advances in technology.

According to Preece et al, (2002: 273), a Web page needs to exhibit a good interaction design, which has some specific requirements. The key design issues for Web sites that are different from other interaction designs are captured by three questions proposed by Keith Instone (quoted by

Veen, J. 2001): “Where am I? What is here? Where can I go?” Preece et al (2002) suggests that each Web page should be designed with these three questions in mind, and the answers must be clear to the users.

According to Laudon & Laudon (2004: 116), the internet can help companies create and capture profit by adding extra value to existing products and services or by providing the foundation for new products and services. The advent of the internet and the popularity of personal computers, presents both an opportunity and a challenge for the banking industry. Banking is just one of the many business sectors which have been impacted by the Internet. The way in which customers interact with the bank in order to carry out “online” banking transactions via the internet is of paramount importance for this type of business to succeed.

1.4 Internet Banking

Turban, King, Lee, Warkentin & Chung (2002), state that: “Electronic Banking, also known as cyber banking, e-banking, virtual banking, home banking, and “online banking”, includes various banking activities conducted from home, business, or on the road, instead of at a physical bank location”. This definition of Internet Banking includes the terminology that is used to describe banking carried out on the Web. Turban et al (2002) states that electronic banking encompasses many features and can range from paying of bills to securing a loan electronically. Today many traditional banks around the world offer these diversified e-banking services. They also claim that electronic banking saves time and money for users while enabling banks to offer an inexpensive alternative to branch banking.

ABSA (ABSA, e-Business HANDBOOK, 2003: 85), states that ‘internet banking’ or ‘online banking’ has become a way of life for those in the banked market who earn well”. Banks in South Africa have adopted and implemented new technologies with different degrees of success. However, it is claimed that there are still relatively few people using internet banking. “The number of retail users of internet banking is in the region of one million. This is a small portion of the total banked population of about 11 million.” (ABSA - The e-Business HANDBOOK, 2003: 85)

ABSA (e-Business HANDBOOK, 2003: 86) states that there is a great deal of pressure on Banks to supply financial services to low-income markets and technology might be the key to reducing the cost of reaching a wider market

St. Yves & Lewis (St. Yves, DA & Lewis, S, 2000) advocate that there are few banks that have not been approached by service bureaus, Web design firms, or other vendors to implement advanced electronic products. Internet banking will be most profitable for banks that have an integrated plan for Information Systems development within their institutions. St. Yves et al (2000) believe that internet banking products are evolutionary in nature and typically can be categorized in terms of increasing levels of complexity:

- Low complexity offering Information Products
- Medium Complexity offering communication products (limited two-way information flow)
- High complexity: transaction products (account transfers, bill paying, and other transactions that modify customer accounts).

According to van Dyk (van Dyk, Tobie, 2000) ABSA was the first in South Africa, to offer Internet-based online banking services, in December 1996. In the period January to May 1997, Nedbank, First National Bank (FNB) and lastly Standard Bank established their banking services. Therefore with potentially more customers participating in “online banking”, it is critical that the interface is easy to use.

1.5 Web site Evaluation

Evaluation of interface design on the Web is an integral part of the field of HCI. Preece et al. (2002: 317) state that without evaluation, designers cannot be sure that their software is usable and is what the users want.

A repeated study of fifteen different Web sites in the USA carried out by Nielsen, (Nielsen, J, 2002), indicates that the average e-commerce site complies with only 49% of the established usability guidelines. Eighteen months earlier this figure was 4% lower, which makes Nielsen, (2002) believe that it will take more than 15 years to “fix the Internet” or for the Web sites to

comply with the published guidelines. Nielsen (2002) believes that Web site designers should avoid wasting money on fancy design and focus instead on simplicity and user needs.

There are many methods and techniques that can be used to carry out web evaluations and several web evaluation tools have been developed. Some of the tools, such as “WebQualTM”, (Loiacono, E T, 2000) and the “Gartner Web Evaluation Tool”, (Gartner Web Evaluation Tool, 2001), have been widely recognised within the Industry. Other Web Evaluation Tools such as Richard Waller’s “Web site Effectiveness Review” (Waller, R. 2002) and the “Software Evaluation Criteria (4)” (Virginia Community College), produced by Virginia Community College are less well known, but have some very relevant features and issues that that should be considered during the evaluation of a Web site.

1.6 Statement of the Problem & Sub-Problems

This research proposes to evaluate the “online” banking Web sites in a select group of banks in order to determine suitable criteria for the design of banking Web sites in South Africa.

1.6.1 The Sub-Problems

1.6.1.1 The First Sub-Problem

The first sub-problem proposes to analyse general human computer interface design principles.

1.6.1.2 The Second Sub-Problem

The second sub-problem proposes to analyse issues relating to user interface design for effective e-Business (on the Web).

1.6.1.3 The Third Sub-Problem

The third sub-problem proposes to identify HCI design guidelines and principles particular to Web site design for effective e-Business.

1.6.1.4 The Fourth Sub-Problem

The fourth sub-problem proposes to investigate the use of the internet for Online Banking and determine the consumer expectations of Banking Web sites.

1.6.1.5 The Fifth Sub-Problem

The fifth sub problem proposes to analyse the tools available to evaluate banking Web sites in South Africa to determine an appropriate evaluation tool.

1.6.1.6 The Sixth Sub-Problem

The sixth sub-problem proposes to evaluate a selected group of banking Web sites in South Africa in order to determine suitable criteria for the design of “online” banking in South Africa.

1.7 Scope of Research

The research will be limited to a heuristic evaluation of the Web site design of three of the major banks in South Africa, which offer internet “online” banking. The evaluation will be conducted by the researcher, using a Web evaluation tool, to be adapted from current evaluation tools available, specifically for this purpose.

1.8 Thesis Organisation

Chapter 1 introduces the topic of research and places the research into the context of Business on the internet, Web site Design for e-Business, Defining internet banking and Web site Evaluation. The problem and sub-problems are established and the delimitations of the scope of the research are detailed.

Chapter 2 includes the definitions and general concepts, principles and suggested guidelines for Human-Computer Interface. The issues that are common to computer systems which require Interaction with Humans are identified.

Chapter 3 discusses the general Web Design problems that face the users, and introduces other factors concerning Web Design that will be of significance during evaluation of Web sites.

Chapter 4 considers the concepts of building good Web pages and presents Principles and Guidelines that are specifically suited to Web site Design.

Chapter 5 argues the extent of the use of the internet for online banking and investigates the consumer expectations of online banking and the perceived problems and precautions of online banking. The features that are offered by banks in South Africa and in the USA are established and compared.

Chapter 6 defines the evaluation process and discusses aspects of testing Web sites. Several Evaluation Tools are assessed for their suitability in the evaluation of Banking Web site evaluation. A Web evaluation Tool is identified for the evaluation of the Bank Web sites.

Chapter 7 describes the process of evaluation and presents the results of the evaluations. A summary outline of all the criteria is presented for discussion, followed by the detailed results of the Overall and Industry Criteria.

Chapter 8 discusses further the finding of the results and discloses which criteria are responsible for Good and Poor design in general and specifically for each of the banks.

Chapter 9 offers a conclusion of this research.

Chapter 2

General Human-Computer Interface Design

Abstract

This chapter includes the definitions and general concepts regarding General Human-Computer Interface Design. The principles and guidelines suggested by various authors are discussed. This provides an indication of the issues that are common to interactive computer systems.

2.1 Introduction

Preece et al (Preece, Rogers & Sharp, 2002: 7) state that in the early days, hardware systems were designed by engineers for engineers and the computer interface was relatively straightforward for them to understand. The interface to these systems generally consisted of various switch panels and dials. With the introduction of Personal Computers in the late 1970's, the design of the interface to the computer became a challenge. The biggest challenge was to develop computers that would be accessible and usable by people, who were not engineers.

This chapter identifies the basic reasons for the need to improve the Human-Computer interface. Goals of Interaction Design and interface usability are outlined and general high level interface design principles are proposed. Usability principles, which mirror the design principles, are discussed.

2.2 Understanding the need for Human-Computer Interface

Many products that require user interaction in order to carry out their tasks have not necessarily been designed with the user in mind. When computers first became accessible to non-engineers, the users found that they were not easy to use. The need to improve the interface to the computer has been a topic of study and discussion since the early 1980's. In order to improve the interface, it is important to understand how a computer works, how the human thinks and reacts and also what tasks are required to be carried out by the system on the computer. Preece et al (2002: 7) have acknowledged therefore that many disciplines need to be involved for a successful interface to be produced. The importance and understanding of how users act and react to events and how

they communicate and interact together, have led to people from a variety of disciplines becoming involved. Preece et al (2002: 8) believe that psychologists, sociologists and practitioners such as graphic designers, artists, animators, photographers, film experts and product designers are all involved in the design of the user interface. Preece et al (2002: 8 - 10) believe that more ideas will be produced by bringing together so many people. New methods and more original designs will also be generated by the team. In order for the teams to work effectively is necessary for them to understand the goals of the design and to use common Guidelines and Principles while designing an interface for a computer system.

2.3 *Goals of Interaction Design /Usability*

General design and usability principles for the design of Human-Computer Interfaces are continually being proposed, revised and established. These principles have evolved as Computer Operating Systems have become more sophisticated. The introduction of a Graphical User Interface (GUI) has placed even more emphasis on the importance of “usability” than before. Many guidelines and principles have been formulated by Human Computer Interaction (HCI) specialists, which designers are encouraged to follow.

According to Preece et al. (2002: 13 – 14) Usability is the term used to ensure that an interactive product is easy to learn, effective to use, and enjoyable from the user’s perspective. Preece et al. (2002: 14) state that the assurance of “good” usability, would involve optimizing the interactions that people have with interactive products, which will enable them to carry out their activities. Preece et al. (2002: 14) break usability into the following goals:

- Effective to use or effectiveness, which refers to how good a system is at doing what it is supposed to do.
- Efficient to use or efficiency, which refers to the way systems support users in carrying out their tasks.
- Safe to use or safety, which involves protecting the user from dangerous conditions and undesirable situations.
- Have a good utility, which refers to the extent to which systems provide the correct functionality to enable users to do what they need or want to do.
- Easy to learn or Learnability, which refers to how easy a system is to learn to use.

- Easy to remember how to use or Memorability, which refers to how easy a system is to remember how to use, once learned.

2.4 Design Principles.

According to Preece et al (2002: 20), design principles are derived from a mix of theory-based knowledge, experience, and common sense. Preece et al (2002: 21), state that Design Principles “are written in a prescriptive manner suggesting to designers the do’s and don’t of interaction design”. They (Preece et al, 2002: 21) claim that when using an interactive product the better known design principles are concerned with how to determine what users should see and do when carrying out their tasks. The most common general design principles are the following:

- Visibility is important and is exemplified by two contrasting examples using either voice mail or the answering machine on a telephone system. Voice mail system makes the presence of waiting messages invisible, while the answer machine makes both aspects highly visible. The more visible functions are, the more likely users will know what to do next.
- Feedback is related to the concept of visibility and is about sending back information about an action that has been carried out and explaining what has been accomplished, which allows a person to continue with the activity. Types of feedback include audio, tactile, verbal and visual, and the various combinations of these. Providing feedback in the right way also provides visibility for user interaction.
- Constraints refers to determining ways of restricting the kind of user interface, which will prevent a user from selecting incorrect options thus reducing the chance of making a mistake. Norman (1999) classifies constraints into three categories: Physical, logical and cultural.
- Mapping refers to the relationship between controls and their effects in the world. Preece et al. (2002: 23) believe that nearly all artifacts need some kind of mapping between controls and effects, whether it is a flashlight, car, power plant, or a cockpit.
- Consistency refers to designing interfaces to include similar operations and use similar elements for achieving similar tasks.

- Affordance is a term invented by Norman (1988) used to refer to the attribute/s of an object that allows people to know how to use it. Norman (1999) gives an example of the term affordance “as a mouse button which invites pushing, by the way it is constrained in its plastic shell.” Other examples would be a chair that affords to be “sat upon” and a door handle that afford to be pulled or pushed to open a door. (Afford – “to give a clue”). Physical objects are said to have “real affordances” – like grasping, that are perceptually obvious and do not have to be learned. Screen based user interfaces are virtual and do not have real affordances and are known as “perceived affordances”.

Shneiderman (Shneiderman, B. 1998: 67 - 88) proposes three Design Principles followed by three Guidelines for producing good interactive design.

Shneiderman’s (1998: 67 - 79) Design Principles follow:

1. Principle 1: Recognise the Diversity

- Know the User

Successful designers know that other people learn, think, and solve problems in different ways. Some people prefer to deal with tables rather than graphs and some with words instead of numbers etc.

- Know the Tasks that need to be carried out

Task analysis is crucial for any system to be successful and thus essential for the design of interaction in computer systems.

- Understand the different Interaction Styles available

The designer must be aware of the different styles that are available and choose the styles that best suit the user and task profiles.

2. Principle 2: Use the Eight Golden Rules of Interface Design

1) Strive for consistency

- Consistent sequences of actions should be required in similar situations; identical terminology should be used in prompts, menus and help screens; and consistent colour, layout, capitalization and fonts should be employed throughout.

2) Enable frequent users to use shortcuts

-
- Abbreviations, special keys, hidden commands and macro facilities are appreciated by frequent knowledgeable users. Short response times and fast display rates are other attractions for frequent users.
- 3) Offer information feedback
 - For every user action there should be system feedback. Modest feedback should be provided for minor actions and more substantial feedback provided for infrequent major actions.
 - 4) Design dialogues to yield closure
 - Information feedback at the end of a sequence of actions gives users the satisfaction of accomplishment and a sense of relief.
 - 5) Offer error prevention and simple error handling
 - The system should be designed to prevent errors, however, if the users do make an error, the system should be able to detect the error and offer simple constructive, and specific instructions for recovery.
 - 6) Permit easy reversal of actions
 - Being able to reverse actions relieves anxiety, because the user knows that errors can be undone, allowing them to explore unfamiliar options.
 - 7) Support internal locus of control
 - Users like to know that they are in control and that the system responds to their actions. Users should be the initiators of actions rather than the responders to actions.
 - 8) Reduce short term memory load
 - Displays should be kept simple, multiple page displays should be consolidated, window-motion frequency reduced and sufficient training time be allotted for codes, mnemonics and sequences of actions
3. Principle 3: Prevent Errors from occurring
- Understand the nature of the errors that can occur
 - Organise the screen functionally
 - Offer feedback about the state of the system
 - Design for consistency of commands.

Shneiderman (1998: 79) believes that there is no clear distinction between basic principles and more formal guidelines. But he feels that good designers can distinguish between psychological principles and practical guidelines that are gained from experience with specific applications. A guidelines document can help to obtain consistency among designers and offers useful “rules of thumb” (Heuristics) to the designer.

Shneiderman’s (1998: 79 - 88) three design guidelines follow:

1. Guidelines for Data Display

- Organising the display would include guidelines promoting consistency of data display
- Efficient information assimilation by the user
- Minimal memory load on the user
- Compatibility of data display with data entry
- Flexibility of user control of data display

Getting the user’s attention is essential for exceptional conditions or time dependent information and can be achieved by:

- Using two levels of intensity with limited use of high intensity to draw attention
- Marking by underlining, enclosing in a box, pointing with an arrow or indicator
- Using up to four different font sizes with large fonts attracting more attention
- Using up to three different font types
- Using inverse video (colouring)
- Using blinking displays with great care and in very limited areas
- Using up to four standard colours with additional colours reserved for occasional use.
- Using changing in colour (blinking from one colour to another) with great care and in limited areas.
- Using soft audio tones for regular positive feedback and harsh sounds for rare emergency conditions.

2. Guidelines for Data Entry can save a lot of time if the system requires a lot of data entry. Five high level guidelines are offered:

- 1) Similar sequences of actions should be used to ensure consistency
 - 2) Fewer input actions should be designed by allowing the user to make choices by a single keystroke, mouse selection or finger press, rather than typing lengthy strings. And redundant data should be avoided by having to enter the same thing more than once.
 - 3) Users should not need to remember lengthy lists of codes and minimal memory load on users are advised.
 - 4) The format of data-entry information should be linked closely to the format of displayed information thus allowing compatibility of data entry with data display.
 - 5) Flexibility of sequence of data entry to allow user control.
3. Balance of Automation and Human Control
- With routine tasks, automation is preferred since the potential for error is reduced, but there will almost always be a critical human role for any system. It is important for the designer to find the correct balance.

Shneiderman's (1998) principles and guidelines can be used by designers for the development of any system that requires a Human-Computer Interface.

Macaulay's (Macaulay, L. 1995: 52) principles of good design include Naturalness, Consistency, Non-redundancy, Supportiveness and Flexibility. Macaulay (1995: 53) states that:

- A natural dialogue does not require the user to significantly alter his or her approach to the task in order to make it interactive.
- A consistent dialogue ensures that user expectations created from using one part of the system are not frustrated by silly little changes in the conventions used in another part.
- A non-redundant dialogue requires minimum information to be input in order for the system to operate.
- The supportiveness of a dialogue refers to the amount of assistance provided by the dialogue for the users.
- The flexibility of a dialogue refers to how well it can tolerate different levels of user familiarity and performance.

The guidelines and principles proposed by the authors above, Preece et al, Norman, Shneiderman and Macaulay seem to be aimed at very different levels and concepts. All of these are relevant, and should be considered during the design or evaluation of an interface. Preece's guidelines as proposed by Norman seem to pay a great deal of attention to the user, the interface and the responses of the user to the interface. They include high level concepts to follow:

- Visibility,
- Feedback,
- Constraints to prevent errors,
- Mapping, and
- Affordances,

Shneiderman's guidelines are also relatively broad and look specifically at three broad areas – including the user, interface and the prevention of errors when carrying out tasks. They include:

- The Recognition of diversity, (The user)
- Following the eight golden rules, (The interface)
 1. Consistency
 2. Enable Shortcuts
 3. Offer information feedback
 4. Design dialogues to yield closure
 5. Offer prevention and simple error handling
 6. Permit easy reversal of actions
 7. Support internal locus of control
 8. Reduce short term memory load
- Prevent errors from occurring, (The tasks)

Shneiderman also offers guidelines for display which once more consider the actual interface, the user and specific tasks of data entry (the tasks).

- Guidelines for display data,
- Getting users attention,
- Guidelines for data entry.

Macaulay's guidelines concentrate on the broader issues, and give one the feeling that advice is being offered at a more intuitive level. These include

-
- Naturalness,
 - Consistency,
 - Non-redundancy,
 - Supportiveness and
 - Flexibility.

2.4 Usability Principles

Usability principles are similar to design principles and more often than not the two overlap. The main usability principles developed by Nielsen (2001) and his colleagues are listed below:

- Visibility of System Status suggests that users should always be informed about what is happening with appropriate feedback.
- Match between system and the real world implies that the system should “speak the user’s language” using words, phrases and concepts familiar to the user.
- User control and freedom should provide ways of allowing users to easily escape from places they unexpectedly find themselves.
- Consistency and Standards should enable the users to avoid having to wonder whether different words, situations, or actions mean the same thing.
- Help users recognise, diagnose and recover from errors by using plain language to describe the nature of the problem and suggesting solutions.
- Methods of Error prevention should be included where possible.
- Recognise rather than recall by making objects actions and options visible.
- Flexibility and efficiency of use by providing accelerators that are invisible to novice users, but allow more experienced users to carry out tasks more quickly.
- Aesthetics and minimalist design can be achieved by avoiding using information that is irrelevant or rarely needed.
- Help and documentation should provide information that is easy to search and provides help in easy to follow steps.

2.6 Conclusion

Interaction design is multidisciplinary and involves input from wide-reaching disciplines and fields and is about designing products or systems that can support people in their everyday lives. Interactive products need to be designed to match the usability goals by using the guidelines and principles which have been developed by the experts and have evolved from user experience. Design and usability principles are useful heuristics that can be used for analyzing and evaluating whether a product will or does have a successful interface.

The design guidelines and principles and usability principles that have been discussed take into consideration the design from many aspects, including the user, the interaction and the tasks to be carried out.

Chapter 3

Web Design

Abstract

This chapter discusses general Web Design problems that the user is faced with, and discusses other factors concerning Web Design. The chapter concludes with a short discussion about Web Design.

3.1 Introduction

The internet, and more specifically, the Web has opened up many opportunities for businesses to change the way they in which they operate. However, a business cannot simply "transport" their goods and services onto the Web without an understanding of some of the complexities of the Web interface. Several authors have concentrated on examining issues that should be considered when the decision is made to carry out business on the internet. Basic Web design principles should be an integral part of the design, and the extra "business" aspects will differentiate one business from another. Web design methods generally mimic most of the General Human-Computer Interface Design principles and guidelines which have been produced. However, more specific aspects of Web design need to be considered. The "audience" for Web sites has increased and more types of users need to be taken into account.

According to Selvidge (Selvidge, 2003), the World Wide Web (WWW) has become an increasingly important medium for communication, commerce, and entertainment. Huang (Huang Albert H, 2003), states that Corporations use their Web sites in a variety of ways, to accomplish many different functions. Visitors to a Web site will form perceptions about the company and its products, based on what they see and on their experience on the Web site. Huang (2003) also states that some companies use the Web as a logistical tool, while other Web sites are used by customers as tools to obtain product-related information and some "before and after" sales service. With this in mind, Huang, (2003), states that Web sites have become largely responsible for their corporate image and must provide a highly usable visitor interface to satisfy a wide spectrum of information needs.

A good first impression of a Web site is therefore vital if a business wishes to carry out successful business on the Internet. Ray (2003) believes that First impressions do count, even in the online world and that a poorly developed Web site can drive customers away to its competitors. He believes that a Web site is no different from a first meeting with a person. If the Web is not pleasing to the eye then the business will lose customers.

3.2 *Perceived Problems with Web Interface Design*

3.2.1 *Design Decisions*

Berkun (1999a) believes that bad design is everywhere and that people tolerate bad design every day, even before they turn their computers on. He claims that talented hardworking people make bad interface design decisions all the time and concepts that are familiar to development teams are assumed to be familiar to everyone. As a result he advocates that designers should make an explicit effort to think about how design decisions are made, and to learn better techniques for making them. Berkun (1999a) states "The reason for this (bad design) is that designers find it difficult to understand how someone unlike themselves, think about the world. As interface designers, they need to think more carefully about what they are doing."

3.2.2 *Speed*

Taking too long to download pages is perceived by users as a major problem with the Internet. Selvidge (Selvidge P. 2003), reported a study of 12,000 online customers, which revealed that 48 percent of them gave up trying to purchase products because the Web pages took too long to download. Brynijolfsson & Smith (2000) endorse this fact by stating that trust is probably the most important factor in e-commerce and the effects of time delay can significantly reduce consumer trust towards an e-commerce retailer.

3.2.3 *The Customer*

Primus Knowledge Solutions (2002) states that often computer systems fall far short of achieving human intelligence and that Web sites fall short of treating people as people. Primus Knowledge

Solutions (2002) suggests that the Web has one major weakness: "the frequent frustration of customers." It is claimed by Primus Knowledge Solutions (2002) that often companies spend millions of dollars on advertising, but their Web sites fall short of seemingly simple goals like increasing customer satisfaction, simplifying interactions, and fulfilling user objectives.

3.2.4 *Content and Navigation in Design*

Taylor (Taylor, D. 1997) examines Web design from a more focused perspective of the actual content of the Web pages and he states that: "Although there are a lot of great pages on the Web there are also lots of broken ones that violate the most simple and straightforward interface guidelines and ideas." Taylor (1997) has generated what he believes to be a list of the four most common mistakes that are found on Web pages:

1. Stale information
2. Smart quotes
3. Links that die
4. Too much graphics

It can be noted therefore that it is not just the layout of Web pages that is of significance for good Web Design. Issues such as time delays, trust, navigation, content and customer satisfaction as well as design layout should be considered when planning to design a Web site.

Johnson and Griffith (Johnson, T M & Griffith, DA. 2002), believe that a common mistake in Web site design is to pay no attention to the content and navigation as part of the design. Johnson et al, (2002) continue to state that Web site design should include content, navigation, graphic design and functionality. Simply stated Web site design refers to the "look, feel and functionality of the site".

3.2.5 *Layout and Style*

Nielsen (Nielsen, J. 2003b), pursues the matter further, by not only considering bad content, but also looking at the actual layout and style of Web pages and the search facilities offered. Nielsen (2003b), states that as the Web grows, Web sites continue to display ways which annoy users. He has identified ten mistakes which he believes should be avoided when designing a Web site.

