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CARLETON UNIVERSITY - SCHOOL OF BUSINESS

***A PRELIMINARY INVESTIGATION ON THE WEB SITE PLANNING
AND DEVELOPMENT PROCESS: A MARKETING
COMMUNICATION PERSPECTIVE***

BY:

Herman Tumurcuoglu B.Comm. (1995)

A Thesis submitted to the Faculty of Graduate Studies in partial fulfillment
of the requirements for the degree of Master of Management Studies

Thursday, September 18, 1997

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A PRELIMINARY INVESTIGATION ON THE WEB SITE PLANNING
AND DEVELOPMENT PROCESS: A MARKETING COMMUNICATION PERSPECTIVE

submitted by Herman Tumurcuoglu, B.Comm.
in partial fulfilment of the requirements for
the degree of Master of Management Studies

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Abstract

Corporate Web sites have become an important aspect of business for many companies and the next few years should see a rapid adoption of Web sites as part of the marketing communication program. While marketers are knowledgeable about message construction in traditional media, they may not be accustomed to design methodologies for a new medium like the World Wide Web. This study focuses on Web site planning and its development process and is interested in constructing a general development methodology to help marketers leverage this new communication tool.

This thesis presents the relevant literature review and field work conducted to help build a preliminary model of the Web site planning and development process. The thesis culminates with a working model and an outline of the important activities that take place during the process. A glossary of terms and important references are also provided to help compliment the material covered.

ACKNOWLEDGEMENTS

I extend my sincere thanks to my co-supervisors. To Professor George Haines, Jr. for guiding me from the beginning and helping me select a topic that is highly relevant to the business world today and that has a special importance to me personally. I also express my gratitude and appreciation to Professor Darren Meister for not only directing me through the research process but also for his patience and demonstrated confidence in my ability to conduct this research and complete this project successfully.

I would also like to thank Professor Louise Heslop for her participation in this project and the helpful material she provided for the completion of this thesis. Her insights help shape the contextual scope of the work.

My special thanks, however, are due to all members of the organizations studied in this research and hope the outgrowth of our combined effort will be of use to them.

Finally, I would like to thank my friends and family for their help and especially their support.

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1.0 INTRODUCTION

The Internet today is the mainstream online multi-service platform, both inside the corporation as well as in the world of consumer services. Every major computer hardware and system vendor provides support for TCP/IP, the Internet's communication protocol. Meanwhile, the World Wide Web has been the fastest growing use of the Internet, with most analysts estimating the total user base to range from 35 million to 50 million people in 1996. The Web started in early 90's and its adoption as a new communication medium has been phenomenal. A corporate Web site seems to have become a must for companies and the next few years should see a rapid adoption of Web sites as part of the marketing communication program.

This thesis focuses on this new challenge by taking an introductory look at planning and development of Web sites. A brief background on the Internet and its services will precede a discussion about the Web's history, commercial applications, marketing value as a communication tool and a literature review that will help build a preliminary model of the Web site planning and development process.

1.1 ORIGINS OF THE INTERNET

The Internet was born as ARPAnet, named after its sponsor, the Pentagon's Advanced Research Projects Agency. The research project was implemented to explore packet switching technology and quickly turned into a new communications link for researchers.

The network originally incorporated a few hosts and the community comprised of a few hundred researchers, mostly at the U.S. Department of Defense. Eventually, ARPAnet grew to incorporate a broader user base and became the Internet (Crocker 1997). Until 1983, fewer than 500 host computers made up the Internet. By 1987 this figure had grown to 28,000 host computers at hundreds of different universities and research labs. Using it was still troublesome, but its utility and potential was