-
1. No Prices
 2. Inflexible Search Engines
 3. Horizontal Scrolling
 4. Fixed Font Size
 5. Blocks of Text with no subheads, bulleted lists, highlighted keywords, short paragraphs, or Inverted Pyramid.
 6. JavaScript in Links which don't behave as expected, undermine the users understanding of the site. Nielsen (2003b) believes that users deserve to control their own destiny. Computers systems that behave consistently empower people to use their own tools with accuracy.
 7. Infrequently asked questions which are in the in Frequently Asked Questions (FAQ)
 8. Collecting Email Addresses without a Privacy Policy.
 9. Universal Resource Locators (URL's) which are greater than 75 Characters.
 10. Mailto Links placed in unexpected locations – Mailto links should be used on anchors that explicitly indicate that they're email addresses. Clicking on people's names should usually lead to their biography.

3.3 *Other Web Design Issues*

3.3.1 *Navigation around Web sites*

Navigating around a Web page or a Web site is considered to be one of the most important issues to consider during the design of a Web site. Users generally get very frustrated if they do not have an easy way of getting from where they are to the home page or to other major pages at the site of the e-business.

Napier et al (Napier, Judd, Rivers & Wagner, 2001: 240), states that navigation can be achieved by using several methods which are briefly explained below:

- An internal hyperlink is a connection between two pages at the same Web site. Logical navigation schemes should be established which are easy for the viewers to connect to all the major pages from any page on the Web site. All pages should contain an internal hyperlink back to the home page.

-
- A navigation bar is a series of icon or text internal hyperlinks to major pages at a Web site. The icons are often positioned at the top of a Web page, while navigation bars using text are often positioned on the left hand side or at the bottom of a Web page.
 - A navigational outline displays to the viewers all the levels of links between the home page or another major page and page currently being viewed. These are great visual cues to the linking relationships among pages and should be used in addition to other navigational hyperlinks.
 - A site map is a Web page that shows each page at a Web site and how all the pages are linked together.

However, Huang's (Huang Albert H, 2003) research reveals that the most popular navigational support tool is the "search form", as opposed to "site maps". According the Huang (2003), "search forms" help users find pages that contain key words of phrases and "site maps" help users identify the relative location of a page in the hypertext architecture of the Web site. He believes that all Web sites should use both of these navigational tools, but his research revealed that about 80 percent of the Web sites used at least one of these tools, which implies that 20 percent of sites still offer no navigational support.

3.3.2. *Consumer Information Search*

Unless an e-business makes a special effort to let potential viewers know how to find its Web site, it is likely to have few visitors. One way to stand out is to make certain that all major search engines and directories have information about the e-business in their indexes.

It has been proposed by Katerattanakul (2002) that a Web site which is designed to support a consumer information search would facilitate consumer information-seeking gratification, as well as consumer surveillance gratification.

Katerattanakul (2002) believes that designing to support Consumer Information Search is mediated by ability, motivation, benefit and cost.

- Ability requires knowledge about the organisation of the Web site's content and the direction for navigating the Web site.

-
- Motivation to search for information is defined as the desire to expend effort in the collection and processing of information and is influenced by the consumer's involvement and need for cognition". Katerattanakul proposes that involvement and need for cognition can be increased by customisation of the information provided over the Web site, which is a valuable way to match the consumer's interest to the products and information.
 - Perceived benefits and costs of information search are also important determinants affecting the consumer information search process.

Katerattanakul (2002) elaborated on the following design guidelines to help with Information Search:

- Organisation of Site's Content
- Customisation of Site's Content
- Accurate Information
- Relevant Information
- Easy to Understand Presentation
- Navigational Efficiency

3.3.3 Consistency

Many of the guidelines and principles published include consistency as an important factor to consider when designing a Web site. Huang (2003) claims that of the corporate Web sites that do follow screen conventions, only 50% of these display consistent design throughout the site. One of Carter's (Carter, J., 2002: 362) guidelines, which states that design should conform to the user's expectations, vindicates that one of the ways of achieving this is to ensure that dialogs are consistent across similar tasks.

Berkun (1999c) agrees that one way to improve design on the Web is to establish consistency. He claims that consistency is wonderful when used appropriately because it improves the experience for both developers and their users. However, he warns that sometimes consistency can become self-perpetuating, and that by making everything look and work the same might be pointless if the user can no longer accomplish their tasks. He advocates that one should rank "making things useful" above "making them consistent".

Berkun (1999c) has established some guidelines (below) to help designers apply "consistency" more effectively.

- Begin by reusing existing controls or concepts in sketches and prototypes.
- If sketches and prototypes are not working in user tests or other evaluations because of the failure of existing concepts, try to grow an existing concept to cover the new situation.
- If you cannot extend what you have to solve a problem, then design a new widget or concept to solve the problem.
- If you have to use special cases, make sure that it is the best trade-off that you have.
- Always ensure that user success at tasks takes precedence over abstract design consistency.

3.3.4 Usability

Huang's (2003) discusses the importance of Usability and the effect on business if usability is not considered. His research indicates that the importance of system usability is simple and clear: "When systems are easy to use, more people use them, get more accomplished and report greater satisfaction." He further states that usability is essential to the success of all Web-based information systems, including corporate Web sites and he believes that today's Web-based applications must often compete for users' attention and usage. He feels that a corporate Web site with low usability may cause users to carry out alternative methods to contact the company which will add to the cost of the business. Huang further claims that developing a usable corporate Web site, is a challenging task because: "It is very time consuming as there are often an enormous number of pages on a typical corporate Web site and the frequent rate of change takes time, and makes rigorous usability testing impractical." Huang admits that usability is a specialised field which requires input from usability experts with knowledge of Internet technology, Web-protocols, hardware characteristics, networking standards, human behaviour, ergonomics, user cognitive styles, aesthetics and other fields. Web designers are often forced to sacrifice usability for the sake of functionality, because of inadequate design of the existing Web protocols and browsers implemented to perform the functions wanted by users. Huang also states that usability can be influenced by the hardware and software platforms employed by users to access the Internet and get information or transact business.

Nielsen (Nielsen, J. 2003a), however, believes that there are many misconceptions surrounding usability and that designers use these as an excuse to avoid carrying out usability testing. The misconceptions include the expense, time and negative creative impact of usability testing. These misconceptions are further discussed in Chapter 4 together with the Nielsen's Design Principles and Guidelines.

3.3.5 Brand Equity

Napier et al (2001: 200) claim that building a brand is more than just a URL and a logo and they believe that a brand involves all aspects of a customer's experience. Online, an effective brand leads to more than just awareness; it leads to action taken by a customer.

Johnson & Griffith (2002) believe that Web site design does not necessarily translate into comparable brand equity, which is built on consumer loyalty, brand awareness, perceived quality, brand associations, and other proprietary brand assets. They (Johnson & Griffith, 2002) believe that for established firms, a well-designed Web site helps to reinforce the firm's brand equity and can therefore help the process of building brand equity, while a poorly designed Web site can devalue its established brand equity and may not engage the consumer, causing them to move to another Web site without evaluating the site's content. Johnson et al (2002) understand too that brand equity is not equally important across product categories in industries and therefore firms should first assess brand importance in the markets where they compete and if brand equity is important then they should continue to determine the competitive brand intensity. In order to achieve this they believe that a company should examine the number of brands dominating the product category or industry. Johnson et al. (2002) state that, "To calculate current brand intensity, firms should assess current online and traditional market shares". "If the current competitive brand intensity of the product category is high, the next step", say Johnson et al. (2002) "is to establish its current brand position in the marketplace, and firms facing strong brand intensity may wish to reconsider their target market".

Napier et al (2001) suggest that building a brand involves a lot of work and an e-business has to know who their customers are, and understand their wants and needs.

3.3.6 Quality of Presentation and Usefulness

Katerattanakul (2002) suggests that quality of presentation and usefulness of content determines whether potential customers will be drawn to or driven away from the Web site, which would imply that quality information would seem to stand the best chance of consumer acceptance and overall success. He states that Deming (1986) posited that the consumer is the most important aspect to consider when determining the quality of the product, which should thus be aimed at the consumer's needs. In order to understand why consumers use the Web, Katerattanakul (2002) has identified the five dimensions of gratification sought by users. These dimensions are Entertainment, Consumer information-transaction, Social communication, Information-seeking, and Surveillance of the environment.

Detailed gratification items (Adapted from Katerattanakul R, 2002)	
Five dimensions of gratification sought	Detailed gratification descriptions
1. Entertainment	<ul style="list-style-type: none"> • To relax/ to have a good time • Because browsing is fun/enjoyable • For something to do/ to pass the time away
2. Consumer Information-Transaction	<ul style="list-style-type: none"> • To get specific information about products I'm thinking of buying • To purchase products • To get specific information for making decisions
3. Social Communication	<ul style="list-style-type: none"> • To meet new people / to be with others • To chat to friends / to talk to others
4. Information-Seeking	<ul style="list-style-type: none"> • To find specific information / to research topics I am interested in • As a source for general information • To get information to share with others • To learn how to do a thing
5. Surveillance	<ul style="list-style-type: none"> • To learn about what could happen • To get news

Katerattanakul (2002) developed a quality framework consisting of four major information quality categories:

1. Intrinsic information quality,
2. Contextual Information Quality,
3. Representational Information Quality and
4. Accessibility Information Quality.

When designing to support consumer transactions, Katerattanakul (2002) suggests that issues should be identified that affect or support customers when trying to conduct online transactions over the Web. These issues include trust and perceived risks which can be addressed by ensuring secure reliable systems by providing transaction processing and user authentication, perceived ease of use and good systems response time. Katerattanakul also equates the term "fitness for use" with "quality", which he believes emphasises the importance of the consumer's perception of the Web.

3.3.7 *Development Life Cycle*

All of the features that should be considered during the design of a Web site should be done within a structured development process. This will ensure that nothing of importance is omitted. Lifecycle models are not as prevalent in the field of HCI as they are in software engineering which is a great pity. The lifecycle models used in traditional systems development have a very strong user focus, and it would be wise for Web page designers to follow a recognised lifecycle model when designing and building Web pages. Mayhew (Mayhew, D.J. 1999) proposed a Usability Engineering Lifecycle model which provides a holistic view of usability engineering and gives a detailed description of how to perform the usability tasks. The lifecycle model proposed by Mayhew (1999) has three tasks: requirements analysis, design/testing/development and installation. The middle stage (design/testing/development) is perceived to be the largest and most important stage which involves the most subtasks. The Usability Engineering Lifecycle is shown in **Diagram 3.3.7**.

The Usability Engineering Lifecycle - Deborah Mayhew (1999)
Amended from (Preece, Rogers & Sharp, 2002 - Page 194)

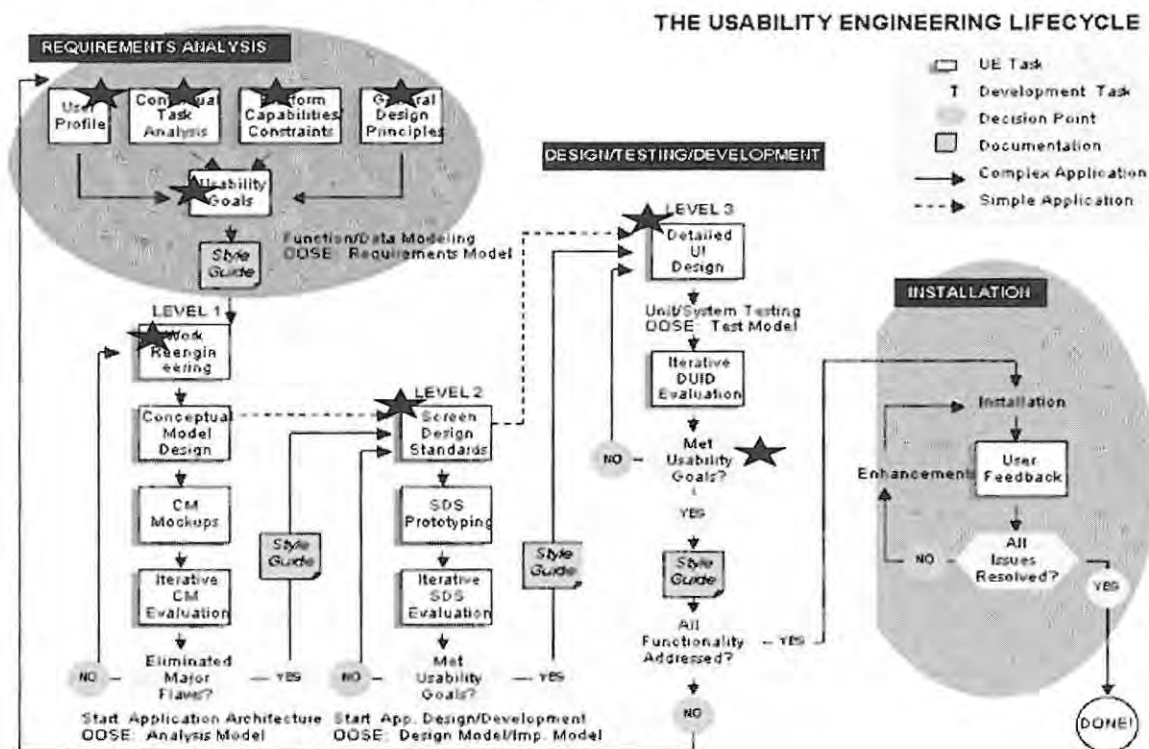


Diagram 3.3.7

(The Usability Engineering Lifecycle)

Berkun (Berkun S. 1999b) agrees and proposes that a basic development process which takes cognisance of usability should help good user interface make its way into products. Berkun (2002) believes that bad designs are often the result of too few attempts, not necessarily bad designers, and has proposed the following steps that can be taken when a business wants to establish a Web presence.

1. The problems should first be defined by understanding what the user needs to solve. This can be done by talking to the intended users of the product to discover who the real users are, what they do all day and what problems they have with existing products.
2. The identified problems need to be prioritised into a list of tasks to be solved by brainstorming and prototyping in an iterative manner.
3. Error messages and handling should be thought of as a required part of any feature, and proper engineering time for error support should be budgeted into any development estimates. It is important for the designer to see potential flaws in design and to build

objects with additional support with those flaws in mind. In order to incorporate good message handling into a system, Berkun (July, 2000) suggests that it is necessary to make errors uniquely identifiable so that support staff can determine precisely what has gone wrong. The designer must ensure that good errors are clear and have "Paths to Remedies" and that the users should not feel responsible for the error.

4. The designer must carry the tone of responsibility and describe the problem in consumer terms and language, give directions for how to complete the task or to resolve the problem and possible, explain how to prevent the situation next time. Obscure technical jargon, abbreviations, or acronyms must always be avoided. Berkun believes that "the best errors are never seen by users", and this can be achieved by automating parts of the user's interaction, and intelligently offering alternatives to common mistakes that users make.

3.4 Conclusion

This chapter identified aspects of Web design that annoy users and listed mistakes that should be avoided during the design of a Web site. Issues and factors which should be taken into consideration when building a Web site include Navigation, Consumer Information Search, Consistency, Usability, Brand Equity and Quality of presentation usefulness. All of this should take place within a structured development lifecycle. Deborah Mayhew's Usability Engineering Lifecycle was briefly illustrated. The main themes that emerge are that of understanding of the goals, objectives and overall purpose of the Web site. Understanding the nature of the target audience is also of key importance and the relevant importance of brand equity and usability of the Web site should not be overlooked. The site has to provide a highly usable visitor interface to satisfy a wide spectrum of information needs, which can be done by first understanding what the user needs to solve. It has been ascertained that error messages and handling should be a required part of any feature as nothing says more about what is thought about users than error messages. It is imperative to support consumer information search, consumer transactions and consumer enjoyment or gratification. The look, feel and functionality of the site ultimately determine whether it is a successful Web site or not.

Chapter 4

Web site Design, Principles & Guidelines

Abstract

Chapter 4 introduces the basic notion of building good Web pages and provides principles and guidelines that are specifically suited to Web site Design. The computer screen, delays on the internet are considered as well as other outside agents, such as browsers, that are included in the system architecture.

4.1 Introduction

A user with a favourable impression of a Web site is more likely to become a customer or a frequent visitor to that Web site. Web sites differ in many ways from conventional computer system interfaces, which has led to the need for specific principles and guidelines to be established, which caters for these differences. It is necessary for the designers to be aware of the features of Web sites that create a favourable impression with the user, making the Web site more usable. Principles and guidelines for the design of Web sites have emerged to help designers with this task. The concepts underlying the building of Web sites are discussed followed by an outline and discussion of the principles and guidelines, which are peculiar to Web site design, as proposed by some of the experts in the field of HCI.

4.2 Building Good Web pages

Sklar (Sklar, J, 2003: 28) states that when designing for a Web site, one must remember that the destination is a computer monitor and not the printed page. Web pages must therefore be designed specifically for the computer screen, and consideration must be taken into account of layout, fonts and colours and how these will appear onscreen. Sklar continues with the advice that designers should give users the options to follow the information path they want by providing appropriate links to related topics and making the users feel comfortable at the Web site by letting them know where they are and where they can go to.

According to Napier et al, (Napier, Judd, Rivers & Wagner, 2001: 234), “The first thing that an e-business entrepreneur should do, before any Web pages are created, is determine the goals, objectives and overall purpose of the e-business Web site”. Napier et al., (2001: 234) believe that without this, the site may not have the focus it needs to be successful. They state that in order to help determine the goals and objectives of a successful Web site, the following questions should be asked and answered:

Does the site;

- Allow customers to order products and services online?
- Provide technical support for products and services?
- Advertise products and services?
- Build the e-business’s image and brand?
- Collect information about current and potential customers?
- Provide links to related Web pages?
- Provide general or industry information?
- Recruit employees?

Napier et al (2001: 236) advocate that after establishing the goals, objectives and overall purpose of the Web site, the target audience of the Web should be considered. They believe that it is critical to consider both the information needed by the target audience and the tools the target audience uses to access the Web. Some proposed questions which could be asked to elicit the needs of Web users are listed below:

- Is the audience composed of experienced internet users, novice users, or a mix of both?
- What type of browser will the audience be using? (Some design techniques that are supported by later Web browsers versions, might not be supported by earlier versions.)
- At what speed does the audience connect to the Internet? (A Web site that is designed to be viewed successfully over a high speed dedicated connection may be problematical for viewers using a slow modem connection.
- At what screen resolution does the target audience view Web pages?

It is felt that the answers to these questions help designers determine how to design Web pages that can enhance the viewing experience of a visitor or user of a Web site, and ultimately the ability of the Web site to meet its goals.

Waller (Waller, R. 2002) believes there are five things to be considered when building a Web site:

1. Business Objectives - Why are you creating this website
2. Your current stage of Website Development - What experience does your company have in websites
3. Target Audience - Who is it that will buy your product
4. Critical Success Factors - How will you measure your success
5. Useful Information that you should provide - to satisfy the needs of your target audience

This concurs with what Sklar and Napier say, and emphasises the importance of taking the business objectives and the customer into account.

Waller (2000) also suggests that a Web site designer has two customers: the site owner who is paying the bill, and the visitors to the site. The site owner wants something professional, state of the art, exciting and attractive. The visitor just wants to see what they are looking for as fast as possible and would rather not have any of the “eye candy”.

It is therefore critical that the stakeholders are identified at an early stage of the development lifecycle, in order to ensure that the design is targeted towards the correct audience.

Arthur Andersen (May 2001) reported on a survey conducted by Knowledge Systems & Research Inc. during March and April, 2001. The survey was based on responses from 990 online users and indicated that the following aspects of a Web site makes a person want to return to the site:

- Ease of use/navigation 74%
- Fast Download Time – 65%
- Regularly updated Information 58%
- Quality of content 57%
- Organisation of content 40%
- Access to customer service 40%

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- Quantity of content 30%
 - Search Tool on Site 25%
 - Homepage layout 20%
 - Fun 19%
 - Look and feel of site 18%
 - Inclusion of animated graphics 9%

In contrast, the UK Internet Magazine <http://www.internet-magazine.com> (2002) carried out a survey of more experienced and mature users and discovered the top ten irritations which made users **not** want to return to the Web site:

- Slow loading Web sites 87%
- Help buttons that can't help 83%
- Requests for personal details before being allowed to progress into the site 82%
- Irrelevant search results 79%
- Poorly organized content 78%
- No search facility 75%
- Scrolling down through lots of pages to get to the info 74%
- Adverts 70%
- Pop-up boxes 70%
- Cluttered Design 63%

4.3 General Web Design Principles

Carter (2002: 361) proposes general design principles for Web design, based on the *Dialogue Principles of ISO 9241-10*. These principles apply to most e-Commerce systems.

1. The design should be suitable for the tasks being performed.
 - a. *It should contain only those elements related to performing user's tasks.*
 - b. *Where a request is not available for current use, it should either be removed from the screen or grayed out.*
2. The design should be self descriptive.

-
- a. *The user should not need to refer to any external documentation in order to use the system.*
 - b. *Feedback should be provided to acknowledge user requests which can be accomplished by making requested changes in data that is displayed or where displayed data is not involved, specifically acknowledging that the request has been successfully completed.*
 - c. *Feedback should be provided to explain the occurrence of errors and to suggest possible actions to avoid the errors.*
3. The design should allow the user to control the processing.
 - a. *The user should be able to select the request needed to perform the currently desired task.*
 - b. *The user should be able to interrupt the dialog at any time and return to the start of the dialog.*
 - c. *The user should be able to stop using the system at any time. The system should not unnecessarily limit the amount of time a user has to take actions.*
4. The design should conform to the user's expectations.
 - a. *The type of input and output involved should be clear to the user.*
 - b. *The actions or requests should be clear to the user.*
 - c. *The system should use the user's vocabulary and avoid confusing terms.*
 - d. *Dialogs should be consistent across similar tasks.*
5. The design should be error tolerant.
 - a. *Designs should avoid as many occasions for errors as possible.*
 - b. *Where feasible, the user should be able to undo the effects of a previous set of processing actions.*
 - c. *In critical situations where undoing is not possible, the user should be asked to confirm potentially destructive requests before they are performed.*
 - d. *The user should be able to correct information before processing it.*
6. The Design should be suitable for individualisation
 - a. *Users should be able to use those parts of a system that they need without having to use parts they do not need.*
 - b. *The design should be able to present content in different manners to meet the needs of different users.*

-
- c. *The user should be allowed to use alternate methods of interaction to increase accessibility.*
7. The design should be suitable for learning.
- a. *The design should reduce complexity and maintain consistency.*
 - b. *Users with varying levels of understanding should be able to use the system.*
 - c. *The user's memory load involved in using the system should be kept to a minimum.*
 - d. *The user should be kept informed about the current location within the system and the current status of any interactions.*
 - e. *Increased usage of the system should lead to increased learning about the range of possibilities of the system.*

Most, if not all, of these principles are common to general HCI Design as well. It is important for the designer to have in mind the Web site that is being designed when applying each of these principles. The Principles proposed by Carter take cognisance of the fact that there will be many users and that they might not have access to any documentation or help from “experts”. They will also have certain expectations which will be more difficult to find out as the users might not be a homogenous group of people. Many Web site users are sophisticated and require the ability to personalise their own Web sites. There will also however be many users’ who will be learning to use the Web or visiting a particular Web site for the first time, and thus the complexity should be reduced and ease of learning should be a key goal.

4.4 *Detailed Web Design Principles*

Sklar (2003: 28 - 59) has produced high level Web site design principles which state what should be achieved when designing Web pages. These principles are explained by detailed descriptions of how these high level principles can be achieved.

Sklar's high level principles follow:-

1. Design for the Computer Medium
2. Design the Whole Site
3. Design for the User
4. Design for the Screen

5. Plan the Site and Plan the Site Navigation

The detailed descriptions of how Sklar's (2003: 28 - 59) principles should be carried out are outlined below:

The First Principle - Design for the Computer Medium

When designing for the Computer Medium (*the first principle*), Sklar (2003: 28) states that it is important to remember that the destination is a computer monitor and not the printed page. He advocates that the designer should consider how the layout, fonts and colours will appear onscreen. He suggests that the interface or the "look and feel" is both the way the Web site works and the personality it conveys to the user. Sklar is of the opinion that the Web site should be planned for a deliberate "look and feel" and should be tested against the variable nature of the Web to ensure that the greatest number of users can navigate the site reliably. Sklar insists that portability and accessibility by users who have different browsers, operating systems and computer platforms are essential for a successful Web site. Sklar believes that the Web site should be tested in more than one environment, as it cannot be assumed that the pages will look the same, to all of the users and that one should build a profile of the average user.

Sklar (2003: 30) further suggests that the pages should be accessible at a variety of connection speeds and that if downloads are slow because of large detailed graphics or complicated graphics, then the users will leave before they see the content. Sklar advocates that the information design – presentation and organisation of information – is the most important factor determining the success of a Web site.

The Second principle - Design the Whole Site

Sklar's (2003: 31) *second principle* is to "design the whole site" by planning the unifying themes and structure that will hold the pages together. He states that the choices of colours, fonts, graphics and page layout should communicate a visual theme to users that orients them to the site's content. As part of the "whole site planning", it is important to create a unified look among the sections and pages of the site. Sklar (2003: 33) states that at this stage it is relevant to reinforce the identifying elements of the site and create "smooth transition" from one page to

another by repeating colours and fonts and by using a page layout that allows different hierarchical levels. He (Sklar (2003: 33) strongly suggests that one should avoid jarring changes in the format, unless that is the effect that the owner or organisation wants to achieve.

Sklar (2003: 35) persists that good use of “active white space” guides the reader and defines the areas of the page. He claims that content presentation can become confused when designers do not use enough active white space to separate and define content and that a lack of active white space creates the impression that a page contains too much information.

The Third Principle - Design for the User

Sklar’s (2003: 40) *third principle* is to keep the design efforts centered solely on the user and therefore to “design for the user”. This can be done by knowing the audience and their expectations, which will provide answers to almost all the design questions: “If it serves the audience, keep it; if it is potentially distracting or annoying, eliminate it.” Sklar (2003: 42) says that you should: “Design your content type, and decide whether the user is likely to read or scan your pages”. Sklar (2003: 44) also believes that it is important to “design for location”, and although it is difficult to predict the users exact viewing path there is a general agreement on the relative areas of screen importance.

Figure 4.1 indicates the relative importance of the different sectors of the screen.

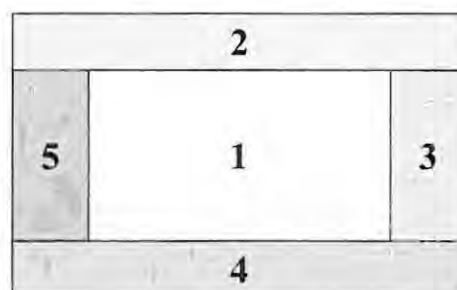


Figure 4.1
Relative areas of screen importance

(1 is the most important & 5 the least important position of the screen)

(Adapted from Sklar, J, 2003: 44)

Sklar (2001: 44), suggests that the most important information should be placed at **1** in the middle of the window, the next most important information across the top of the page at **2** and the least most important in the left margin at **5**.

According to Sklar (2003: 45) human engineering studies produce a wide range of results when tracking a user's eye movements, which indicates that a user can traverse a page in a variety of ways. He indicates that as a function of normal reading habits, the users' eye may move from left to right and back again (**Figure 4.2**). However, research has shown that when viewing landscape-based displays, such as television, the user may scan information following a clockwise pattern as indicated in **Figure 4.3**.

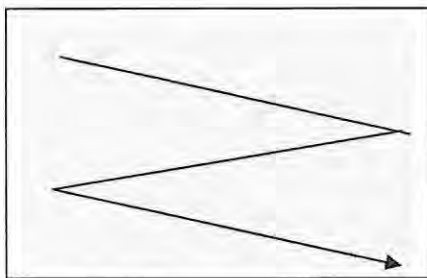


Figure 4.2
(Paper based reading pattern)

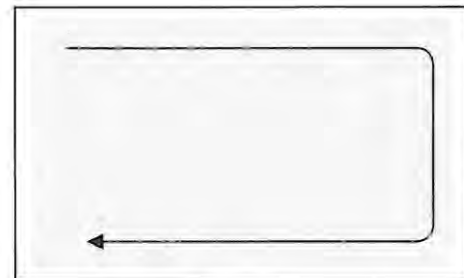


Figure 4.3
(Screen Based viewing pattern)

(Sklar, J.: 47 - 48)

Sklar (2003: 48) suggests that a flat hierarchy will ensure that users do not need to navigate through too many layers of the Web site to find the information that they want.

Sklar (2003: 50) contends that "hypertext linking" should be used by adding clickable text and images where necessary to guide users through the information. He suggests that plenty of links should be provided to allow the user to get around more quickly, but also to allow them to return to the navigation section of the page – to a site map or to the main page. Sklar (2003: 50) strongly suggests that a hypertext table of content is provided that allows the users to pick the exact topic which they would like to view.

In his guidelines, Sklar (2003: 53 - 55) addresses the question of "How much content is enough?" and is of the belief that Web pages often hold too much information and the author of a Web page must be conscious of the cognitive load of the user. Designing for accessibility is another

guideline that Sklar (2003: 55) advocates, as any large audience for a Web site includes users who want to access the content despite certain challenges. The challenges that he mentions are physical, sensory and cognitive disabilities, work constraints, or technical barriers on the part of the user. Sklar (2003, 56) states that most mainstream Web sites are so heavily image and media-intensive that they are not suitable for adaptive devices such as screen readers, voice browsers, and Braille translators.

The Fourth Principle - Design for the Screen

Sklar's (2003: 56) *fourth guideline* is to "design for the screen", which he concludes is very different from print based media. The shape of the computer screen is landscape oriented and not portrait oriented, and while paper reflects light, a computer screen has light passing through it from behind, which affect the choices of colours and contrasts. Computer screens also use a much lower resolution than the printed page. Sklar (2003: 57) claims that it is important to reformat content for online presentation, as most documents that are legible on paper are hard to negotiate online.

The Fifth Principle – Plan the Site and Plan the Site Navigation

Sklar's (2003: 58) fifth principle to Plan the Site is not a trivial task. In order to do this, a site specification will have to be created, the content goal, technology issues and constraints and the software tools must be identified. The development team needs to create conventions for filenames and URL's set a site directory structure, and finally diagram the site.

Planning the Site Navigation includes creating a detailed navigation plan with the various navigation methods available. It is important to work from the users' point of view and to think about where the users want to go within the Web site, and then make it easy for them to get there.

4.5 Design Layout

There are several aspects to be considered when designing the layout of the actual "screens" that will be displayed. The designer must consider how the tasks are going to be split across many

pages and how each page itself will be designed. The layout of the page must be decided upon and then consistency across the pages should be adhered to.

Research carried out by Huang (2003), selected 50 Web sites for analysis – which were not necessarily all corporate Web sites. Structured Web site analysis was used as an instrument to provide a systematic approach to data collection. After reviewing the overall designs of the Web sites, four major categories were identified which are shown as Types 1 through 4 diagrammatically in **Figure 4.4** below.

According to the study, **Type 4** appeared to be the most popular layout design, and **Type 2** was not adopted by any of the corporate Web sites in the sample. Huang (2003) concluded that evidence showed that the majority of the corporate Web sites follow screen conventions, but only 50% of the Web sites displayed consistent design throughout the site.

Four Major Categories of Web Design

(Defined by Albert H Huang, 2003)

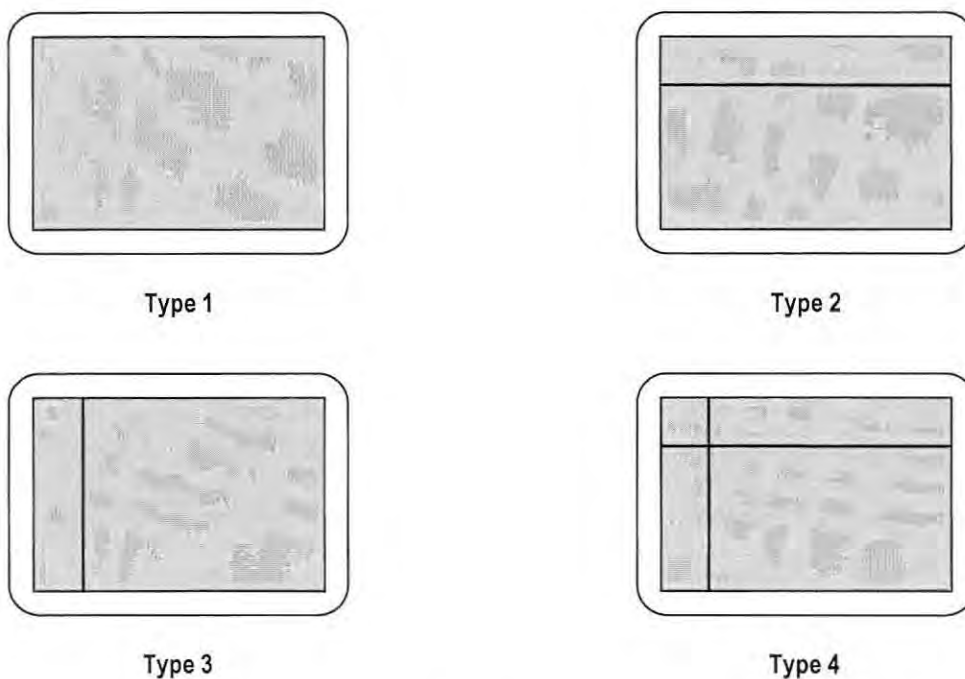


Figure 4.4

Huang's (2003) research further revealed that Web designers need to design sites with a medium resolution that will allow most of the page, to be viewed at one glance. Another factor identified by Huang that affects user viewing, is the length of a page. The study found that 82 percent of Web pages required users to scroll down to finish reading the page, which is not a good design practice. According to Huang, web pages should be designed to fit on one page.

Other Web design features that Huang investigated were:

- Personalisation of Web sites –
 - Research revealed that only 6 percent of corporate Web sites had the ability to customise information displays.
- Hypertext vs. Long Paragraph Styles –
 - Research revealed that most Web sites (82 percent) adopted the hypertext principle, which is essentially the use of key words and brief phrases on the upper level pages and the details are kept to the lower level pages.
- Video Usage –
 - The majority of Web sites did not contain video usage.
- Animation –
 - Research revealed that only 10 percent of corporate Web sites used Animation.
- Audio –
 - Research revealed that audio was only used as an accompaniment to video.
- Graphics –
 - Next to text, graphics proved to be the most popular media type and all Web sites contained some graphics, with approximately 6 graphics images on the home page.

4.6 Usability

Usability is of utmost importance for any Interface Design. However, when dealing with Web site design, it must be remembered that most users do not have access to help from any experts or documentation. The Web site must be easy to use and make the user feel totally un-intimidated at all times. There are certain features that can be implemented to ensure that sites are more usable, and designers should take note of these while designing pages for the Web.

Nielsen (2002) advocates that the advantage of a homepage for a company is greater than just e-commerce revenues, as the home page presents the image of a company to the world and will influence whether customers will carry out business with the organization. Nielsen (2002) believes that “Homepages are the most valuable real estate in the world.” Nielsen’s (2002) ten guidelines for homepage usability follow:

- Make the Site’s Purpose Clear: Explain who you are and what you do
 1. Include a One-Sentence Tagline that summarises what the site or company does.
 2. Write a Window Title with Good Visibility in Search Engines and Bookmark Lists.
 3. Group all Corporate Information in One Distinct Area (An “About<company name>” section is the best way to link users to more in-depth information that can be presented on the homepage.)
- Help Users Find What They Need
 4. Emphasise the Site’s Top High-Priority Tasks (One to four tasks)
 5. Include Search Input Box at least 25 characters wide to accommodate multiple words.
- Reveal Site Content
 6. Show examples of Real Site Content.
 7. Begin Link Names with the most Important Keyword.
 8. Offer Easy Access to Recent Homepage Features
- User Visual Design to enhance, not Define, Interaction Design
 9. Don’t Over-Format Critical Content, Such as Navigation Areas
 10. Use Meaningful Graphics.

Myer (2002) has also established some guidelines and tips for developing standards by which usability of the Web site’s content can be measured. He believes that content is a lot harder to measure and can be good or bad for lots of different reasons, some of them pertinent and some of them not. Myer has been gathering tips and guidelines for over seven years and his goal is to provide some standards by which to measure the content’s usability.

Myer’s tips follow:

- “Know the audience” is the first step in developing a Web site. In order to know the audience Myer suggests that an audience analysis is the starting point for any project. The audience demographics need to be figured out by asking such questions like: how old they are, where they work, what they earn, where they live etc.
 - Figure out the psychographics of the audience – what they want to accomplish, their hobbies, their dreams and anything that might come out in a counseling session.
 - What kind of content they would most like to see on the site and find out what problems they encounter on a daily basis, and whether the services offered on the site are able to alleviate these.

At the end of the analysis, it is vital to have a well-defined audience who can be identified as a niche target. Myer believes that by knowing the audience, it is easier to write effective, appropriate and usable content.

- “Make the content appropriate for the audience”. However, Myer states that it is also important to take into account that the content is also “appropriate for the organisation to publish.”
- “Use terms that are familiar to the audience”, which can be elicited from an initial audience analysis. Myer is of the opinion that familiarity will make people stick around and hopefully cause them to come back to the site. He states that *“Familiarity breeds content”*.
- “Plan the site so that users can skim.” Myer states that web readers don’t read they skim. “They jump around trying to find content that is relevant to them. Skimmability means using headers, bolding keywords, and using lists to make important items stand out”. His suggestions on how to make Web content easier to skim are the following:
 - Use lots of subheadings to break up the text into chunks, and also to help the user to decide where to jump in.
 - Keep sentences and paragraphs short forcing paragraphs to only contain one idea.
 - Use bullet and numbered lists, which will help to break up the page and also help the eye to jump to the right list. (Use bullets when numbers do not matter, and numbered lists for a procedure when order does matter).
 - Comparative Data should be put into a table.
 - Use as many illustrations as possible: Graphs, flowcharts and pictures can explain a lot.

-
- Bold or italicise keywords to make important points stand out. Underlining signifies hyperlinks; so don't use them inappropriately.
 - Shorten the line length, which makes it easier for the human eye to track. (Lines should be 40 to 50 characters in length).
 - Readability is very important and Myer believes that it is important to use the right font; font size and the content must be free of grammar, spelling and punctuation errors. Use fonts such as Verdana (sans serif) and Georgia (a serif) in the correct font size which were designed for online reading. Line leading (spacing) should provide enough space for easy reading.
 - Links can also help in skimming, and a good rule of thumb is to give enough information in a link to rule out people clicking on it by mistake.
 - The content has to have a goal and it is important to align the content goals with the goals of the organisation. Matching delivery with goals requires some thought in how to deliver the information. It needs to be asked whether you are trying to inform or teach, persuade or sell or any combination of these.
 - Delivery options should be fast, accessible and intuitive from a usability standpoint.
 - Deliver the content properly. This includes using the proper delivery mediums and speed.

4.7 *Misconceptions regarding Usability*

Nielsen (Nielsen, J. 2003a), claims that there are many misconceptions regarding:

- the expense of usability,
- the time that usability involves,
- the creative impact of usability and
- the mistaken belief that existing customer feedback methods are valid for the evaluation and design of interfaces.

The misconception regarding expense derives from the fact that some companies do spend a lot of money on usability laboratories, but most everyday usability projects are cheap. The usability methods are flexible and can be scaled up or down according to circumstances. Best practices call for spending 10% of a design budget on usability.

Nielsen (2003a) advocates that the misconception about the time it takes is normally generated by reports which are issued by large companies which have followed the entire user-centered design process without any flexibility or deviations.

Nielsen (2003a) claims that “usability can save time by helping to quickly settle arguments in the development team.” He states that “Most projects waste countless staff hours as highly paid people sit in meetings and argue over what users might want, or what they might do under various circumstances”.

Napier et al (2001: 239) offer several Web design tips which should also be considered:

- Keep it simple
- Use lots of white space for an uncluttered look.
- Ensure that the colours used in the design are browser safe and also fit the Web site’s message.
- White or black background colours are usually best.
- Keep the colour scheme consistent across all pages at the Web site.
- Avoid background images that obscure the text.
- Avoid frames unless absolutely necessary.
- Make certain that viewers can quickly scan the text.
- Make certain that fonts and font sizes and text formatting for emphasis are consistent across the Web site.

4.8 Consolidation of Web Design Principles

Sections 4.2 to 4.7 introduced numerous design principles and usability issues. The following are considered to be the most salient:

- The Web site should clearly communicate its goals, intentions or purpose.
- The site should be designed for the Computer medium with consideration to the layout, browsers and technology.

-
- The design should take into consideration and be suitable for the tasks that will be carried out on the particular Web site. It must include content that is appropriate to the business.
 - The perception of the user should be that the Web site it is easy to use.
 - All of the actions needed to be carried out should be self explanatory and/or easy to learn.
 - The user of the Web site should feel totally in control and should feel enabled to explore the site without feeling threatened.
 - The Web site should meet or exceed the users' expectations.
 - The user or customer should be able to customize a Web site that is frequently visited.
 - The Web site should engage the users, making them feel as though they would like to return to the site.
 - The designer should get to know the intended audience and always keep the user in mind.
 - Aesthetics and Navigation are important aspects which must be considered during the planning of the Web site.
 - The site should be designed in a manner that allows the user to skim the site for important features.
 - The Web site must be readable which includes the consideration of font, colour, grammar, simplicity, white space and line reading amongst others.
 - The Web site should be consistent when applicable.
 - The designers should understand that evaluation and usability testing is not necessarily costly, time consuming or a waste of input.

4.9 Conclusion

This chapter discussed the reasons why good Web sites should be built. General design Principles were reintroduced to emphasise that these should not be ignored. Detailed Design principles and guidelines specific to Web Design were discussed. Issues such as designing for the computer medium, designing for the whole site, designing for the user and designing for the screen were deemed to be important high level principles to follow. Design Layout for

the Web and Usability issues peculiar to the Web were considered. Misconceptions regarding Usability were pointed out as a warning to designers not to ignore usability testing. The principles and guidelines have been consolidated into a list which can be taken into consideration during design, testing and evaluation of Web sites.

Chapter 5

Internet Banking Web sites

Abstract

This chapter discusses the extent of the use of the Internet for online banking. Consumer expectations of online bankers and the perceived problems and precautions of online banking are investigated. Features offered by banks in South Africa and in the USA are also discussed and compared.

5.1 Introduction

Lamb (Lamb, Ellen Claire, Nov 2001) claims that one of the most important business tools available to any company, including the banking sector, is its Web site. However, ABSA (ABSA, e-Business Handbook, 2003), believe that compared to International trends “online banking” has not yet taken off in South Africa. The opportunities afforded to the South African banks to extend their online facility can be enhanced by making online banking more accessible and more usable. The extent of online banking in the world compared to South African online banking numbers is investigated. Consumer expectations of online banks and the perceived problems and precautions are discussed followed by a comparison of features offered by the various banks in South Africa and those in the USA.

5.2 Extent of online banking in the world

In the US, online banking has grown by 30 percent on average since 2001, to over 20 million users in 2003. Europe meanwhile has seen compound growth of more than 35 percent since 2000 to nearly 50 million users in 2003. South Africa’s 1 million-odd Internet bankers represent only 2-3 percent of the population.

According to World Wide Worx (2002) “a fierce competitive battle has been waged in South Africa over the past 6 years for control of the stretch of cyberspace (online transaction processing environment) between the click of a buy button and the conclusion of the transaction in the

merchant's bank account." Given this competition, it is extremely important that the bank's front of house, its Web site, is designed to attract new clients and keep existing clients happy.

It is therefore apparent that online banking in South Africa has a potential for growth which is a challenge for the banks to encourage their customers to "go online". One of the ways that this can be achieved is to ensure that the Web sites are appropriate and usable.

5.3 Consumer Expectations of Banking Web sites

Lamb (2001) believes that for Internet banking, the presence of the Web is essential for customer transactions, communications, marketing, projecting the bank's image and more. The design of a Web site is therefore crucial in attracting new customers and satisfying the existing customers. According to Lamb the percentage of community banking Web sites catapulted from 21 percent in 1997 to more than 75 percent in 2001. The percentage is even higher (96 percent) among larger community banks in the USA. Lamb feels that the explosion of services that community banks offer through the sites is as important as the growth in the number of bank Web sites. She (Lamb) states that today's banks are offering, and consumers expect, online banking, bill payment, discount brokerage, insurance and car buying, online loan applications and financial advice. It is as important to look at what is being offered on the bank's Web site, and also how it is presented. The presentation should enable a customer to feel comfortable and they should easily be able find what they want on the site. Lamb claims that because Web sites have become cheaper and easier to produce with new technology, designers believe that "more is better", and this might interfere with the original goals of the Web site. In Lamb's article, James R Wells, states that "Simple is Best" – and he contends that fancy colours and complex designs should be avoided and speed should be encouraged, as "customers want to do stuff, not read stuff."

Ira Aurit (Lamb, 2001) proposes that successful bank Web sites need three key elements:

1. The highest level of security for transactional services,
2. Relevant content to a customer's personal financial situation,
3. A responsive communication channel.

It is the relevant content that is of importance in this study. The content should be adequate for the customer to carry out the normal banking activities required.

5.4 Perceived Problems and Precautions with Banking Web sites

According to Consumer Reports (Feb 2002), it is claimed that even though online banking has been in existence for over six years, there are still snags to be found.

- It was found that signing up could take hours as the Web site would repeatedly time out.
- Some of the banks were unable to send application forms over the Internet, and also failed to alert potential subscribers that they would only accept customers from certain States (USA).
- The customers also found that after signing up and the account was working; it was found that some of the services offered were not trouble-free. An example of this at one bank was that if minor changes needed to be made to payee information, the entire account had to be deleted and the customer had to start from scratch again.
- It was noted that the average online banker does still stop by a branch at least once a month to make deposits or to withdraw cash.

According to Travis (Travis, D. 2000) of *systemconcepts*, bankers in the UK would prefer to join the queues in bank branches rather than use the web-based banking services. The article by Travis(2000) claims that the services have ignored even the most basic usability principles making the service impossible for novices to use. Travis (2000) assessed an earlier release of Barclay's on-line service which since then has addressed some, but not all, of the usability issues raised in the article.

Five major problems were identified by Davis (2000) with the Barclay's banking on-line service:

1. It is painfully slow to use. –

- The Barclays site is slow mainly because of the number of screens the customer has to wade through. Four screens are loaded to carry out the Logon, Choosing the banking type, entering membership number and finally the pin number... after which the customer finally gets to their account. The service is slow not because of graphics, but because of the interaction design. It was felt that the number of screens could have easily been reduced to achieve the same effect. The learning point that has been indicated is to hire an information architect to structure the site.



2. It ignores standards. –

- Nielsen's First law of the Web states that users spend most of their time at sites other than their own. Therefore it is important not to change de facto standards if there is not a very good reason. Barclay's on-line banking removed hypertext links entirely, and underlining is used on this site for emphasis and NOT to identify a link. On the same site, the "back" button does not work and unceremoniously ejects the user from the system.

3. It favours form over content. –

- In the Barclays site, the area that the customer has to work in only takes up 37% of the screen, the rest is taken up by navigation panes on the top, left and right; the screen title at the top; and an advertisement at the bottom.

4. It has poor customer support. –

- If you find yourself writing help on a web page, then you have failed.

5. It is not designed around customers' tasks. –

- Identify the key customer tasks and then structure the site around them.

Consumer Reports (Feb, 2002) noted that there are often monthly fees to be paid for the services. However, it is difficult to find out what fees are charged for each service and for each service provider as they all differ vastly.

Consumer Reports (Feb, 2002) offered some precautions regarding online banking:

- It is important to study the privacy policies to ensure that unwanted solicitations are not forthcoming.
- Ensure that the bank's fees are studied – normally found on the site map, or in FAQ's.
- The demo is a good place to start before deciding to sign on with a bank.
- It is essential to consider firewall security and virus protection software for the home computer.

5.5 Features on offer on Banking Web sites

5.5.1 South African Banks

Table 5.5.1 (January 2004) displays the minimum features which are currently on offer by ABSA Bank First National Bank and Standard Bank South Africa: *(This information was obtained from frequent visits to each of the bank Web sites).*

ABSA	FNB	Standard Bank
Approx R20.00 a month	Approx R20.00 a month	No monthly charge
MY DETAILS	My PROFILE	MY PROFILE
View /Update– Personal Details	Accounts	Review and update details via the Internet. Changes to your email address, promotional material indicator, phone numbers and charge account selection.
Cancel Service	Access Details	
Change Account Names	Earn profile	
Change Password and PIN	Cell phone Banking	
Verander in Afrikaans	Subscriptions	BASIC TRANSACTIONS
BASIC TRANSACTIONS	TRANSFERS	Balance Enquiries
Balance Enquiries	Between my accounts	Provisional Statements
Statement Enquiries	Funds to Budget	Transaction History Statements
Inter-account Transfers		Statement Download
Account Information		Statement Sort
Transaction Log		Inter-Account Transfers
BILL PAYMENTS	PAYMENTS	BILL PAYMENTS
Create - Beneficiary	Pay receipts	Link up to 99 beneficiaries.
Pay - Beneficiary	My recipients	Pay – beneficiaries
Pay - Multiple Beneficiaries	Once off	Pay now / Pay Later
Group - Create	Payment History	Repeat Payments
Group - Maintenance	Link FNB recipients	Tertiary Payments – (List of Tertiary Institutions provided)
OWN DEFINED PAYMENTS	ACCOUNTS	INTER ACCT TRANSFERS
Create - Beneficiary	My Accounts	Transfer funds between as many as nine linked accounts
Search - Bank Branch Codes	Search Transactions	
Pay - Beneficiary or beneficiaries	My Application	OPEN ELECTRONIC INVESTMENT ACCOUNTS
Group - Create & Maintenance		Call, Notice & Fixed Deposit
List of current beneficiaries		TRANSACT
Change & delete - Beneficiary		

ABSA	FNB	Standard Bank
Enquire & delete - Future-dated		Transfer from/into call deposits
Enquire - Payments		Transfer into Notice Deposits
STOP ORDERS	ACCOUNTING SERVICES	Give& cancel notice on notice deposit accounts
Create - Stop Order	Cancel Card	
Search - Bank Branch Codes	Stop Cheque	Amend Interest disposal
Change/ Delete Stop Order		Amend Capital disposal
Enquire - Processed Stop Orders		STOP PAYMENTS
Create – Stop Payment		Cheque or debit order
Enquire/Delete Stop Payment		BENEFICIARY MAINT
		Create/Amend/ Delete beneficiaries
	SHOPPING	OVERDRAFT FACILITY
	e-Bucks Shop	Increase existing facility
	Shopping Partners	Decrease an existing overdraft
	My Shopping Profile	
OTHER	OTHER	OTHER
View Interest Rates	View Interest Rates	View Interest Rates
SMS Notification	SMS notifications	SMS notifications
Pre-Paid		Share and Portfolio services
		Media Releases
		Tools & Calculators

Table 5.5.1

(Features offered online by three South African Banks)

5.5.2 USA Banks

According to Consumer Reports (Feb 2002) six main features that were offered by the fifteen banks studied in USA were identified. These features are:

- Free bill paying
- Transaction history for more than 3 months
- Low balance warnings
- Online bill presentation
- Bill-payment guarantee
- Cash Payments via e-mail

The results shown in **Table 5.5.2** indicate that on average approximately 31 percent of the features are offered across the board in the USA banks that were used for the study.

Bank	Free Bill Paying	Transaction History for more than 3 months	Low-balance warnings	Online bill presentation	Bill payment guarantee	Cash payments via e-mail
Etrade	Yes	Yes	Yes			
Citibank	Yes	Yes	Yes			Yes
Netbank	Yes		Yes	Yes	Yes	
JPMorgan Chase	Yes		Yes		Yes	
Bank One				Yes	Yes	Yes
Bank of America				Yes		
Fleet Bank		Yes	Yes			
Key Bank		Yes			Yes	
Washington Mutual						
Firststar Bank				Yes	Yes	
Wells Fargo					Yes	
U.S Bank		Yes		Yes		
PNC Bank				Yes		
Sun Trust						
Fifth Third Bank						

Table 5.5.2
Adapted from “Should you bank online?”
 (Consumer Reports, Feb 2002)

Table 5.5.3 offers an alternative view of what is on offer by banks online in the USA.

- Trade Stocks
- Research Reports
- Financial News
- Apply for Loans
- View Mortgage
- Get Payments
- Set Alerts for Text to Cell Phone
- Email Payments
- Aggregate the accounts

- Receive Bills
- E-Mail Customer Service
- Transfer Funds between accounts
- Bill Payment
- Approval on Loans
- Past Statements
- Password Access
- Track credit card payments
- Text-to-voice technology
- Personal Cash Flow Statement
- Wireless Access (Palm Handheld)
- Reliable Accurate search engine

Table 5.5.3

List of features available on online banking in USA

(Hutheesing, Nikhil, Forbes, 2001)

The features presented in **Tables 5.5.2** and **5.5.3** display different types of features. The features in **Table 5.5.2** display the low level banking functions on offer on the bank Web sites, whereas **Table 5.5.3** displays the banking functions such as Bill Payment and Past statements as well as enhanced Web site features such as Password access, track to voice technology and others. **Table 5.3.3** displays a more comprehensive list of features offered by Internet Banking in the USA.

5.5.3 Analysis

It can be seen from **Tables 5.5.1**, **5.5.2**, and **5.5.3**, that many of the online banking features offered in the USA are also offered online in South Africa. The features that were not apparent in the South African list are “Low-balance warnings” and “Cash Payments via e-mail”. The South African sites did not disclose whether they offer Wireless Access (Palm Handheld) which is included in the USA list. The differences between South African Banks and the banks in the USA are of no real significance, indicating that the online banking features in the two countries are very similar. **Table 5.5.4** display the list of features that are common to banks in South Africa and USA.

- Financial News
- Apply for Loans
- Get Payments
- Set Alerts for Text to Cell Phone
- Aggregate the accounts
- Receive Bills
- E-Mail Customer Service
- Transfer Funds between accounts
- Bill Payment
- Approval on Loans
- Past Statements
- Password Access
- Track credit card payments
- Personal Cash Flow Statement
- Reliable Accurate search engine

Table 5.5.4

List of features that are common to online banks in South Africa and USA

5.6 Conclusion

Online banking is still in its infancy in South Africa with less than 5 percent of the total population registered for this facility. The consumer expectations include online banking, bill payment, discount brokerage, insurance and car buying, online loan applications and financial advice with the key elements incorporating the highest level of security for transactional services, relevant content to a customer's personal financial situation and a responsive communication channel. Problems encountered are signing up delays with troublesome services and the need to still go to banks to make deposits or withdrawals. The fear of security and some usability issues also keep customers away. The Web sites themselves do not always run in a standard way and offer poor customer support. The Web sites are not always designed according to the tasks that are required, and there is an inconsistency regarding fees payable for the services offered. The precautions offered include the issue of privacy policies, bank fees and ensuring virus protection software for home computers. Features on offer in South African banks were compared against those features offered by the banks in the USA. The features are very similar in the two countries.

Chapter 6

Web site Evaluation

Abstract

This chapter describes the process of Web site evaluation. A number of evaluation tools are assessed for suitability. Finally, a tool is selected for the evaluation of banking Web sites.

6.1 Introduction

Preece et al (2002: 317) define evaluation as the systematic process of collecting data that informs us about the impressions of a particular user or group of users when using a product for a particular task in a certain type of environment. Preece et al (2002: 319) believe that evaluation is essential to check that users are able use a product effectively and efficiently, and enjoy the experience.

Napier et al (2001: 239) believe that an impression of the Web site is formed by the viewer within the first few seconds of a visit. This impression will probably be favourable if the design is good and the viewer will more likely become a customer. Napier et al (2001: 239) advocate that a well designed Web site should support the e-business Web site message without distracting from that message.

Aspects of tests and evaluating Web sites are investigated and the results of Web Evaluation Surveys are discussed giving some insight into the value of such surveys. Several Web Evaluation Tools are examined for their suitability for the analysis of online banking Web sites. A tool is selected for use, although it is suggested that adjustments are made to incorporate extra features that are believed to be relevant for the evaluation of the Web sites. Extra graphs could also been added to the tool in order to aid with the processes of analysis.

6.2 *Testing and Evaluation of Web sites*

In order to ensure that the design of a Web site is of high standard, it is suggested that Web sites are tested and evaluated. Preece et al (2002: 340) believe that evaluation is driven by questions about how well the design of particular aspects of the design, have satisfied the user's needs.

Preece et al (2002: 341) identify four core evaluation paradigms which include:

- “Quick and Dirty” evaluations in which designers informally get feedback from users or consultants. These are done at any stage during the design.
- Usability Testing involves measuring the performance of typical users by carrying out specific tasks and is generally measured in terms of number of errors and time taken to complete the task.
- Field Studies are done in natural settings with the aim of increasing the understanding about what users naturally do and how the technology impacts on them.
- Predictive evaluation experts apply their knowledge of typical users to predict usability problems. In this type of evaluation, users need not be present.

These paradigms can include techniques such as observation, asking the users for their opinions, asking experts for their opinions, testing users' performance and modeling users' task performance to predict the efficacy of the user interface.

6.3 *Surveys conducted on Web sites*

Schrock's (Schrock, K, 2002) “Critical Evaluation Survey” states that initially two high level concepts, namely the content and authority, should be considered when evaluating a Web site. The content, should establish the purpose, usefulness, ease of use, helpfulness, up-to-date (timeliness) and necessary or redundant graphics and the authority, should establish who is responsible for the site and whether it is linked to a home page, truthfulness of the content and satisfaction that the information is useful for its purpose.

Within these high level aspects, certain criteria are discussed in Schrock's (2002) survey. These criteria include Intention, Relevance and the Reliability of Web sites, which are elaborated below:

1. Intention:

- Why was the web created?
 - Purpose of the site?
 - What does the author gain from it?
 - What does the purpose tell you about the reliability of the information?
- What opinion does this page represent?
 - The point emphasised?
 - Is the tone objective or fanatical?
 - Anything missing or any logical errors or issues.

2. Relevance

- When was the page put up?
- Have the authors changed it?
- Does it matter?

3. Reliability

- Who put up the Web site?
 - Can you tell who the authors are? – Do they claim ownership?
 - Who do the authors work for and what are their credentials?
 - Name recognition is important.
- How good is the information?
 - Does info fit in with what is already known?
 - Spelling and grammar?
 - Does the web rely on graphics to distract from the text?
- How well documented is the work?
 - Bibliography exists? – Are they academic?
 - Links Work? – Are they academic?

These criteria should all be investigated during an evaluation of a Web site and should be included in Web evaluation tools.

6.4 *Web site Evaluation Tools*

It has been suggested that in order to carry out Web design evaluations several methods can be used. The use of a Web site Evaluation Tool is a recognised method for the evaluation of Web site design and usability.

There are many Web Evaluation Tools available and several of these have been identified as relevant tools to be used in a business environment. The tools are usually in the form of questionnaires or checklists and would normally be used by an HCI expert, who understands the criteria and terminology, to evaluate a Web site. It would be wise for the HCI expert to have a user profile in mind, as consideration of the user is an integral part of the evaluation.

Furthermore, Waller (2001a) suggests that Web Evaluation tools are intended to help the designer develop or test a Web site to ensure that it is appropriate for its intended use. The tool can be used by the designer as a checklist to ensure that good features are included and bad features are excluded from the Web site to make it more usable. Web evaluation tools can be implemented by designers as well as the other stakeholders to ensure that the Web site is complete and appropriate for its intended use.

Most Website Evaluation Tools are in the form of a questionnaire which includes either checkboxes to indicate Yes or No, or the use of a Lickert scale to offer a specific grading of the particular feature being assessed. Some of these tools are presented in a spreadsheet format which include calculations to produce tables and graphs which can be used to analyse the site or sites being evaluated. Another format is that of a comparative evaluation tool with several columns or several pages which allows one or more designer/s to evaluate and compare more than one site. These tools produce comparative tables and graphs which make it easier to compare Web sites being assessed.

The evaluation questionnaires are generally categorised into high level categories such as: first impression, image, navigation, site design, site functionality, customer value and content appropriate for the intended audience, contact information, good for search engines and others.

6.5 Appraisal of four Web Evaluation Tools

Four Web Evaluation Tools are presented. Software Evaluation Criteria (4), Richard Waller's Seven Point Checklist, WebQual™ Evaluation Tool and The "Gartner" Web Evaluation Tool. The form, area of application, structure, use of the tool, result and comment about each tool is discussed for each of the tools.

6.5.1 Software Evaluation Criteria (4); Web site Evaluation Tool

Software Evaluation Criteria (4) was developed by Virginia Community College and consists of a checklist which is used to evaluate a Web site. The questions concern the actual site design and navigation, purpose of the design, the intended audience, technical aspects, interactive features, other features and Unified Web accessibility guidelines.

A copy of the tool can be found in Appendix A.

Name:	Software Evaluation Criteria (4)
Form:	Checklist.
Area of Application:	General evaluation tool for any Website.
Structure:	<p>Checklist consists of the following target categories of questions.</p> <ul style="list-style-type: none"> • URL Address • Sponsor • Purpose • Intended Audience • Design and Technical Aspects • Directions on Downloading Applications • Interactive features • Unified Web Accessibility Guidelines
Use of Tool:	The list of questions should be checked by the designer, who will tick off

	the check boxes to indicate whether or not the criteria have been met. The tool is normally used by the designer to establish whether or not all the specified design features have been considered for the Web site.
Result:	For a good site, the completed checklist will have as many ticks as possible. The crosses would mean that the design features are not present.
Comment:	<p>This tool is suitable for use during the design process or as an ongoing evaluation check used by the designer to ensure that the design is complete and suitable for the intended audience.</p> <p>This tool would be used together with other testing methods at various stages of the design life cycle.</p> <p>It is a short and easy to use checklist consisting of 9 questions and is not a comprehensive Web Tool.</p>

6.5.2 Richard Waller's Seven Point Checklist

Richard Waller (Waller, R, 2002) produced a Seven Point Checklist which can be used to run against a Web site. The suggestion is to obtain as many "yes" answers as possible for a more usable Web site. An eighth point is added to check for unwanted features.

A copy of the tool can be found in Appendix B.

Name:	Seven Point Check List
Form:	Checklist
Area of Application	General evaluation tool for any Web site.
Structure	The checklist consists of the following categories of questions:

	<ul style="list-style-type: none"> • Good First Impression • Friendly Image • Easy Navigation • Useful Content • Appropriate for Audience • Clear Contact Information • Good for Search Engines • (Things not to have – 26 aspects which should not be on the Web) <p>Each of these points has several questions which need to be checked off to ensure usability of the site.</p>
Use of Tool	<p>This tool is used by designers and evaluators to assess the usability of a Web site. The comprehensive list of questions is checked against the Web site by an expert testing one site at a time.</p>
Result	<p>The result is a completed checklist with a tick or a cross in every box. The more ticks there are, the more usable the Web site should be. The eighth point which checks for the 26 features which should not be on a Web site works in the reverse order. More ticks for section 8 indicates that the site becomes unusable.</p>
Comment	<p>This tool is used during the design or evaluation of an individual Web site. It covers many aspects of Web site design and is a comprehensive tool which can be used during the design stage of the Web Development Life Cycle.</p>

6.5.3 WebQual™ Evaluation Tool

WebQual 4.0 is a generalized instrument that has been strengthened by making heavier use of existing literature on web usability. WebQual uses a 1 - 7 Lickert scale to assess the user rating of the quality being measured and a 1 - 7 Lickert scale to assess the importance of that particular quality to the user.

A copy of the tool can be found in Appendix C.

Name:	WebQual™ Evaluation Tool.
Form:	Questionnaire.
Area of Application	General evaluation tool for any Web site. It is of particular value for e-Business Web sites.
Structure	The questionnaire consists of 4 categories of questions each requiring a response on a 1 – 7 Lickert scale: <ul style="list-style-type: none"> • Usability • Information Quality • Interaction Quality • Overall Impression
Use of Tool	The tool is used by researchers and practitioners to answer why and how customers differ. The questionnaire is completed by assigning a value, in the range of 1 – 7, for each of the questions answered. 0 = bad/poor design and 7 = good design.
Result	The result is a WebQual Index (WQI) in the range of 0 to 1, which is calculated from the essential components of Web site quality. The Tool Produces graphics relating to the scores that are evaluated to indicate which areas need improvement.

Comment	The tool is used by researchers and practitioners to answer why and how customers differ. It enables managers to pinpoint customers' needs and how to improve the website to address these needs. It is a relatively comprehensive industry standard tool.
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6.5.4 The "Gartner" Web Evaluation Tool

The Gartner Group Inc ("Gartner") has developed a Web Evaluation Tool, which they believe will help weigh certain criteria to highlight key drivers of value on a Web site.

A copy of the tool can be found in Appendix D.

Name:	"Gartner" Web Evaluation Tool
Form:	Questionnaire
Area of Application	Business and Industry Websites
Structure	<p>The questionnaire consists of numerous categories of questions each requiring a response on a 1 – 9 Lickert scale and/or Yes/No answers (1/0):</p> <ul style="list-style-type: none"> • Overall Criteria <ul style="list-style-type: none"> ○ Site Design ○ Sight Functionality ○ Customer Value • Industry Criteria <ul style="list-style-type: none"> ○ E-Tail ○ Financial Services <ul style="list-style-type: none"> ▪ Retail Banking <ul style="list-style-type: none"> • Account Types • Functions

	<ul style="list-style-type: none"> ○ Government ○ Hospitality and Travel ○ Manufacturing ○ News/Information /Entertainment, Portals & Communities ○ Shipping, Delivery & Freight ○ Utilities (Telecom, Cable, Electric & Fuel) <p>Overall criteria are weighted 75% and Industry criteria 25% of the total Site score. The tool caters for many different Industries including Financial Services. The tool is in the form of a Microsoft Spreadsheet containing formulae to calculate totals, averages and weighted averages. Tables and graphs are produced from the spreadsheet information.</p>
Use of Tool	The tool is used by researchers and practitioners to carry out a comparative analysis of company's web presence. The tool can be used by many users on many sites.
Result	The tool calculates the averages of all of the sites evaluated by all of the evaluators, and produces comparative results that are represented in table format as well as graphical format. The result is a percentage, with 100% indicating the best results.
Comment	This is a comprehensive tool that is very easy to use. It is a serious study and is time consuming. The tool is easily adaptable and could include more tables and graphs which can be used to analyse different aspects of the sites being evaluated. Comparisons can easily be made between different sites and between different evaluators of the same site. The spreadsheet format is easy to use and the results are instantaneous.

6.6 *Choice of Web Evaluation Tool*

The tools that have been presented can be used in different conditions and for different purposes. The Software Evaluation Criteria (4) and Waller's Seven Point Check List are useful for the designer to check that features are present on the site. WebQual and the "Gartner" tool are much more comprehensive tools to be used for more serious research and evaluations of Web sites. The "Gartner" Tool can be used by more than one evaluator to measure more than one site at a time, and these results can be compared. It is also specifically tailored for the financial services industry.

It is proposed that The "Gartner" Web Evaluation Tool is used to evaluate the selected banking Web sites.

6.6.1 *The Adapted "Gartner" Web Evaluation Tool*

Analysis of the various evaluation tools indicates that the "Gartner" Tool could be enhanced with the addition of extra questions that target a measure of first impression, more detailed navigation and further industry criteria questions.

6.6.1.1 *Additional Overall Criteria*

6.6.1.1.1 *Good First Impression*

Waller's Seven Point Check List includes a section on "Good First Impression" which is considered to be a valuable addition to the "Gartner" Tool. These aspects are not assessed anywhere else in the "Gartner" Tool. This checklist gives a relatively high weighting to "Good First Impression", which amounts to 26% of the criteria that are similar to those measured in the "Site Design" of the Gartner Web Evaluation Tool.

It is proposed that a new section called "Good First Impression" is added to Section 1 (Site Design) of the questionnaire. This section will include six extra questions to be checked off in the form of (Yes/No) response with the value of 9 for a Yes and 0 for a No response.

1.1	Good First Impression			
1.1a	Simple address URL	0,9	0,9	0,9
1.1b	See Title immediately	0,9	0,9	0,9
1.1c	Content in eight seconds	0,9	0,9	0,9
1.1d	Feeling of wanting more	0,9	0,9	0,9
1.1e	Home page on one screen	0,9	0,9	0,9
1.1f	Contact details	0,9	0,9	0,9

The weightings in the first section of 85% for Navigation and 20% for Aesthetics are adjusted to cater for the added criteria as follows:

- 20% for Good First Impression
- 65% for Navigation
- 15% for Aesthetics

6.6.1.1.2 *Enhanced Navigation*

The “Gartner” Tool does not assess the existence of two other important criteria namely the ability to return to the Home page from anywhere on the tool and to have a Search Tool included on the Web site. Two questions have therefore been included in the Navigation section of Site Design displayed below. These questions also require a Yes/No response. (The Yes response will attract a score of 9 and a No response a score of 0). This score of 9 for a yes, is to fit in with the rest of this particular section which works on the Lickert scale of 0-9

1.2g	Return to home page from any page	0,9	0,9	0,9
1.2i	Search Tool?	0,9	0,9	0,9

6.6.1.2 *Additional Industry Criteria*

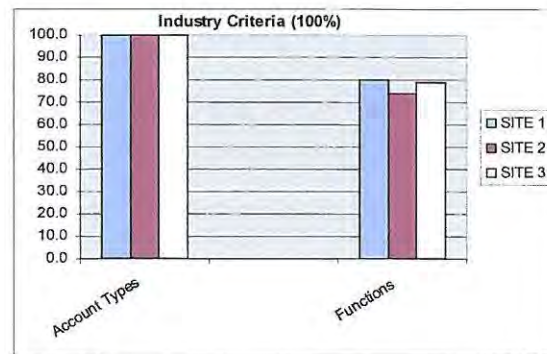
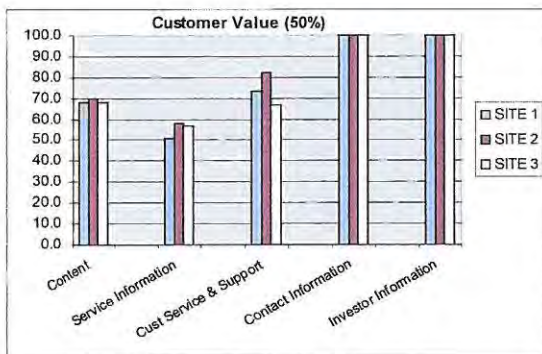
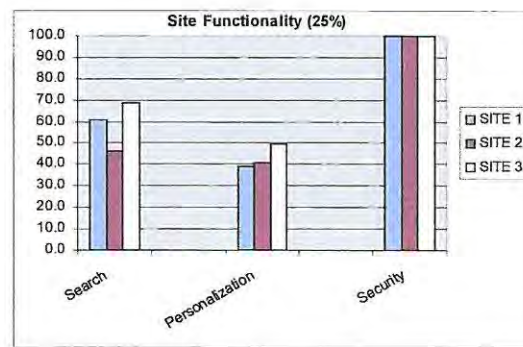
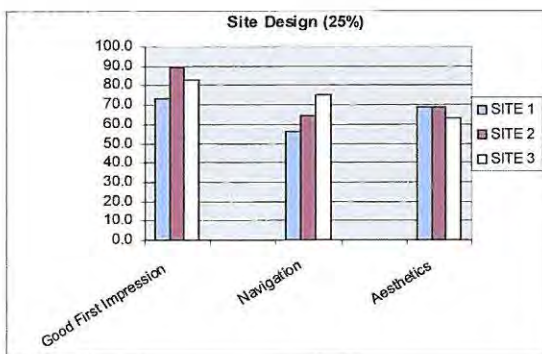
South African Banks allow users to create and pay beneficiaries, and the Industry Criteria questions did not test this in any way. It was also ascertained that Pre-paid cell phone, Stop Orders (Repeat Payments) and View Interest Rates did not appear on the questionnaire and were identified during the literature review as available online banking features.

These four new items have been added to the list of Industry Criteria Questions, which are shown below. These also require a Yes/No response, with a 0 indicating No and a 9 indicating a Yes response. These are displayed below:

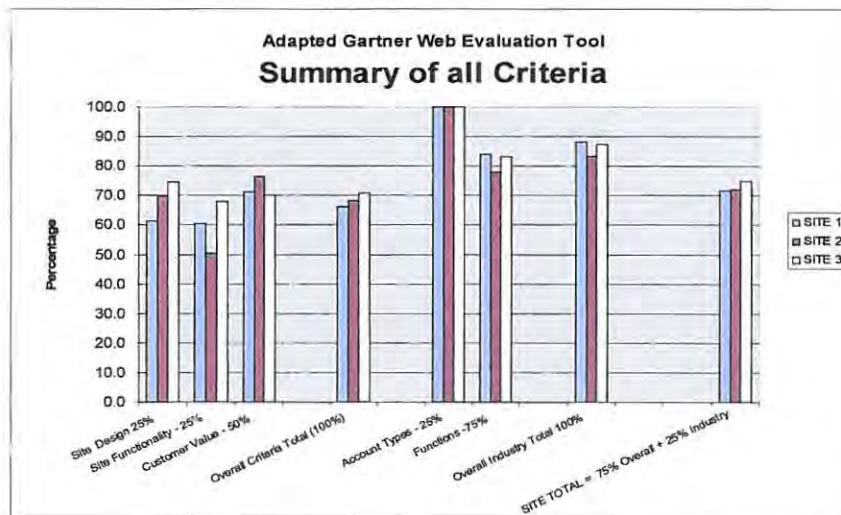
Create beneficiaries	0,9	0,9	0,9
Pre-paid (Cell Phone)	0,9	0,9	0,9
Stop Orders (Repeat Payments)	0,9	0,9	0,9
View Interest Rates	0,9	0,9	0,9

6.6.1.3 Additional Graphs

Additional graphs which show the detailed summaries of the Overall and Industry Criteria and the Final Summary of All Criteria have been added to the Adapted “Gartner” Tool for more detailed analysis to be carried out. These additional graphs are shown below.



Detailed Summaries of Overall and Industry Criteria



Final summary of all the Criteria

6.7 Conclusion

Aspects of tests and evaluating Web sites were investigated and the results of three Web Evaluation Surveys were discussed giving some insight into the value of such surveys. Several Web Evaluation Tools were investigated for their suitability to use for the analysis of Online banking Web sites.

These evaluation tools incorporate the design principles and guidelines which have been discussed throughout this research. Each tool differs slightly, but the overlaps far exceed the differences. The “Gartner” Web Evaluation Tool appears to be the most appropriate tool as the results can be adapted to produce a format which is easy to analyse. The “Gartner” Web Evaluation Tool has been specifically designed to allow for comparative evaluation which is what is intended by this research. The Gartner tool also supports specific criteria for Retail banking. The “Gartner” Web Evaluation Tool has been adapted to include criteria that were considered important aspects of Web site Design during the review of the related literature.

Chapter 7

Evaluation of the Banking Web sites in South Africa

Abstract

This chapter presents the results of the evaluations of three South African banking Websites using the “Gartner” Web Evaluation Tool.

7.1 Introduction

In the previous chapter, various Web evaluation tools were introduced and described. These tools incorporate the principles and guidelines of Web design which are proposed by the various experts in this field. The decision was made to use the “Gartner” Web Evaluation Tool for the purpose of this research.

This chapter briefly describes the evaluation process and with the use of tables and graphs carries out an analysis of the results of the output produced during the evaluation.

The raw data of the evaluation process can be found in Appendix E, together with the tables and graphs that were produced.

A summary outline of all the criteria is discussed at a high level before the detailed results of the Overall and Industry criteria are considered.

7.2 Preliminary

7.2.1 Design of the Experiment

The bank Web sites of ABSA (<http://www.absa.co.za>), Standard Bank (<http://www.standardbank.co.za>) and First National Bank (<http://www.fnb.co.za>) were accessed and evaluated over a period of eleven days from 12th - 23rd January, 2004 by the researcher.

7.2.2 *Registration as an Internet Banker*

Separate banking accounts were opened up at the three South African Banks (hereinafter referred to as SITE 1, SITE 2 and SITE 3). Online application was made, by the author, to register for Internet banking at each of the banks. The registration process to register as an Internet banker for the three banks, was perceived to be relatively intimidating, further impeded by the timeout function.

7.2.3 *Process of Evaluation*

The Adapted “Gartner” Web Evaluation Tool was applied to all three banks over a ten day period.

Numerous Internet Banking sessions were held at the sites in order to ensure that similar criteria were being used to evaluate each of the categories during the evaluations. Because the style of each Web page and the business function breakdown of each bank site varied a great deal, it was sometimes difficult to ensure that similar functions were being evaluated. The raw data was captured directly onto the Adapted “Gartner” Evaluation Spreadsheets.

7.3 *Results of the Evaluation*

7.3.1 *Order of the Results*

The results are presented firstly as a high level summary then as detailed results.

7.3.2 *Summary outline of all Criteria*

Table 7.3 and **Diagram 7.3** summarise the results of the evaluation.

Adapted Gartner Web Evaluation Tool								
	Overall Criteria Weighted Score				Industry Criteria Weighted Score			SITE TOTAL
	Site Design	Site Functionality	Customer Value	Overall Criteria TOTAL	Account Types	Functions	Industry Criteria TOTAL	SITE TOTAL (Overall and Industry)
SITE 1	63.8	65.4	70.2	67.4	100.0	74.6	80.9	70.8
SITE 2	69.7	50.6	75.2	67.7	100.0	68.6	76.5	69.9
SITE 3	75.5	66.1	69.1	69.9	100.0	74.1	80.5	72.6

Table 7.3
(Weighted Scores of Overall and Industry Criteria)

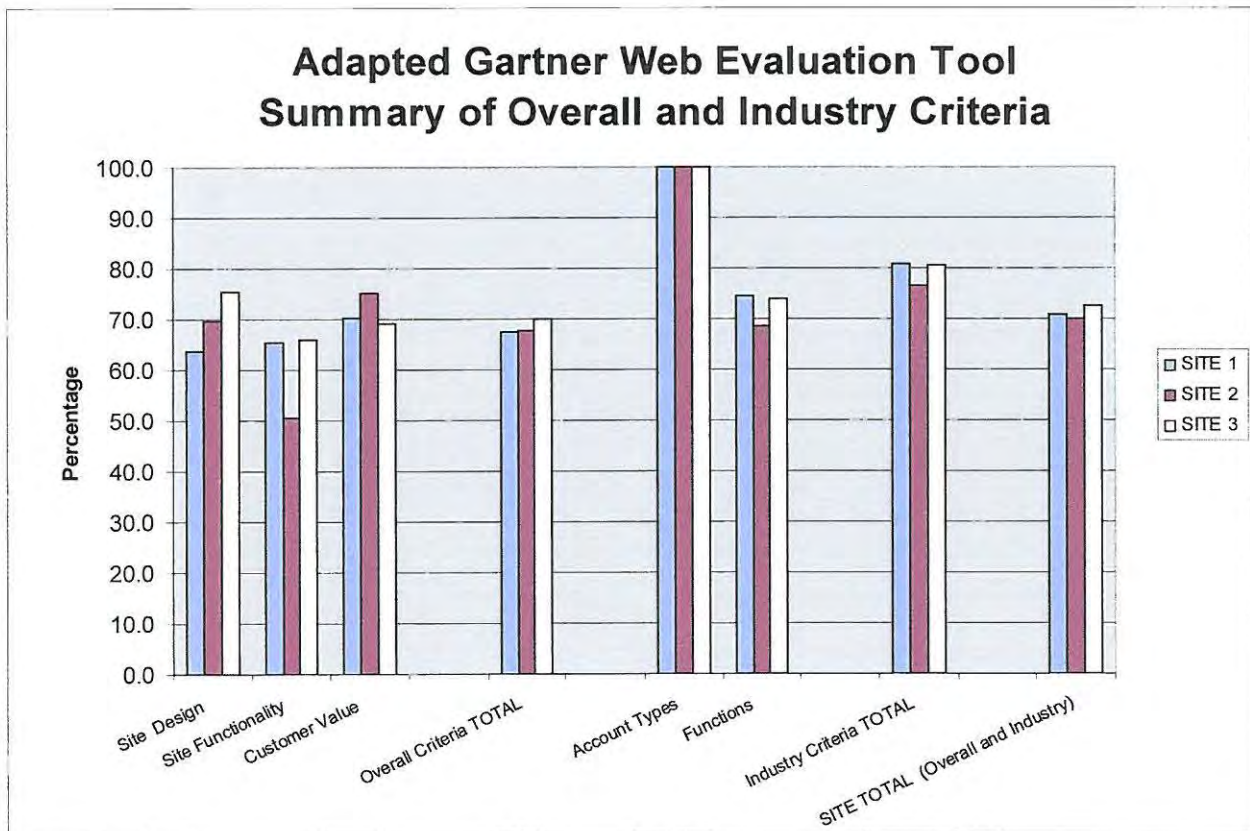


Diagram 7.3
(Summary of Overall and Industry Criteria)

It can be seen from **Table 7.3** that the final weighted **SITE TOTAL** rating ranges from 70.8% to 72.6% for the three banks that were evaluated. Despite the closeness of the scores, each bank showed strengths and weaknesses in different areas.

The total values scored in the Overall Criteria were 67.4%, 67.7% and 69.9% which comprised of:

- 25% of Site Design:
- 25% of Site Functionality:
- 50% of Customer Value:

The lowest scores achieved were for Site Functionality and the highest scores achieved were for Customer Value. Site 3 scored the highest in Site Design and Site Functionality, but had the lowest score for Customer value. Site 3 had the highest overall score for the Overall Criteria.

The Values scored in the Industry Criteria were 80.9%, 76.9 and 80.5% which comprised of:

- 25% of Account Types
- 75% of Functions

Site 3 scored the highest in Functions and all the sites scored full marks for Account Types. Therefore Site 3 scored the highest for the Industry Criteria

The values scored for the Site Total were 70.8%, 69.9% and 72.6% which comprised of:

- 75% of Overall Site Criteria
- 25% of Industry Site Criteria

Site 3 scored the highest for the Overall Criteria and for Industry Criteria. Site 3 scored the highest for Overall Site Total.

7.3.3 Detailed results of Overall and Industry Criteria

Table 7.3.3 and **Diagrams 7.3.3.1** to **7.3.3.4** summarise the category results of the Overall and Industry Criteria. **Table 7.3.3** summarises the average raw scores and the average weighted scores for the three sites. The raw data can be found in Appendix E.

Adapted Gartner Web Evaluation Tool		Average Raw Score by Criteria			Average Weighted Score by Criteria			
OVERALL CRITERIA		SITE 1	SITE 2	SITE 3		SITE 1	SITE 2	SITE 3
1.1	Good First Impression	71.4	85.7	82.5	20%	14.3	17.1	16.5
1.2	Navigation	60.3	65.1	76.2	65%	39.2	42.3	49.5
1.3	Aesthetics	68.5	68.5	63.0	15%	10.3	10.3	9.4
1	Site Design (20%)	200.3	219.3	221.7	25%	63.8	69.7	75.5
2.1	Search	61.1	46.3	68.5	70%	42.8	32.4	48.0
2.2	Personalization	63.0	40.7	40.7	20%	12.6	8.1	8.1
2.3	Security	100.0	100.0	100.0	10%	10.0	10.0	10.0
2	Site Functionality (25%)	224.1	187.0	209.3	25%	65.4	50.6	66.1
3.1	Content	68.3	69.8	68.3	30%	20.5	21.0	20.5
3.2	Service Information	50.6	58.0	56.8	20%	10.1	11.6	11.4
3.3	Cust Service & Support	73.3	82.2	66.7	35%	25.7	28.8	23.3
3.4	Contact Information	88.9	88.9	88.9	10%	8.9	8.9	8.9
3.5	Investor Information	100.0	100.0	100.0	5%	5.0	5.0	5.0
3	Customer Value (50%)	381.1	399.0	380.6	50%	70.2	75.2	69.1
INDUSTRY CRITERIA		SITE 1	SITE 2	SITE 3		SITE 1	SITE 2	SITE 3
4.1	Account Types	100.0	100.0	100.0	25%	25.0	25.0	25.0
4.2	Functions	74.6	68.6	74.1	75%	55.9	51.5	55.5
4.0	Industry Criteria (100%)	174.6	168.6	174.1		80.9	76.5	80.5
TOTAL FOR OVERALL CRITERIA		805.4	805.3	811.6		67.4	67.7	69.9
Un-weighted/ Weighted % of Total		73.2%	73.2%	73.8%		67.4%	67.7%	69.9%
Total Possible		1100	1100	1100		100	100	100
TOTAL FOR INDUSTRY CRITERIA		174.6	168.6	174.1		80.9	76.5	80.5
% of Total		87.3%	84.3%	87.0%		80.9%	76.5%	80.5%
Total Possible		200.00	200.00	200.00		100	100	100

Table 7.3.3

(Average raw scores and weighted scores by criteria)

7.3.3.1 Overall Criteria

7.3.3.1.1 Site Design

Site Design has a 25% weighting within the Overall Criteria. Site Design is composed and weighted as follows:

- First Impression 20%
- Navigation 65%
- Aesthetics 15%

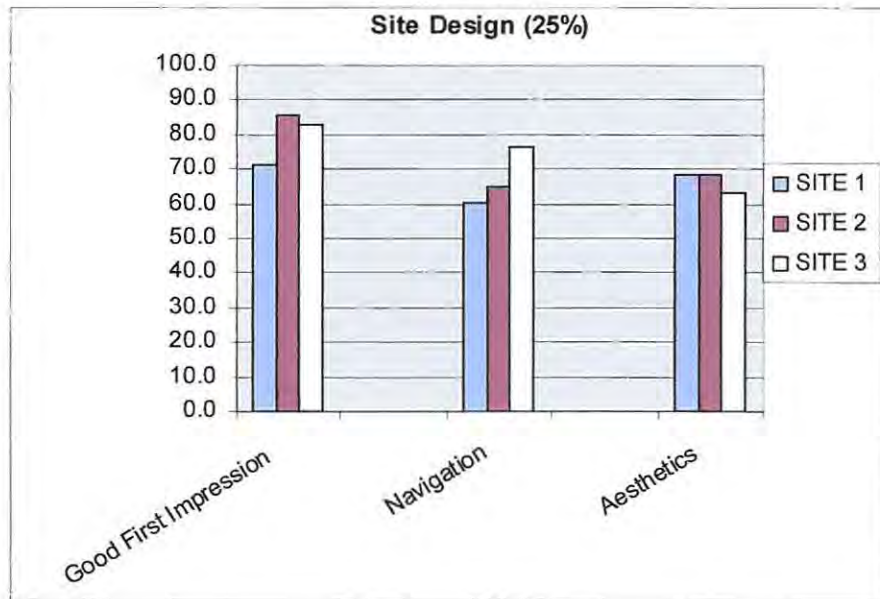


Diagram 7.3.3.1.1
(Site Design - Average Raw Scores)

Site Design was scored at 63.8%, 69.7% and 75.5% for Sites 1 through 3 respectively. (Table 7.3)

Good First Impression was scored at 71.4%, 85.7% and 82.5% for Sites 1 through 3 respectively. The lowest rating was for Site 1 which did not have the home page on one screen. Site 3 was scored low on the criterion of “feeling of wanting more”.

Navigation was scored at 60.3%, 65.1% and 76.2% for Sites 1 through 3 respectively. Sites 1 and 2 did not have site maps and scored low on that criterion. The sites did not all return to the home page, so scores were low for that criterion as well.

Aesthetics scores were from 68.5%, 68.5% and 63%. Site 3 scored low on visually appealing presentation, clear intuitive goals and objectives. All the sites scored badly on Functionality adaptable to customer environment and on effective use of medium.

7.3.3.1.2 Site Functionality

Site Functionality has the same importance as Site Design and has a 25% weighting within the Overall Criteria and is composed and weighted as follows:

- Search (70%)
- Personalisation (20%)
- Security (10%)

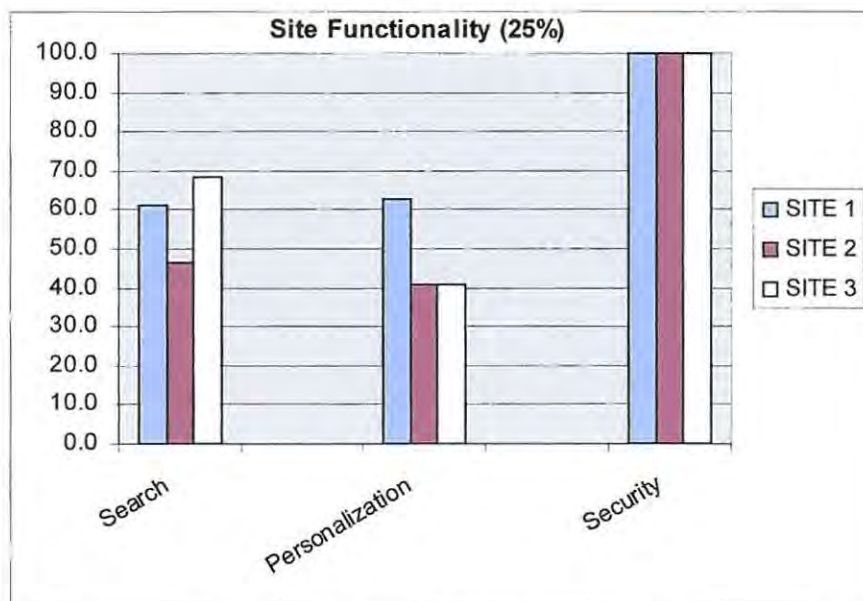


Diagram 7.3.3.1.2

(Site Functionality - Average Raw Scores)

Site Functionality was scored at 65.4%, 50.6% and 66.1% for Sites 1 through 3 respectively. (Table 7.3)

Diagram 7.3.3.1.2 reveals that the Search and Personalization criteria did not come up to expectations. However, the Security of the sites met all of the requirements on the evaluation tool and scored full marks.

The Search criteria scored low with scores of 61.1%, 46.3% and 68.5% for sites 1 through 3. The factors that produced the lowest scores were “Advanced search, multiple parameter” and “Sort Results”. One site did not sort any of the results at all, although the site offers the capacity to include up to 99 beneficiaries. The beneficiaries are stored and displayed in the order in which they were entered into the system. None of the bank sites were very intuitive in terms of searching for functions and features.

Personalisation attained the lowest results of all the criteria for all of the sites with scores of 63.0%, 40.7% and 40.7% for sites 1 through 3 respectively. The ability to create “my site” which is linked to IP sensing, was achieved on Site 1. There is no ability to create a user profile during the internet banking session on any of the sites. The sites did not match the level of user sophistication that one would expect on a service that is offered to the banking public.

Security criteria included the need to register for membership and the ease with which security and privacy policies can be found and the clarity of statement. These criteria were all met and the scores for Security were 100% for all three sites. The response to the questions in this section of the questionnaire required a yes/no answer with a 1 or a 0 response.

7.3.3.1.3 *Customer Value*

Customer Value has a 50% weighting within the Overall Criteria and is composed and weighted as follows:

- Content (30%),
- Product and Service Information (20%),
- Customer Service Support (35%),
- Contact Information (10%) and
- Investor Information (5%).

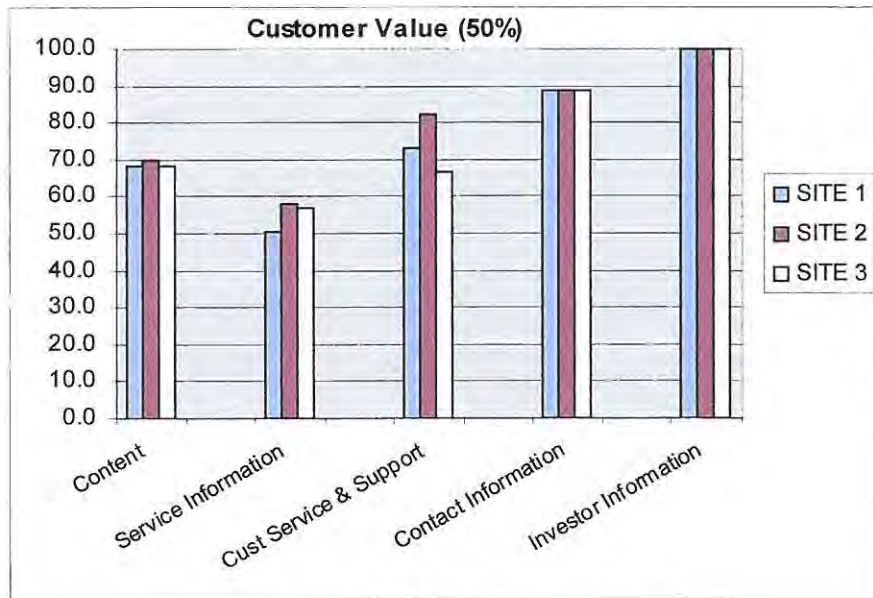


Diagram 7.3.3.1.3
(Customer Value – Average Raw Scores)

Customer Value was scored at 70.2%, 75.2% and 69.1% for sites 1 through 3 respectively. (Table 7.3)

Diagram 7.3.3.1.3 indicates that all the sites offered adequate contact and investor information. Content was relatively well covered with the scores very close. The Service Information scores were all in the range of 50% to 58% and Customer Service and Support had a wider range of 66.7% and 82.2%.

Content scores were all within a range of 68.3% to 69.8%. The criteria evaluated in this section are very subjective and include: relevance to target audience, timely, topical, fresh, credible, clear and concise wording, organisation and uncluttered/easily scanned. Concise wording and organisation both scored badly in all of the sites. Relevant to the target audience did not attract high scores. There is room for improvement on all the sites in all of these categories. Overall scores of below 50% were recorded for Clear and concise wording and Organisation, which includes clear headings and subheadings.

Service Information scored below 50% for several of the criteria. Several of criteria were not applicable to a banking Web site, so these questions were discounted in the survey. (This was done by scoring a 0 for the criteria and adjusting the totals accordingly). The criteria that were

deemed as relevant include: *product selection and availability, product pricing and descriptions, a new products page, product configuration and “easy to request more information”*. The “new products page” scored very badly and product pricing was not easy to find, so also rated low.

Customer and Service Support with a weight of 35% achieved scores of 73.3%, 82.2% and 66.7%. Criteria which were measured in this category are FAQ’s, Clear customer feedback mechanisms, Responsiveness and Demonstration Accounts. The Tool does not measure “online help”, which was in fact well featured on all of the sites. One of the sites did not have a demonstration account, but the online help and intuitiveness on that site was better than the other two sites. There were no particularly low scores in this category.

Contact Information scored 88.9% across the three banks and Investor Information achieved a score of 100%. The contact information was generally clear and easily found but lacked the ease to locate “nearest branch information”.

7.3.3.2 Industry Criteria

Industry Criteria has a 25% weighting within the **Total Site Score** and is composed and weighted as follows:

- Accounts (25%)
- Functions (75%)

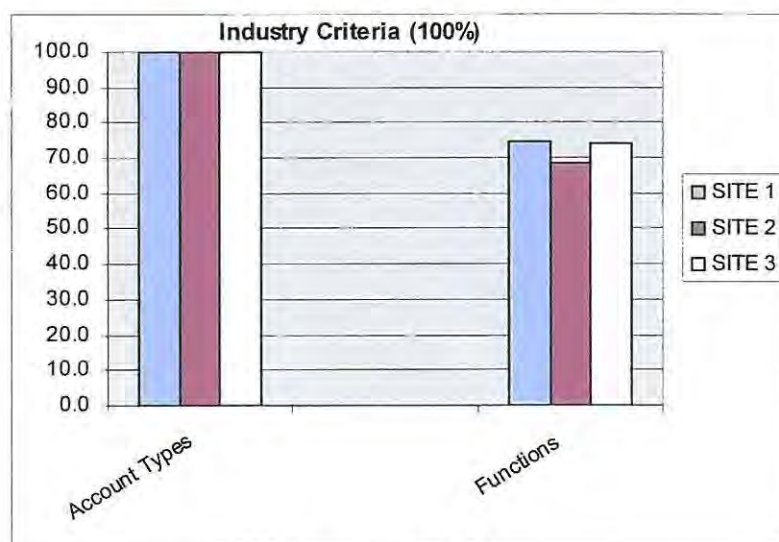


Diagram 7.3.3.2
(Industry Criteria – Average Raw Scores)

Industry Criteria scored 80.9%, 76.5% and 80.5% for sites 1 through 3 respectively. (Table 7.3)

The Account Types were scored at 100% for all three sites and the Functions scored 74.6%, 68.6% and 74.1% for Sites 1, 2 and 3 respectively.

Account types were measured with yes/no responses (1/0) and all of the accounts that were required by the questionnaire were present on each of the bank Web sites.

Functions that scored low in this category are “generate custom reports”, decision support functionality, calculator tools and create beneficiary. The problem with creating beneficiaries pertained to the sort problem that was discussed earlier. There was no decision support offered on any of the banking Web sites.

7.4 Conclusion

The results produced by the Adapted “Gartner” Web Evaluation Tool have been displayed in numeric and graphical format and discussion around the summary and details scores has taken place. A high level summary presented the scores for Overall Criteria and Industry Criteria which included Site Design, Site Functionality, Customer Value, Account Types and Functions. Each of these criteria was further broken down into the components that were measured and the results of which were displayed in tables and graphs.

Site 3 scored the highest overall with Site 1 scoring the second highest and Site 2 the lowest. Site 3 scored the highest for Overall Site Criteria and for Industry Criteria.

Chapter 8

Discussion of Findings and Recommendations

Abstract

The findings of the bank Web site evaluations were presented in Chapter 7. This chapter offers recommendations based on these findings. Discussion and suggestions are also presented from the observations and experiences gained during the evaluation process.

8.1 Introduction

The final scores of the evaluations of the bank Web sites were all within a very close range. Many of the criteria evaluated had similar scores, high or low, across the different bank Web sites. There are, however, several criteria where the scores varied significantly across the banks. This indicates that each of the banking Web sites have some good aspects and some bad aspects, which should be acknowledged in order to improve each site.

Firstly, the criteria for which all the Web sites attained a common high or a common low score are identified. These indicate the good and poor Web site design aspects of the banks in general. Secondly, the criteria which attained diverse scores for the different Web sites are identified to show the good and poor design aspects of each particular bank. Finally, the criteria which are believed to be the most essential aspects of bank Web site design are produced.

8.2 Findings based on the Web Evaluation Tool

The three Web sites that were measured using the “Gartner” Web Evaluation Tool have produced final results all within a very close range. However, in the opinion of the researcher, Site 2 which scored the lowest overall had the most visually appealing interface. Site 1 had the second best visual appeal and Site 3 was relatively bland, leaving the researcher with a feeling of disappointment. The overall impression of the Web sites was very positive.

General findings resulting in good and poor Web site design common to all of the Web sites are discussed. Results indicating features where an individual site excelled or failed are identified and examined to identify the criteria that were responsible for the resulting good or poor effect on the Web site.

8.3 *General findings for all sites*

8.3.1 *Overall Criteria*

The Overall Design includes Site Design, Site Functionality and Customer Value. The scores for Overall Design were in the range of 67.4% to 69.9%. (See Table 7.3)

8.3.1.1 *Site Design*

Aspects of Site Design include Good first Impression, Navigation and Aesthetics. The overall scores for Site Design were in the range of 63.8% to 75.5%. (See Table 7.3)

General aspects of good Site Design displayed by all of the sites include:

- Simple address URL made it easy to find the site.
- For each site, the Title was immediately seen and recognised.
- The Home Page(s) were very quick to appear.
- Contact details were clearly and easily obtained
- A search Tool was evident in all of the sites
- Sites do help users to recover from errors
- A consistent look and feel across the pages was evident
- Consistent Branding was evident throughout

General aspects of poor Site Design displayed by all of the sites follow:

- Registration is generally not that straightforward
- Segment specific links
 - Multiple navigation paths or sections were not available for different kinds of users, for example, experienced vs. novice.

-
- Navigation is not always easy, as the function names are not obvious. Only one site had a site map that was evident.
 - Sites do not always prevent errors, and trial and error is the only way that users find out the format of some of the inputs (for example, when entering an amount to be paid)
 - Functionality is not adaptable to customer environment on any of the sites.
 - Different options were not available for different customers (for example, pages with high graphics for high speed users and low graphics for low speed users)
 - Evidence of effective use of medium was not apparent, and very little interaction takes place.

8.3.1.2 *Site Functionality*

Aspects of Site Functionality include Search, Personalisation and Security. The overall scores for Site Functionality were in the range of 50.6% to 66.1%. (See Table 7.3)

General aspects of good Site Functionality displayed by all of the sites include:

- The outcome of a search parameter did produce consistent results.
- Ubiquitous search in as much as the functions offered did respond to the correct functionality.
- Security appears to be sound and several security aspects are evident. These differ on all of the sites.

General aspects of poor Site Functionality displayed by all of the sites include:

- Search is not always intuitive
- The sites do not match user sophistication level
- No ability to create user profile during a “banking” session, although one of the sites did allow a user profile from the Home Page.

8.3.1.3 Customer Value

Aspects of Customer Value include Content, Product or Service Information, Customer Service & Support and Contact & Investor Information. The overall scores for Customer Value were in the range of 69.1% to 75.2%. (See Table 7.3)

General aspects of good Customer Value displayed by all of the sites include:

- The content appears to be timely, topical and fresh. However, there was an instance where bank charges were out of date for one of the sites.
- The content appears to be credible.
- The content within a banking session is uncluttered.
- Good product selections are offered.
- It is easy to request more information
- FAQ's are well supported
- Customer feedback mechanisms are clear and adequate
- Responsiveness to queries is good
- Online help is adequate
- Hours of operation are clearly indicated
- Investor Information is readily available
- Press & News Releases are available on all of the sites.

General aspects of poor Customer Value displayed by all of the sites include:

- Wording on the page is not always clear and concise, which leads to wrong function choices
- Organisation is not clear –
 - Headings and subheadings do not clearly indicate the function
- No new products page was evident on any of the sites
- Product configurations are not very clear, and the user has to hunt to find these.
- Nearest dealer information is not easy to find, although it is amongst the rest of the contact information.

8.3.2 Industry Criteria

Aspects of Industry Criteria Include Account Types and Functions. The scores for Industry Criteria were in the range of 76.5% to 80.9%. (See Table 7.3)

8.3.2.1 Account Types

Criteria in this category include a list of account types that should be offered by banks with a yes/no answer required. All of the account types listed were present on the Web sites which were evaluated.

8.3.2.2 Functions

Functions were not broken down into any further categories and include a list of functions that would normally be expected during Internet Banking. These were rated on a 1-9 point Lickert scale.

General aspects of good Industry Criteria displayed by all of the sites include:

- Many Accounts types are on offer on the bank Web sites
- Application can be made for a loan
- Loan approval notification is provided
- Users can view account history, update and change account information, change personal information and stop payments.
- It is easy to transfer funds
- Charge rates are provided for various account types
- Financial news is provided on the Home sites
- Pre-Paid Cell phones can be directly “filled up”
- Stop Orders can be invoked

General aspects of poor Industry Criteria displayed by all of the sites include:

-
- Customers are able to open new accounts, but this is not an easy task, and details are requested about customers which are already in the system.
 - Custom reports cannot be generated
 - No decision support functionality is offered.
 - Interest rates are poorly displayed and difficult to read.
 - Rates and Charges are not clearly distinguished for different accounts.

8.4 Specific Findings for each individual site

8.4.1 Site 1 (Absa Bank)

The Site Total for *Site 1* is 70.8% with 67.4% for Overall Criteria and 80.9% for Industry Criteria. (See Table 7.3)

Aspects, specific to *Site 1*, of good Web site design for both Overall and Industry Criteria follow:

- The site is visually appealing and there is generally a sense of wanting to stay on the site to investigate further options
- Search results for accounts and beneficiaries can be sorted
- Home Page can be customised
- IP sensing is employed, that is, the user is acknowledged by name when entering the Home Site
- Demonstration Accounts are available

Aspects, specific to *Site 1*, of poor Web site design for both Overall and Industry Criteria include:

- The Home Page is not on one page and scrolling is necessary
- A site map could not be found and it is assumed that it is not available
- Not always easy to return to the Home Page from any page
- The goals and objectives are not always clear and intuitive
- No advanced search with multiple parameters is offered.

8.4.2 Site 2 (Standard Bank)

The Site Total for **Site 2** is 69.9% with 67.7% for Overall Criteria and 76.5% for Industry Criteria. (See Table 7.3)

Aspects, specific to **Site 2**, of good Web site design for both Overall and Industry Criteria follow:

- The site is visually appealing and there is generally a sense of wanting to stay on the site to investigate further options
- Home Page is on one screen - no scrolling is required
- The goals of the site are clear and intuitive.
- Product descriptions are clear and concise.
- Demonstration Accounts are available.

Aspects, specific to **Site 2**, of poor Web site design for both Overall and Industry Criteria follow:

- Not clear how to return to Home Page from anywhere on the site.
- A site map cannot be found
- No advanced search parameters
- Search results for Accounts and Beneficiaries cannot be sorted. This is a particular weakness which has a very simple solution.
- Multiple beneficiaries can be paid. However, no individual deposit slips are produced, which makes it difficult to fax a copy of the deposit slip to the beneficiary.
- The home site cannot be customised or personalised

8.4.2 Site 3 (First National Bank)

The Site Total for **Site 3** is 72.6% with 69.9% for Overall Criteria and 80.5% for Industry Criteria. (See Table 7.3)

Aspects, specific to **Site 3**, of good Web site design for both Overall and Industry Criteria follow:

- Good site map is available to help with navigation

- Ability to clearly return to Home Page from any page (with a warning)
- Search results of accounts and beneficiaries can be sorted throughout.
- Advanced search parameters are available.
- Very good online help is available.

Aspects, specific to *Site 3*, of good Web site design for both Overall and Industry Criteria follow:

- No sense of feeling that one would like more. The site lacks excitement.
- Site is not visually appealing and though is very functional, it is bland.
- Goals and objectives are not very intuitive, giving the sense of a poor site.
- The Home Page cannot be personalized or customised.
- No indication of IP sensing.
- Product descriptions are not very clear, and the user has to investigate to see what is on offer.
- Demonstration Accounts cannot be found

8.5 Essential aspects suggested for inclusion in "online" Banking Web sites

There are many things that need to be considered when designing a Web site. Many of these are included in the previous readings. The three South African Internet banking sites evaluated have included many valuable and essential criteria in their designs which should not be ignored. The following essential aspects, however, should be applied to all Banking Web sites to make them more functional and visually appealing.

1. The Home Page should be on one screen to avoid any scrolling, vertical or horizontal.
2. A well documented, and easy to find, site map should be available to help the user to feel comfortable with the layout of the site. (It is important that the user does not feel lost at any time.)
3. "Return to Home Page" from within an "internet banking session" should be very carefully managed and the user must be asked whether they want to "leave" the banking session.

4. Headings and sub-headings should have meaningful names and be broken down into logical categories. (Abbreviations and acronyms should be avoided). This will enable Menu and function options help the user find what they want more easily.
5. **Type 4** layout as seen in **Diagram 8.5** is believed to be the clearest site layout. It is recommended that this particular layout is followed.



Diagram 8.5 (Type 4 Design)

6. The option to sort beneficiaries, accounts and any other groups of items that are used is essential and search features should be used wherever possible.
7. Security features should include the option of SMS notification for all online and offline banking transactions.
8. A page or table displaying all of the current products and new products with their interest rates and charges should be a standard function.
9. Demonstration accounts should be available and easy to find. These should be available on the Home Page and should include a start-up, step by step demonstration on how to register and what is required for the registration process.
10. Contact Information should be provided with the option of a map of the country so that users can select an area in which they would like information. The nearest branch can be highlighted, if a map is used.
11. Users should be able to print individual deposit slips to be faxed to beneficiaries should multiple payments be made.
12. Customers should be allowed to give notice on notice accounts and denote an internal account to which the money should be transferred.
13. Stop Payment and Cancel Cheque functions should be easy to find and be treated as a separate high level function.

8.5 Conclusion

General and specific findings identified areas of good and poor online banking Web site design. These areas include aspects within all of the categories in the questionnaire. The good and bad design practices for each bank site are identified. Essential features which are believed should be included in Banking Websites in South Africa have been proposed.

Chapter 9

Conclusion

9.1 Introduction

Business conducted on the Internet has become an essential part of most organisations. Internet banking is a way of life for many bankers, but there are millions of people who have not yet taken the plunge to register online. A small percentage of the South African population bank online, which leaves huge potential for more Internet bankers in South Africa. A suitable Web site is the most important contributor which will encourage people to use the Internet, and will assist in the success of online business. Building good Web sites requires an understanding of the business functions, the customers who will be using the site, and a sound knowledge of the Human Computer Interaction (HCI) guidelines and principles. Web evaluation Tools exist that incorporate many of the HCI guidelines and principles to ensure that Web site designs are appropriate for their intended use. The application of Web Evaluation Tools helps identify aspects to improve on the site design.

General HCI principles and guidelines were studied, and perceived Web design problems were considered, in order to understand the concepts of building good Web Sites. Consumer expectations and problems encountered by Internet bankers were identified together with the features offered by banks in South Africa and in the USA. With this information, a Web Evaluation Tool was selected to evaluate three banking Web sites in South Africa. Results and findings of the evaluation showed that ABSA, Standard Bank and First National Bank have met most of the evaluation criteria. However, there are several aspects of these Web sites that can be improved.

9.4 Results and Findings

- Web Design Principles and Guidelines are very similar to general HCI Principles and Guidelines with few additions relating to business and online features.

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- There are approximately one million online bankers in South Africa which represents only 2-3% of the South African population which is minimal compared to more than 20 million online bankers in the USA.
 - Web Evaluation can be carried out effectively with suitable Web site Evaluation Tools. The “Gartner” Web Evaluation Tool, used in this study, incorporates Industry Criteria for the financial sector, and is suitable to be used to evaluate Bank Web sites.
 - ABSA, Standard Bank and First National Bank have successfully met many of the evaluation criteria, but can improve their sites by including the essential features described in Section 8.5.
 - Home page on one screen
 - Good documentation and easy to find site map to help with navigation
 - Return to home page from anywhere
 - Headings and subheadings must have meaningful names
 - Type 4 layout is recommended
 - Option to sort beneficiaries and accounts
 - Security features to include SMS notification
 - New Products Page
 - Demonstration Accounts to be provided
 - Contact information to be provided
 - Individual deposit slips for multiple beneficiaries
 - Notice on notice deposits
 - Stop payment and cancel cheque option should be easy to find

9.3 *In Closing*

It was assumed at the outset of this research, that problems might exist in the design of online Banking Websites in South Africa. Although there are fewer online bankers in South Africa than there are in USA and other more developed countries, the three SA Banking Web sites evaluated have reached a more advanced level of sophistication than was anticipated. With the aid of Web Evaluation Tools, these Banking Web sites can be improved to meet the expectations of current and future customers of Internet Banking.

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Appendix A:

Software Evaluation Criteria (4); Web site Evaluation Tool

A Web Evaluation tool, developed by Virginia Community College, called the “Software Evaluation Criteria (4); Web site Evaluation Tool” consists of a checklist which can be used to evaluate a Web site. This tool would probably be useful during the design process or ongoing evaluation check for the designer to ensure that the design is complete and is suitable for the intended audience. This tool would assess only one Web site at a time and does not offer any comparative tables and graphs for analysis.

The checklist proposed by the Virginia Community College includes the following items:

- URL address
- Sponsor
- Purpose (Educational, Informational, Discussion/forum, Entertainment, Corporate/commercial, Other)
- Intended Audience, Information provided (Links to resources provided? Links have description or summaries, Links are good, Copyright status, Content/information, Accurate, Unbiased, Current, Load time, Searchable, Awards, Web master contact info, Grammar & Spelling correct),
- Design/technical aspects (Useful headings/subheadings, Clear Labeling, Logical organisation, Consistent design throughout, Print Options, Text Options, Appropriate use of Graphics, Video & Sound?),
- Directions on downloading applications to use Web site features, Navigation (Ease of movement through pages – forward, back & home, Exit Options, Links work, Search capabilities),
- Interactive features,
- Other features,
- Unified Web Accessibility Guidelines.

Appendix B

Richard Waller's Seven Point Checklist

NEW SEVEN-POINT CHECKLIST
How good is your website?

- Good First Impression**
- Friendly Image**
- Easy Navigation**
- Useful Content**
- Appropriate for Audience**
- Clear Contact Information**
- Good for Search Engines**

See following page for the questionnaire.

RICHARD WALLER WEBSITE EVALUATION ,(Waller, 2001b)

Seven Point Checklist		
1. Good First Impression <input type="checkbox"/> Simple address URL <input type="checkbox"/> See title immediately <input type="checkbox"/> Content in eight seconds <input type="checkbox"/> Attractive	4. Useful Content <input type="checkbox"/> Clear Objective <input type="checkbox"/> Clear target audience <input type="checkbox"/> Clear target area <input type="checkbox"/> Quality content <input type="checkbox"/> Organisation of content <input type="checkbox"/> Regularly updated <input type="checkbox"/> Useful links	<u>Things not to have</u> <input type="checkbox"/> Entrance Tunnel <input type="checkbox"/> Compulsory Music/video <input type="checkbox"/> Scrolling Text <input type="checkbox"/> Frames on Homepage <input type="checkbox"/> Frames generally <input type="checkbox"/> Complex Forms <input type="checkbox"/> Adverts and Pop-ups <input type="checkbox"/> Flashing things <input type="checkbox"/> Compulsory plug-ins <input type="checkbox"/> Large images <input type="checkbox"/> Unnecessary images <input type="checkbox"/> Required images <input type="checkbox"/> Images as links <input type="checkbox"/> Unsized images <input type="checkbox"/> Useless ALT= tags <input type="checkbox"/> Fussy backgrounds <input type="checkbox"/> Unnecessary JavaScript <input type="checkbox"/> Browser Warnings <input type="checkbox"/> 640 display problems <input type="checkbox"/> Broken Links <input type="checkbox"/> Under Construction <input type="checkbox"/> Text as images <input type="checkbox"/> Inconsistent Styles <input type="checkbox"/> Centred Text <input type="checkbox"/> Deep Pages
2. Friendly Image <input type="checkbox"/> Key info above the fold <input type="checkbox"/> Easy to read <input type="checkbox"/> Images are useful <input type="checkbox"/> Images to have ALT= <input type="checkbox"/> 640-display friendly <input type="checkbox"/> Printer friendly <input type="checkbox"/> Technically Sound	5. Appropriate for Audience <input type="checkbox"/> Appropriate style and tone <input type="checkbox"/> Access for disabled <input type="checkbox"/> Easy order-processing	
3. Easy Navigation <input type="checkbox"/> Clear structure <input type="checkbox"/> Clear text links <input type="checkbox"/> Consistent <input type="checkbox"/> Search Tool and Sitemap	6. Clear Contact Information <input type="checkbox"/> Branding on every page <input type="checkbox"/> Contact on every page <input type="checkbox"/> Name, address, phone	
	7. Good for Search Engines <input type="checkbox"/> Good META statements <input type="checkbox"/> Clear text with keywords <input type="checkbox"/> Clear text links	

Richard Waller's 7 Point checklist is listed below with his explanations.

1. Good First Impression

1.1 Simple address URL

A domain name simple enough to tell a person at the bus stop

1.2 See title immediately

See something almost immediately

Show the selling message now

Show objective or Unique Selling Proposition

1.3 See substantial text content in eight seconds

Avoid using images for text

1.4 Attractive

Make each visit a pleasurable experience

2. Friendly Image

2.1 Show key info above the fold

Only 30% of visitors will scroll down the page

2.2 Easy to read

Avoid lines of text too long for easy reading

Ensure contrast between text and background

Appropriate fonts and sizes

2.3 Images are useful

Images should contribute to the content and not be just decoration

2.4 Images to have ALT= and be sized

In case the visitor has his images turned off or the internet is slow

Explain what this picture supposed to tell

Images must be sized for speed of loading and avoid juddering of the page

2.5 640-display friendly

Horizontal scrolling is a no-no

Must contract elegantly for visitors with small browser windows

or computers with small displays or visitors who have opted for larger fonts

Ensure frames allow enough space for meaningful text

2.6 Printer friendly

640-friendly applies here too.

Mixed text light-on-dark on same page as dark-on-light will not print

If printing is important, use tables so that page breaks will occur correctly

Avoid frames unless absolutely appropriate as they are difficult to print

2.6 Technically Sound

Works with IE and with Netscape

Avoid spelling mistakes, poor punctuation, poor grammar

No broken or missing links

No 'under-construction' pages

3. Easy Navigation

3.1 Clear structure

Ensure the site has structure

Minimise number of links on the homepage, 10 is the max.

Too many links will confuse the first time visitor

Links to key pages are above the fold

Useful content within three clicks of the homepage

3.2 Clear text links

Additional text links at the bottom of each page

Links should look like links

3.3 Consistent

Navigation should be consistent though out the site

Clear description of where the link goes to

Avoid drop-down or clever pop-up menus

If links are JavaScript then alternatives provided

External links should show URL and should tell what will be found there

3.4 Search Tool and Sitemap

Provide a sitemap and a website search tool if more than 7 pages

4. Useful Content

4.1 Clear Objective

What is the website trying to sell me

How will it make money for the owner

4.2 Clear target audience

Who will want to look at this site

What age group

Appropriate tone for the target audience

4.3 Clear target area

What geographic area are we talking about

4.4 Quality content

There is some meat in there

Educational, Entertaining, or Expedient way of presenting the product

Something which will encourage visitors to come back

A source of reference information or useful links

4.5 Good Organisation of content

4.6 Regularly updated

It must be current

No out of date items

4.7 Useful links

Links to useful information add credibility

5. Appropriate for Audience

5.1 Appropriate style and tone

5.2 Access for disabled

If appropriate, according to Bobby rules

5.3 Easy order-processing

E-Commerce sites to obey accepted rules

Provide clear security for On-Line Payment

6. Clear Contact Information

6.1 Branding on every page

Consistent headings to give brand image

Consistent layout of pages for each topic

Show domain name URL to reinforce image

6.2 Contact Email on every page

6.3 Name, address, phone

Why have a website if it is difficult for your visitors to contact you?

6.4 Name, Address, Telephone, Fax, Email all on the homepage

If complex, very clear links to the contact page

7. Good for Search Engines

7.1 Good META statements

Useful and descriptive TITLES on all pages

Correct META's at least on the first (index) page

7.2 Clear text with keywords

Text on the homepage shows key words

7.3 Clear text links

Clear links to other pages

Things not to have

Websites can be made very pretty with flashing things, music, animation, pop-ups, and drop downs. For those that like that sort of thing, that is what they like. But for the rest of us they are no-no's.

Twenty six common faults follow:

1. **Entrance Tunnel** (a flashy page before you are allowed to see the homepage) - even for a useful purpose such as to choose a language, there has got to be a better way of doing this.
2. **Compulsory Music or video** - before having the visitor download music or video, please ask his permission. And if he doesn't want it, provide a text alternative
3. **Scrolling Text** - Either the text is important enough to be read properly, or it is just eye-candy and is an unnecessary distraction. See also Flashing Things (below)
4. **Frames on the Homepage** - frames will confuse the search engines and slow up the loading. It is easy to give the same effect with tables if that is what you need.

-
5. **Frames generally** - it is difficult to print the content, difficult to page back, impossible to bookmark, and confuse voice browsers. And often there is not enough space in the content area to give useful information. They may be useful if there is a range of short sharp messages, perhaps for the names and addresses of branches, but even then I doubt it.
 6. **Complex Forms** - the rule should be to ask the minimum amount of information necessary for the immediate objective. Ask a lot of questions and many visitors will give up.
 7. **Adverts and Pop-ups** - avoid unless they are really paying you a lot of money. Particularly flashing adverts. Or pop-up windows whether adverts or any other.
 8. **Flashing things** - play havoc with the peripheral vision for many users, a significant amount of mental effort has to be devoted to seeing the content round the flashing.
 9. **Compulsory plug-ins** - very few visitors are going to take the time to download a plug-in. Perhaps you could offer this on a page within the site if really necessary.
 10. **Large images** - only justified on an art page, and even then a small thumbnail would probably be better, with the big picture only on request.
 11. **Millions of Colours** - some people have browsers set for only 256 colours. Some images look awful when viewed this way. Key images such as navigation should not have complex colours.
 12. **Unnecessary images** - a picture is worth a thousand words, but only if it contributes to the content.
 13. **Required images** - some visitors will surf with images turned off to speed up the access. It would be nice if they can get the flavour of the site when they do this.
 14. **Images as links** - using images maps or Javascript for links, you should also have text links perhaps at the bottom of the page. This will help the search engines and also visitors who are not using images or Javascript.
 15. **Unsize images** - if an image does not have the height and width, then the text will either jump when the image is loaded, or the text will not display until all the images in that area have been loaded.

-
16. **Useless ALT= tags** - All images should have ALT= tags so the visitors can see what they are waiting for. But the ALT= information should be meaningful and give useful information.
 17. **Fussy backgrounds** - if you use background images they should be less than 8K, and contrast well with the colour of the text. Some printers can be set to ignore backgrounds, so check that the text can be read without the background.
 18. **Unnecessary Javascript** - it is possible to do all sorts of things with DHTML and JavaScript. But it takes time to load, and often conceals vital information if the visitor decides not to allow such things.
 19. **Browser Upgrade Warnings** - 'best viewed with' is a common message. But what browser the visitor has is his own decision. He will not take kindly to being told he should upgrade. Your website should allow the pages to degrade elegantly when used with other browsers.
 20. **640 display problems** - Some web pages have fixed width and are truncated or require a horizontal scroll when used with displays or display windows of less than the design width, or when printed. Text should contract to cater for smaller windows.
 21. **Broken Links** - external links do disappear and that is a pity. But all internal links should work - if you drop a page or change its name, leave the old page there with an automatic transfer to a new page. And avoid spelling mistakes please.
 22. **Under Construction or Watch this Space** - if a page is not ready to be seen then do not link to it.
 23. **Text as images** - images cannot be copied, searched, referenced by search engine spiders, read by voice browsers. And it takes too much time to load.
 24. **Inconsistent Styles** - every page should have the same look and feel, consistent navigation, consistent branding, consistent colours and fonts.
 25. **Centred Text** - OK for some headings, but visitors expect content text lines to begin at a left margin.
 26. **Deep Pages** - enough is enough. Start a new page for each new topic. If it must be a long page, then at least provide lots of sub-headings, and links to those headings in a list of contents.

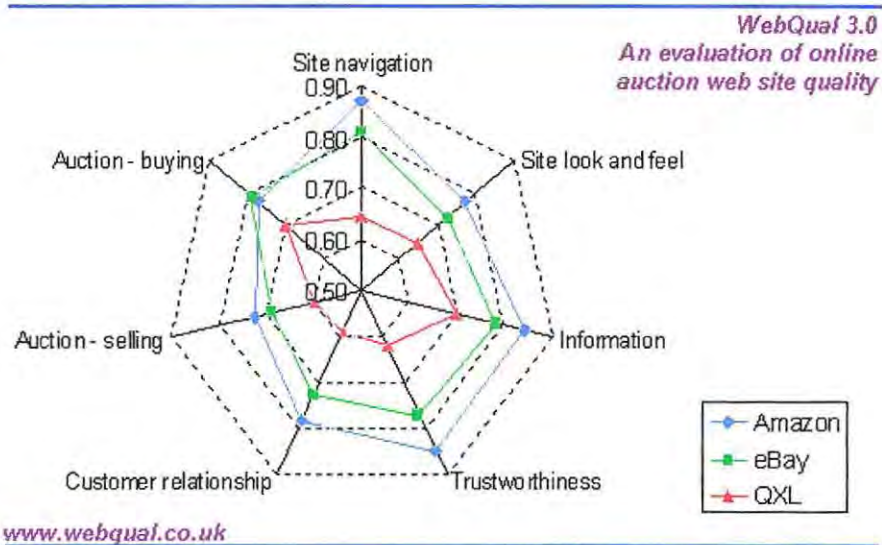
Appendix C

WebQual™

WebQual 4.0 is a generalized instrument that has been strengthened by making heavier use of existing literature on web usability. We use a 1 to 7 scale to assess the user rating of the quality and a 1 to 7 scale to assess the importance of the quality to the user.

Loiacono (Loiacono, E T, 2000) states that it is possible to make changes to the tool and alternate the different measurements

A diagrammatic view of the Web Tool as was found on the Web for an evaluation of three Websites.



Quality	Description
Usability	
1	I find the site easy to learn to operate
2	My interaction with the site is clear and understandable
3	I find the site easy to navigate
4	I find the site easy to use
5	The site has an attractive appearance
6	The design is appropriate to the type of site
7	The site conveys a sense of competency
8	The site creates a positive experience for me
Information Quality	
9	Provides accurate information
10	Provides believable information
11	Provides timely information
12	Provides relevant information
13	Provides easy to understand information
14	Provides information at the right level of detail
15	Presents the information in an appropriate format
Interaction Quality	
16	Has a good reputation
17	It feels safe to complete transactions
18	My personal information feels secure
19	Creates a sense of personalization
20	Conveys a sense of community
21	Makes it easy to communicate with the organization
22	I feel confident that goods/services will be delivered as promised
Overall impression	
23	What is your overall view of this Web-site

[Home—Questionnaire—Demo—Papers](#)

Appendix D

The "Gartner" Web Evaluation Tool

Gartner Web Evaluation Tool

Evaluator
Name:
Survey Date:

Firm	Firm Name	Web Address (URL)	Industry
1		http://	INDUSTRY LIST ▼
2		http://	INDUSTRY LIST ▼
3		http://	INDUSTRY LIST ▼

Complete company information on this tab to the extent possible. Then go to "Overall Criteria" and "Industry Criteria" to complete your assessment of the web site.

Choose segment where available. If individual segments are not applicable, code as overall category

© 2000 Gartner Group, Inc.

Gartner Web Evaluation Tool_		ANALYST RATING			
		SITE 1	SITE 2	SITE 3	SITE N
CRITERIA		Type site 1 Firm Name Here	Type site 2 Firm Name Here	Type site 3 Firm Name Here	Type site N Firm Name Here
1	Site Design				
1.1	Navigation				
1.1a	Site Map --structure clearly communicated				
1.1b	Ease of / straightforward navigation				
1.1c	Segment-specific navigation				
1.1d	Error statements/broken links encountered?				
1.1e	Site prevents errors / helps users recover				
1.1f	Did the site launch additional browsers?				
1.1g	Did the site use pop up windows/interstitials?				
	<i>Sub-Total</i>	0	0	0	0
	<i>Weighted Sub-Total</i>	0	0	0	0
1.2	Aesthetics				
1.2a	Visually appealing presentation				
1.2b	Clear, intuitive goals & objectives				
1.2c	Effective use of medium				
1.2d	Consistent look and feel across pages				
1.2e	Consistent branding				
1.2f	Functionality adaptable to customer environment				
	<i>Sub-Total</i>	0	0	0	0
	<i>Weighted Sub-Total</i>	0	0	0	0
	TOTAL WEIGHTED SITE DESIGN	0	0	0	0
	Percent of Total Possible	0%	0%	0%	0%
2	Site Functionality				
2.1	Search				
2.1a	Ubiquitous search				
2.1b	Results consistent with search parameters				
2.1c	Advanced search, multiple parameters				
2.1d	Relevancy ratings on results				
2.1e	Sort results				
	<i>Sub-Total</i>	0	0	0	0
	<i>Weighted Sub-Total</i>	0	0	0	0
2.2	Personalization				
2.2a	Matches user sophistication level				
2.2b	Ability to create "my site"				
2.2c	Ability to create user profile				
2.2d	User-defined e-mail subscriptions/newsletters				
2.2e	Indications of IP sensing (e.g. ad content, hello)				
2.2f	Community, discussion forums, message boards				
2.2g	Downloads to other devices (e.g. phones, PDAs)	0,1	0,1	0,1	0,1

		<i>Sub-Total</i>	0	0	0	0
		<i>Weighted Sub-Total</i>	0	0	0	0
2.3	Security					
2.3a	Registration/membership required?		0,1	0,1	0,1	0,1
2.3b	Security policy easily found?		0,1	0,1	0,1	0,1
2.3c	Security policy clear?		0,1	0,1	0,1	0,1
2.3d	Privacy policy easily found?		0,1	0,1	0,1	0,1
2.3e	Privacy policy clear?		0,1	0,1	0,1	0,1
		<i>Sub-Total</i>	0	0	0	0
		<i>Weighted Sub-Total</i>	0	0	0	0
TOTAL WEIGHTED FUNCTIONALITY			0	0	0	0
Percent of Total Possible			0%	0%	0%	0%
3	Customer Value					
3.1	Content					
3.1a	Relevant to target audience					
3.1b	Timely, topical					
3.1c	Fresh					
3.1d	Credible					
3.1e	Clear and concise wording					
3.1f	Organization (clear headings, subheadings)					
3.1g	Uncluttered/easily scanned					
		<i>Sub-Total</i>	0	0	0	0
		<i>Weighted Sub-Total</i>	0	0	0	0
3.2	Product or Service Information					
3.2a	Product selection					
3.2b	Product availability					
3.2c	Product pricing					
3.2d	Product descriptions are clear and concise					
3.2f	New products page					
3.2g	Featured items or promotions					
3.2h	Detailed descriptions are available, add value					
3.2i	Graphics, pictures are clear, add value					
3.2j	Product configuration					
3.2k	Cross selling/ Up selling					
3.2l	Decision support functionality					
3.2m	Product recommendations					
3.2n	Product comparison - w/ own products					
3.2o	Product comparison - w/ competitive products					
3.2p	Easy to "request more info"					
3.2q	Warranty information					
		<i>Sub-Total</i>	0	0	0	0
		<i>Weighted Sub-Total</i>	0	0	0	0
3.3	Customer Service & Support					
3.3a	Product use / technical manuals					
3.3b	Product support FAQs					
3.3c	Clear customer feedback mechanisms					
3.3d	Responsiveness					
3.3e	Multiple customer service media					

		<i>Sub-Total</i>	0	0	0	0
		<i>Weighted Sub-Total</i>	0	0	0	0
3.4	Contact information					
3.4a	Head office address, phone, e-mail					
3.4b	Other local office address, phone, e-mail					
3.4c	Hours of operation					
3.4d	Nearest dealer, distributor, rep or office					
3.4e	Dealer location and hours					
3.4f	Dealer/Service Center contact information					
3.4g	Links to dealers					
3.4h	Nearest repair/service center					
3.4i	Service center location and hours					
3.4j	Links to repair/service center					
		<i>Sub-Total</i>	0	0	0	0
		<i>Weighted Sub-Total</i>	0	0	0	0
3.5	Investor information					
3.5a	Annual Report	0,1	0,1	0,1	0,1	0,1
3.5b	Quarterly Financials	0,1	0,1	0,1	0,1	0,1
3.5c	SEC filings	0,1	0,1	0,1	0,1	0,1
3.5d	Analyst Reports	0,1	0,1	0,1	0,1	0,1
3.5e	Management Team	0,1	0,1	0,1	0,1	0,1
3.5f	Stock Quotes	0,1	0,1	0,1	0,1	0,1
3.5g	Press Releases	0,1	0,1	0,1	0,1	0,1
3.5h	News Releases (from outside media)	0,1	0,1	0,1	0,1	0,1
		<i>Sub-Total</i>	0	0	0	0
		<i>Weighted Sub-Total</i>	0	0	0	0
	TOTAL WEIGHTED CUSTOMER VALUE		0	0	0	0
	Percent of Total Possible		0%	0%	0%	0%

GRAND TOTAL OF OVERALL CRITERIA	0	0	0	0
Percent of Total Possible	0%	0%	0%	0%

WEIGHTED GRAND TOTAL OF OVERALL CRITERIA	0	0	0	0
Percent of Total Possible	0%	0%	0%	0%

Gartner Web Evaluation Tool					
	SITE 1	SITE 2	SITE 3	SITE N	
	Type site 1 Firm Name Here	Type site 2 Firm Name Here	Type site 3 Firm Name Here	Type site N Firm Name Here	
CRITERIA					
INDUSTRY CRITERIA					
E-tail (All E-TAILING SITES)					
E-Commerce - Transactions					
Ubiquitous throughout site					
Shopping cart					
Shopping cart retained across sessions?					
Wish list (to send to others)?					
Order process clear, intuitive					
Multiple payment options					
Supports external branded E-wallet					
Multiple shipping options (carriers, classes)					
Customer history - purchase history					
Customer history - shopping lists					
Affinity shopping (savings, points)					
Retains preferences/ One-click ordering					
Secure payment clearly articulated					
<i>Sub-Total</i>	0	0	0	0	0
E-Commerce - Fulfillment					
Concise order confirmation					
Confirmation includes contact information					
Confirmation includes estimated ship date					
Order status tracking					
<i>Sub-Total</i>	0	0	0	0	0
E-tail (BY SEGMENT)					
E-tail: Apparel					
Body "Models" (size, shape, coloring)					
Outfit/Wardrobe builder					
Recommendations					
Satisfaction guaranteed					
Ease of returns					
Wish list/Registry					
Birthday/Anniversary reminders					
<i>Sub-Total</i>	0	0	0	0	0
E-tail: Auctions/ E-Marketplaces					
Category variety					
Specialty/niche offerings					
Bid ceiling					
Incremental bid management					
Ongoing bid status					
Clear process/instructions					
Product information					
Seller information					
Buyer information					

Payment mediation (e.g. e-escrow)				
Dispute mediation/arbitration?				
Insurance				
Appraisal services?	0	0	0	0

E-tail: Computers, Hardware

Price				
Product specifications				
Options				
Packages/bundles				
Parts & accessories				
Related services (e.g. install, maintain, backup)				
Ease of returns				
Refurbished goods				
Break/Fix help				
Online warranty registration				
Extended warranty options				
Warranty claims management				
Financing options	0	0	0	0

E-Tail: Computers, Software

Price				
Product specifications				
Packages/bundles				
Electronic delivery				
Electronic upgrades				
Tech support				
Ease of returns				
Online warranty registration				
Upgrade alerts	0	0	0	0

E-Tail: Computers, Services

Installation	0,1	0,1	0,1	0,1
Maintenance	0,1	0,1	0,1	0,1
Asset management/retirement	0,1	0,1	0,1	0,1
Mission critical/high availability	0,1	0,1	0,1	0,1
Connectivity	0,1	0,1	0,1	0,1
Networking	0,1	0,1	0,1	0,1
Vendor selection	0,1	0,1	0,1	0,1
Case studies				
Bios				
Partners	0	0	0	0

E-tail: Consumer Electronics

Price	
Product specifications	
Options	
Packages	
Parts & accessories	
Related services (e.g. install, maintain, repair)	
Ease of returns	
Online warranty registration	

Extended warranty options				
Warranty claims management				
Financing options				
	0	0	0	0
E-tail: General Merchandise				
Price				
Product specifications				
Options				
Packages				
Parts & accessories				
Related services				
Ease of returns				
Online warranty registration				
Extended warranty options				
	0	0	0	0
E-tail: Gifts, Flowers, Food				
Birthday/Anniversary reminders				
Satisfaction guaranteed				
Ease of returns				
Wish list/Registry				
Scheduled delivery				
Gift wrap				
	0	0	0	0
E-tail: Groceries, Pharmacies, Health & Beauty Aids				
Groceries, Health and Beauty Aids				
On line couponing				
Loyalty programs				
Order for pick up				
Order for delivery				
Scheduled delivery				
Shopping list				
Related services (e.g. dry cleaning)				
	0	0	0	0
Pharmacies				
Doctor call-in for prescriptions				
Order for pick up				
Order for delivery				
Order for mail delivery				
Automatic replenishment				
Accepts insurance payments				
Provides/links to medical handbooks				
Provides/links to drug interaction information				
	0	0	0	0
E-tail: Kids				
Age/size guides				
Ease of returns				
Recommendations				
Wish list/Registry				
Birthday reminders				
Gift wrap				
	0	0	0	0

E-tail: Music, Videos, Books

Listen, view excerpts, samples				
Major & Minor Artists/Studios/Publishers				
Recommendations & Reviews				
Wish list/Registry				
Birthday/Anniversary reminders				
Gift wrap				
Ease of returns				
On line coupons	0	0	0	0
TOTAL E-TAILING SCORE	0	0	0	0

Financial Services (by segment)**FS: Retail Banking****Account Types**

Checking	0,1	0,1	0,1	0,1
Time deposit	0,1	0,1	0,1	0,1
Certificate of deposit	0,1	0,1	0,1	0,1
Mutual fund	0,1	0,1	0,1	0,1
Brokerage (trade securities)	0,1	0,1	0,1	0,1
IRA	0,1	0,1	0,1	0,1
Credit card	0,1	0,1	0,1	0,1
Mortgage	0,1	0,1	0,1	0,1
Other loans	0,1	0,1	0,1	0,1

Functions

Open new account				
Apply for loan				
Loan approval				
View account history				
Update /change account information				
Stop payment				
Consolidate multiple account statements				
Transfer funds				
Generate custom reports				
Bill payment				
Demo account				
Securities research				
Current quotes				
Decision support functionality				
News				
E-mail alerts/ Newsletters				
Technical customer support				
Calculator tools	0	0	0	0

FS: Investment Services**Account Types**

Checking	0,1	0,1	0,1	0,1
Cash management	0,1	0,1	0,1	0,1
Mutual fund	0,1	0,1	0,1	0,1
IRA	0,1	0,1	0,1	0,1
Margin accounts	0,1	0,1	0,1	0,1

Functions

Open new account				
View account history				
Update /change account information				
Apply for loan				
Loan approval				
Consolidate multiple account statements				
Transfer funds				
Bill payment				
News				
Securities research				
Generate custom reports				
Demo account				
Current quotes				
Decision support/ fin'l planning functionality				
Calculator tools				
E-mail alerts/ Newsletters				
	0	0	0	0

FS: Insurance**Types**

Automobile	0,1	0,1	0,1	0,1
Home	0,1	0,1	0,1	0,1
Tenant	0,1	0,1	0,1	0,1
Life	0,1	0,1	0,1	0,1
Health	0,1	0,1	0,1	0,1
Disability	0,1	0,1	0,1	0,1
Commercial	0,1	0,1	0,1	0,1

Functions

Multiple carriers				
Apply for coverage				
Policy approval				
View account history				
Update /change account information				
Consolidate multiple account statements				
Bill payment				
Forms				
Procedures				
Submit claims online				
Agent locator				
Repair/doctor locator				
Calculator tools				
Decision support functionality				
Side by side comparisons				
News				
E-mail alerts/ Newsletters				
	0	0	0	0

FS: Real Estate

Photos				
Panoramic views				
Multiple views of property				
Online purchase				
Mortgage-related content				
Mortgage application				
Decision support functionality				
Calculator tools				

Relocation services	0	0	0	0
---------------------	---	---	---	---

Government

Agency Information

Directory				
Mandate/areas of responsibility				
Contact information				
Directions				
Program information (e.g. training, benefits)				
Make appointments				

Official records

View personal accounts				
Update personal accounts				

Schools

Curriculum				
Districts				
Academic statistics				

Permitting/Licensing/Certification

View procedures				
Forms				
Apply for permits/licenses/certifications				
Fee payment				
Renewal				

Zoning

Laws, requirements, districts				
Liens/claims				

Judicial

Case status				
Pay fines				
Forms				
Submit forms				

Voting

Download application				
Submit application				
Update registration				

0 0 0 0

Healthcare

Account Types

Individual	0,1	0,1	0,1	0,1
Group	0,1	0,1	0,1	0,1
Pharmaceutical	0,1	0,1	0,1	0,1
Dental	0,1	0,1	0,1	0,1

Site Features

Decision support functionality				
Apply for coverage				
Provides/links to medical handbooks				
Provides/links to drug interaction information				
Repair/doctor locator				
Organizational/provider credentials				
Procedures				
Forms				
Submit claims online				
Offer feedback on a provider				
Update /change account information				
Calculator tools				

	0	0	0	0
Hospitality & Travel				
H&T: Hospitality				
Restaurant				
Make reservation				
Menu				
Wine list				
Hotel/Resort Room				
Available date				
Available room type				
Available view				
Reservation				
Hotel/Resort Amenities				
Amenity pricing (e.g. golf, spa)				
Make amenity reservation (e.g. golf, spa)				
Local transportation reservation				
Local transportation pricing				
Local attractions/tourist information				
	0	0	0	0
H&T: Airlines				
General Functions				
Make hotel reservation				
Make rental car reservation				
Ground transportation reservation				
Provides/links to destination information				
Retain prospective itinerary across sessions				
Retain multiple itineraries				
Make reservation (for future purchase)				
Purchase tickets				
E-ticketing				
Flight status				
Bargain fares				
Destination information				
Search Parameters				
Departure date	0,1	0,1	0,1	0,1
Departure time	0,1	0,1	0,1	0,1
Arrival time	0,1	0,1	0,1	0,1
Best fare, rate	0,1	0,1	0,1	0,1
Preferred carrier	0,1	0,1	0,1	0,1
Round trip	0,1	0,1	0,1	0,1
One way	0,1	0,1	0,1	0,1
Multi-leg				
Multiple concurrent search parameters				
Frequent Flyer Program				
View account balance				
Purchase with points				
Upgrade with points				
	0	0	0	0
H&T: Travel Agencies/Tours				
Auto rental	0,1	0,1	0,1	0,1
Limousine/taxi/ground transport reservations	0,1	0,1	0,1	0,1
Cruise	0,1	0,1	0,1	0,1
Bus	0,1	0,1	0,1	0,1
Make reservation (for future purchase)				
Retain prospective itinerary across sessions				
Retain multiple itineraries				

Purchase package				
Reserve options/optional activities				
Customer preferences				
Update reservation, preferences				
Travel/Tour Package				
Availability				
Local transportation reservation				
Pricing				
Search Parameters				
Date	0,1	0,1	0,1	0,1
Location/resort	0,1	0,1	0,1	0,1
Target market (e.g. families, skiers, etc)	0,1	0,1	0,1	0,1
Availability	0,1	0,1	0,1	0,1
Multiple concurrent search parameters	0	0	0	0
Manufacturing				
Price				
Product specifications				
Packages/bundles				
Parts & accessories				
Related services (e.g. install, maintain, backup)				
Financing options	0	0	0	0
News/Information/Entertainment Portals, Communities				
Intuitive taxonomy				
E-mail alerts/ Newsletters				
Archives				
Top stories				
Breaking news				
Expert commentary/editorial				
Regional interest				
Reference materials				
One stop shop				
Classifieds				
Shared interest discussion/chat/forums				
Stock quotes				
Shopping				
Free downloads (e.g. screen savers)	0	0	0	0
Games				
Membership plans				
Review games				
Multiple formats				
Exchange games				
Download games	0	0	0	0
Shipping, Delivery & Freight				
Shipment code by unique identifier				
Shipment tracking				
Signature presentment				
Schedule pick up				
Schedule delivery				
Drop off location finder				
Open account				

Order supplies				
Zip code locator				
Time zone maps				
View account history				
Update /change account information				
International shipping				
Related services (e.g. customs, insurance)				
	0	0	0	0
Utilities (Telecom, Cable, Electric, Fuel)				
<i>Service Provisioning</i>				
Open account				
Update /change account information				
View account history				
Bill payment				
Service appointments				
Relocation/moving services				
Configuration				
<i>Equipment Provisioning</i>				
Technical specifications				
Configuration				
Ordering				
Outage reporting				
Outage status				
	0	0	0	0
Total Industry Score				
	0	0	0	0

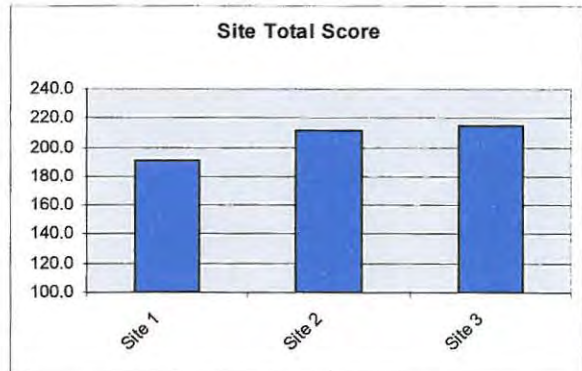
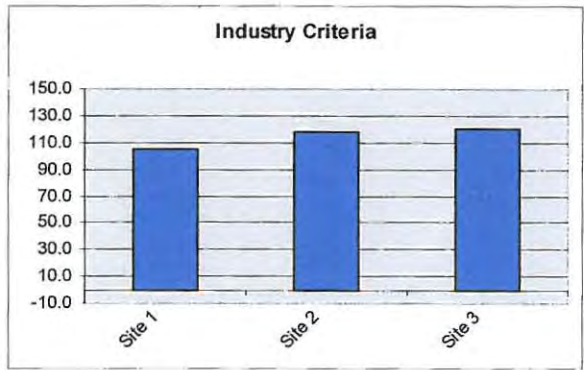
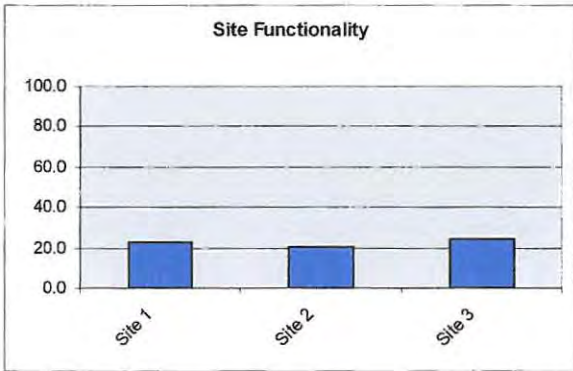
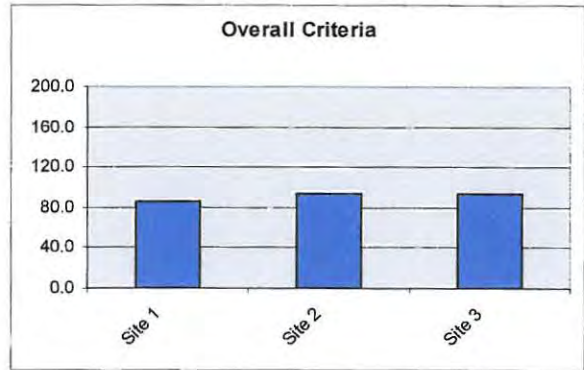
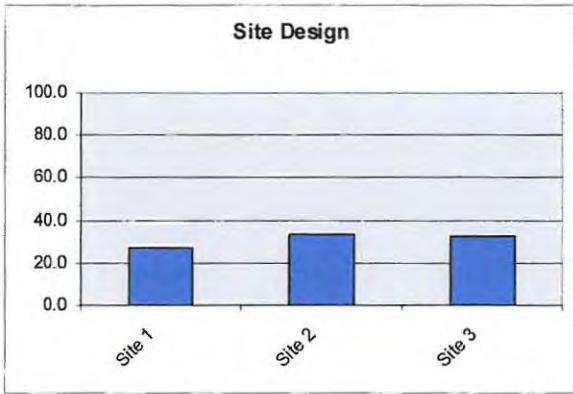
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	SITE 1	SITE 2	SITE 3		SITE 1	SITE 2	SITE 3
OVERALL CRITERIA	0	0	0		0	0	0
Site Design	0.0	0.0	0.0	25%	0.0	0.0	0.0
<i>Good First Impression</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>20%</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
<i>Navigation</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>65%</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
<i>Aesthetics</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>15%</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
Site Functionality	0.0	0.0	0.0	25%	0.0	0.0	0.0
<i>Search</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>70%</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
<i>Personalization</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>20%</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
<i>Security</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>10%</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
Customer Value	0.0	0.0	0.0	50%	0.0	0.0	0.0
<i>Content</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>30%</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
<i>Product or Service Information</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>20%</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
<i>Customer Service & Support</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>35%</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
<i>Contact Information</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>10%</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
<i>Investor Information</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>5%</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
Industry Criteria	0.0	0.0	0.0		0.0	0.0	0.0
<i>Account Types</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>25%</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
<i>Functions</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>75%</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
TOTAL FOR OVERALL CRITERIA	0	0	0		0	0	0
UnWeighted/ Weighted % of Total	0.0%	0.0%	0.0%		0.00%	0.00%	0.00%
Total Possible	1100	1100	1100		100	100	100
TOTAL FOR INDUSTRY CRITERIA	0.0	0.0	0.0		0.0	0.0	0.0
% of Total	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
Total Possible	200.00	200.00	200.00		100	100	100

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Gartner Web Evaluation Tool_								
Overall Criteria Weighted Score					Industry Criteria Weighted Score			SITE TOTAL
	Site Design	Site Function-ality	Customer Value	Overall Criteria Total	Account Types	Functions	Overall Industry Total	
SITE 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SITE 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SITE 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Appendix E

Results of the Adapted "Gartner" Web Evaluation Tool



Evaluator 1

Lydia Palmer

12th January 2004 - 24th January 2004

Firm	Firm Name	Industry
1	ABSA http://www.absa.co.za	Retail Banking
2	Standard https://standardbank.co.za/ibsa/	Retail Banking
3	FNB http://www.fnb.co.za	Retail Banking

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	Adapted Gartner Web Evaluation Tool_	ANALYST RATING			Higher is better on both scales
		ABSA	Standard	FNB	
	CRITERIA	http://www.absa.co.za	https://www20.encrypted.standardbank.co.za/ibsa/InternetBanking	http://www.fnb.co.za	(0,1) Scale 0 = No 1 = Yes Others 1 - 9 scale 0 = N/A
1	Site Design				25%
1.1	Good First Impression				20%
1.1a	Simple address URL	9	9	9	9
1.1b	See Title immediately	9	9	9	9
1.1c	Content in eight seconds	8	8	8	9
1.1d	Feeling of wanting more	6	6	4	9
1.1e	Home page on one screen	0	9	9	9
1.1f	Ease of Registration	4	4	4	9
1.1g	Contact details	9	9	9	9
	Sub-Total	45	54.0	52.0	63
	Percentage Sub-Total	71	85.7	82.5	100
	Weighted Sub-Total	14.29	17.14	16.51	20.00
1.2	Navigation				65%
1.2a	Site Map --structure clearly communicated	3	3	8	9
1.2b	Ease of / straightforward navigation	7	6	6	9
1.2c	Segment-specific navigation	3	3	3	9
1.2d	Clear Text links	6	7	6	9
1.2e	Site prevents errors / helps users recover	6	7	6	9
1.2f	Did the site launch additional browsers?	0	0	0	0
1.2g	Return to home page from any page	4	4	9	9
1.2i	Search Tool?	7	7	7	9
	Sub-Total	36.00	37.00	45.00	63
	Percentage Sub-Total	57.14	58.73	71.43	100
	Weighted Sub-Total	37.14	38.17	46.43	65.00
1.3	Aesthetics				15%
1.3a	Visually appealing presentation	7	6	5	9
1.3b	Clear, intuitive goals & objectives	6	7	5	9
1.3c	Effective use of medium	5	5	5	9
1.3d	Consistent look and feel across pages	7	7	7	9
1.3e	Consistent branding	9	9	9	9
1.3f	Functionality adaptable to customer environment	3	3	3	9

		<i>Sub-Total</i>	37.00	37.00	34.00	54
		<i>Percentage Sub-Total</i>	68.52	68.52	62.96	100
		<i>Weighted Sub-Total</i>	10.28	10.28	9.44	15.00
						Total Possible =
		TOTAL SITE DESIGN	118.00	128.00	131.00	180
		Percent of Total Possible	65.56%	71.11%	72.78%	100.00%
		TOTAL WEIGHTED SITE DESIGN	61.71	65.60	72.38	100.00
2	Site Functionality					25%
2.1	Search					70%
2.1a	Ubiquitous search		6	5	7	9
2.1b	Results consistent with search parameters		7	6	7	9
2.1c	Advanced search, multiple parameters		4	4	6	9
2.1d	Relevancy ratings on results		6	6	6	9
2.1e	Sort results		6	0	7	9
2.1f	Intuitive		4	4	4	9
		<i>Sub-Total</i>	33.00	25.00	37.00	54.00
		<i>Percentage Sub-Total</i>	61.11	46.30	68.52	100.00
		<i>Weighted Sub-Total</i>	42.78	32.41	47.96	70.00
2.2	Personalization					20%
2.2a	Matches user sophistication level		5	6	6	9
2.2b	Ability to create "my site"		6	0	0	9
2.2c	Ability to create user profile		0	0	0	9
2.2d	User-defined e-mail subscriptions/newsletters		7	7	7	9
2.2e	Indications of IP sensing (e.g. ad content, hello)		7	0	0	9
2.2f	Community, discussion forums, message boards		0	0	0	0
2.2g	Downloads to other devices (e.g. phones, PDAs)		9	9	9	9
		<i>Sub-Total</i>	34.00	22.00	22.00	54.00
		<i>Percentage Sub-Total</i>	62.96	40.74	40.74	100.00
		<i>Weighted Sub-Total</i>	12.59	8.15	8.15	20.00
2.3	Security					10%
2.3a	Registration/membership required?		1	1	1	1
2.3b	Security policy easily found?		1	1	1	1
2.3c	Security policy clear?		1	1	1	1
2.3d	Privacy policy easily found?		1	1	1	1
2.3e	Privacy policy clear?		1	1	1	1
		<i>Sub-Total</i>	5.00	5.00	5.00	5.00
		<i>Percentage Sub-Total</i>	100.00	100.00	100.00	100.00
		<i>Weighted Sub-Total</i>	10.00	10.00	10.00	10.00
						Total Possible =
		TOTAL FUNCTIONALITY	72	52	64	113
		Percent of Total Possible	63.72%	46.02%	56.64%	100.00%
		TOTAL WEIGHTED FUNCTIONALITY	65.37	50.56	66.11	100.00
3	Customer Value					50%
3.1	Content					30%
3.1a	Relevant to target audience		5	5	5	9
3.1b	Timely, topical		6	6	6	9
3.1c	Fresh		7	7	7	9
3.1d	Credible		8	8	8	9

3.1e	Clear and concise wording	5	6	5	9
3.1f	Organization (clear headings, subheadings)	5	5	5	9
3.1g	Uncluttered/easily scanned	7	7	7	9
	<i>Sub-Total</i>	43.00	44.00	43.00	63.00
	<i>Percentage Sub-Total</i>	68.25	69.84	68.25	100.00
	<i>Weighted Sub-Total</i>	20.48	20.95	20.48	30.00
3.2	Product or Service Information				20%
3.2a	Product selection	6	7	7	9
3.2b	Product availability	6	7	7	9
3.2c	Product pricing	5	5	7	9
3.2d	Product descriptions are clear and concise	6	8	6	9
3.2e	New products page	0	0	0	9
3.2f	Featured items or promotions	NA	NA	NA	9
3.2g	Detailed descriptions are available, add value	6	7	7	9
3.2h	Graphics, pictures are clear, add value	NA	NA	NA	0
3.2i	Product configuration	6	6	5	9
3.2j	Cross selling/ Up selling	NA	NA	NA	0
3.2k	Decision support functionality	NA	NA	NA	0
3.2l	Product recommendations	NA	NA	NA	0
3.2m	Product comparison - w/ own products	NA	NA	NA	0
3.2n	Product comparison - w/ competitive products	NA	NA	NA	0
3.2o	Easy to "request more info"	6	7	7	9
3.2p	Warranty information	NA	NA	NA	0
	<i>Sub-Total</i>	41.00	47.00	46.00	81.00
	<i>Percentage Sub-Total</i>	50.62	58.02	56.79	100.00
	<i>Weighted Sub-Total</i>	10.12	11.60	11.36	20.00
3.3	Customer Service & Support				35%
3.3a	Product use / technical manuals	NA	NA	NA	0
3.3b	Product support FAQs	6	8	7	9
3.3c	Clear customer feedback mechanisms	7	7	8	9
3.3d	Responsiveness	8	9	8	9
3.3e	Online help Offered	6	6	7	9
3.3f	Demonstration Accounts	6	7	0	9
	<i>Sub-Total</i>	33.00	37.00	30.00	45.00
	<i>Percentage Sub-Total</i>	73.33	82.22	66.67	100.00
	<i>Weighted Sub-Total</i>	25.67	28.78	23.33	35.00
3.4	Contact information				10%
3.4a	Head office address, phone, e-mail	8	8	8	9
3.4b	Other local office address, phone, e-mail	7	7	7	9
3.4c	Hours of operation	9	9	9	9
3.4d	Nearest dealer, distributor, rep or office	6	6	6	9
3.4e	Dealer location and hours	9	9	9	9
3.4f	Dealer/Service Center contact information	9	9	9	9
3.4g	Links to dealers	8	8	8	9
3.4h	Nearest repair/service center	NA	NA	NA	0
3.4i	Service center location and hours	NA	NA	NA	0
3.4j	Links to repair/service center	NA	NA	NA	0
	<i>Sub-Total</i>	56.00	56.00	56.00	63.00

	<i>Percentage Sub-Total</i>	88.89	88.89	88.89	100.00
	<i>Weighted Sub-Total</i>	8.89	8.89	8.89	10.00
3.5	Investor Information				5%
3.5a	Annual Report	1	1	1	1
3.5b	Quarterly Financials	1	1	1	1
3.5c	SEC filings	NA	NA	NA	0
3.5d	Analyst Reports	NA	NA	NA	0
3.5e	Management Team	NA	NA	NA	0
3.5f	Stock Quotes	1	1	1	1
3.5g	Press Releases	1	1	1	1
3.5h	News Releases (from outside media)	1	1	1	1
	<i>Sub-Total</i>	5.00	5.00	5.00	5.00
	<i>Percentage Sub-Total</i>	100.00	100.00	100.00	100.00
	<i>Weighted Sub-Total</i>	5.00	5.00	5.00	5.00
					Total Possible =
	TOTAL CUSTOMER VALUE	178	189	180	257
	Percent of Total Possible	69.26%	73.54%	70.04%	100.00%
	TOTAL WEIGHTED CUSTOMER VALUE	70.16	75.22	69.06	100.00
					Total Possible =
	GRAND TOTAL OF OVERALL CRITERIA	368	369	375	550
	Total Percentage Sub-Total	802.26	798.98	806.79	1100.00
	Percent of Total Possible	66.91%	67.09%	68.18%	100.00%
					Total Possible =
	TOTAL OF WEIGHTED SUBTOTALS OVERALL CRITERIA	197.23	191.37	207.55	300.00
	Percent of Total Possible	65.74%	63.79%	69.18%	100.00%
	WEIGHTED GRAND TOTALS OF WEIGHTED SUB TOTALS OF OVERALL CRITERIA	197.23	191.37	207.55	300.00

Would you recommend this site?

1 1 1

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Adapted Gartner Web Evaluation Tool_	ANALYST RATING			Higher is better
	SITE 1	SITE 2	SITE 3	on both scales
	http://www.absa.co.za	https://www20.encrypted.standbank.co.za/ibsa/InternetBanking	http://www.fnb.co.za	(0,1) Scale 0 = No 1 = Yes Others 1 - 9 Scale 0 = N/A
CRITERIA				
INDUSTRY CRITERIA				
Financial Services (by segment)				
FS: Retail Banking				
Account Types				25%
Cheque Account	1	1	1	1
Fixed Deposit	1	1	1	1
Certificate of deposit	1	1	1	1
Mutual fund	1	1	1	1
Brokerage (trade securities)	1	1	1	1
Money Market	1	1	1	1
Notice Deposits	1	1	1	1
Credit card	1	1	1	1
Mortgage	1	1	1	1
Other loans	1	1	1	1
<i>Sub-Total</i>	10.00	10.00	10.00	10.00
<i>Percentage Sub-Total</i>	100.00	100.00	100.00	100.00
<i>Weighted Sub-Total</i>	25.00	25.00	25.00	25.00
Functions				75%
Open new account	7	7	7	9
Apply for loan	6	8	7	9
Loan approval	6	8	7	9
View account history	8	8	8	9
Update /change account information	7	6	8	9
Update /change personal information	6	6	6	9
Stop payment	9	9	9	9
Consolidate multiple account statements	0	0	0	0
Transfer funds	7	7	7	9
Generate custom reports	4	4	4	9
Bill payment	8	7	8	9
Demo account	7	0	7	9
Securities research	0	0	0	0
Current quotes	8	8	8	9
Decision support functionality	0	0	0	9
News	9	8	9	9

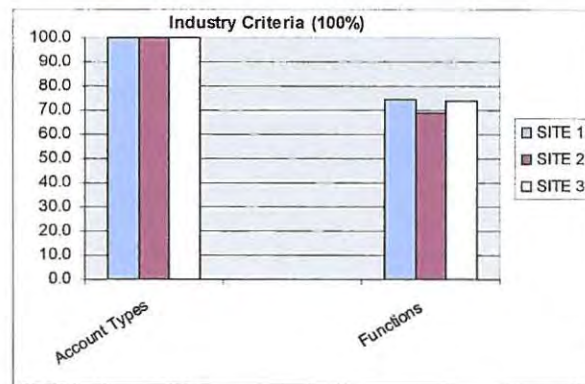
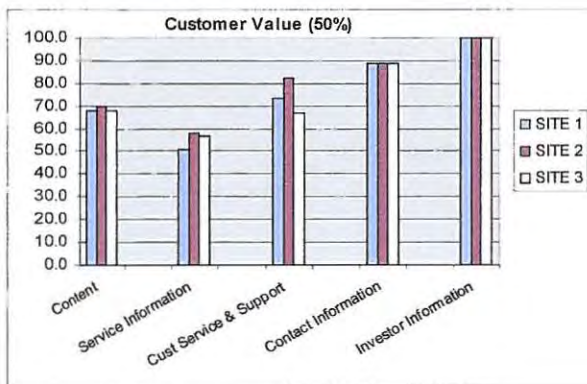
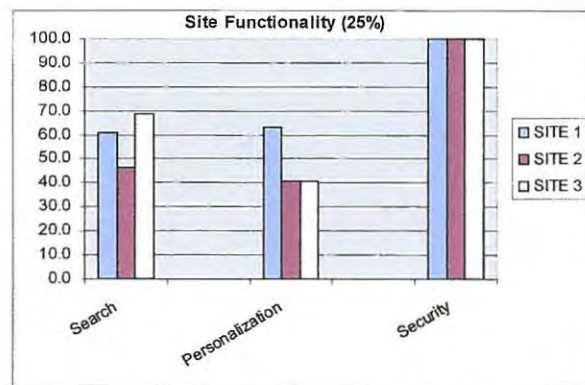
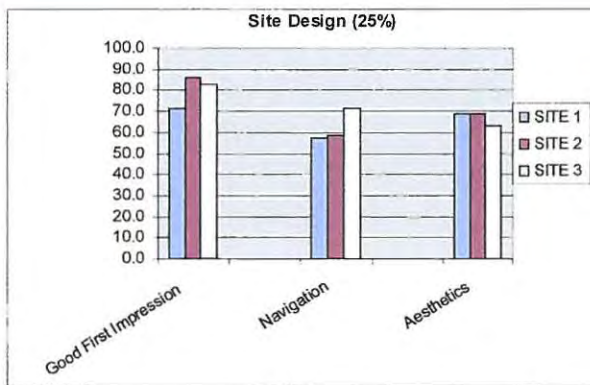
E-mail alerts/ Newsletters	5	8	8	9
Technical customer support	7	7	7	9
Calculator tools	5	0	0	5
Create beneficiaries	7	4	6	9
Pre-paid (Cell Phone)	9	9	9	9
Stop Orders (Repeat Payments)	7	7	6	9
View Interest Rates	6	6	6	9
<i>Sub-Total</i>	138.00	127.00	137.00	185.00
<i>Percentage Sub-Total</i>	74.59	68.65	74.05	100.00
<i>Weighted Sub-Total</i>	55.95	51.49	55.54	75.00
Weighted Total Industry Score				
	80.95	76.49	80.54	100.00
TOTAL Percentage Sub-Total				
	87.30	84.32	87.03	100.00

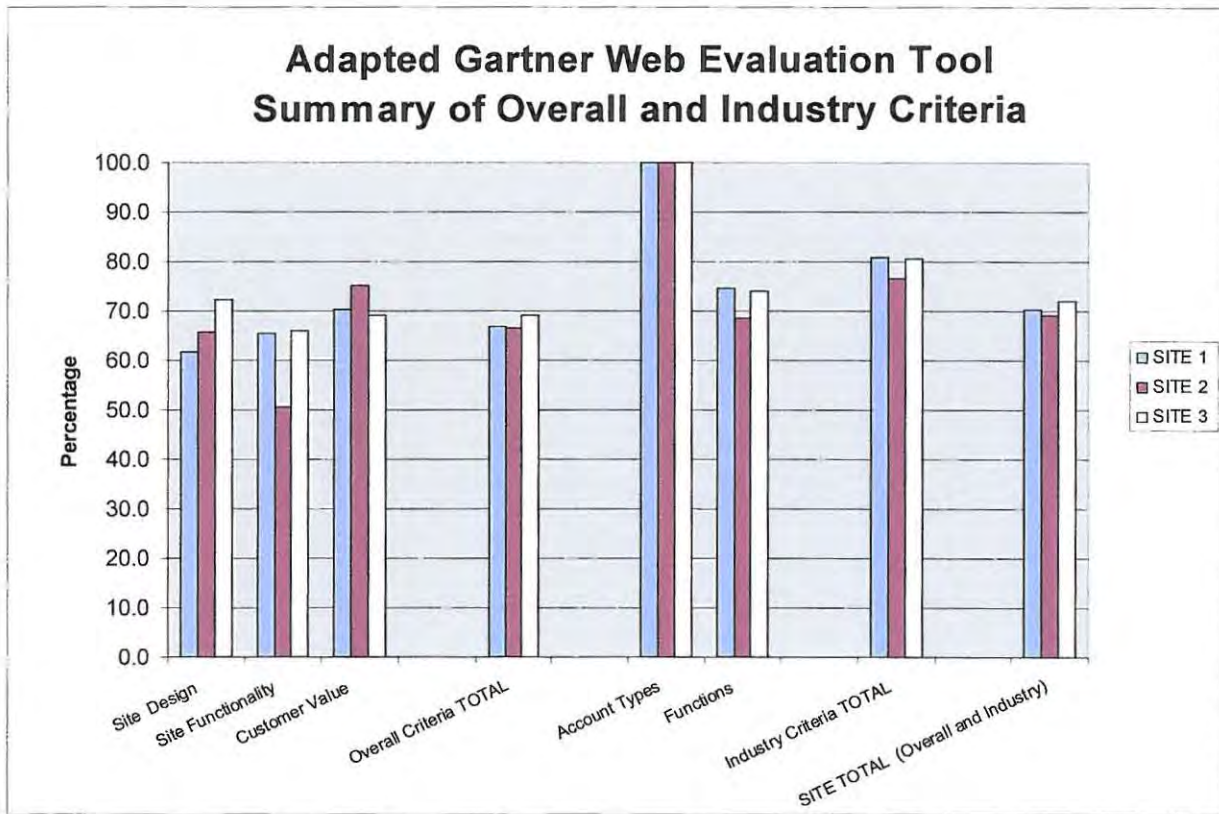
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Adapted Gartner Web Evaluation Tool		Average Raw Score by Criteria				Average Weighted Score by Criteria		
		OVERALL CRITERIA	SITE 1	SITE 2		SITE 3	SITE 1	SITE 2
1.1	Good First Impression	71.4	85.7	82.5	20%	14.3	17.1	16.5
1.2	Navigation	57.1	58.7	71.4	65%	37.1	38.2	46.4
1.3	Aesthetics	68.5	68.5	63.0	15%	10.3	10.3	9.4
1	Site Design (20%)	197.1	213.0	216.9	25%	61.7	65.6	72.4
2.1	Search	61.1	46.3	68.5	70%	42.8	32.4	48.0
2.2	Personalization	63.0	40.7	40.7	20%	12.6	8.1	8.1
2.3	Security	100.0	100.0	100.0	10%	10.0	10.0	10.0
2	Site Functionality (25%)	224.1	187.0	209.3	25%	65.4	50.6	66.1
3.1	Content	68.3	69.8	68.3	30%	20.5	21.0	20.5
3.2	Service Information	50.6	58.0	56.8	20%	10.1	11.6	11.4
3.3	Cust Service & Support	73.3	82.2	66.7	35%	25.7	28.8	23.3
3.4	Contact Information	88.9	88.9	88.9	10%	8.9	8.9	8.9
3.5	Investor Information	100.0	100.0	100.0	5%	5.0	5.0	5.0
3	Customer Value (50%)	381.1	399.0	380.6	50%	70.2	75.2	69.1
INDUSTRY CRITERIA		SITE 1	SITE 2	SITE 3		SITE 1	SITE 2	SITE 3
4.1	Account Types	100.0	100.0	100.0	25%	25.0	25.0	25.0
4.2	Functions	74.6	68.6	74.1	75%	55.9	51.5	55.5
4.0	Industry Criteria (100%)	174.6	168.6	174.1		80.9	76.5	80.5
TOTAL FOR OVERALL CRITERIA		802.3	799.0	806.8		66.8	66.6	69.2
UnWeighted/ Weighted % of Total		72.9%	72.6%	73.3%		66.8%	66.6%	69.2%
Total Possible		1100	1100	1100		100	100	100
TOTAL FOR INDUSTRY CRITERIA		174.6	168.6	174.1		80.9	76.5	80.5
% of Total		87.3%	84.3%	87.0%		80.9%	76.5%	80.5%
Total Possible		200.00	200.00	200.00		100	100	100

Adapted Gartner Web Evaluation Tool								
	Overall Criteria Weighted Score				Industry Criteria Weighted Score			SITE TOTAL (Overall and Industry)
	Site Design	Site Functionality	Customer Value	Overall Criteria TOTAL	Account Types	Functions	Industry Criteria TOTAL	
SITE 1	61.7	65.4	70.2	66.8	100.0	74.6	80.9	70.4
SITE 2	65.6	50.6	75.2	66.6	100.0	68.6	76.5	69.1
SITE 3	72.4	66.1	69.1	69.2	100.0	74.1	80.5	72.0





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- Banking Security should not be a Differentiator
- FNB Card takes fraud fight to new heights

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- FNB HomeLoans - Trading on Style

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FirstRand Share Price | Close Friday 19 March 2004 | Buy : 951 High : 960 Last : 953 Low : 940 Sell

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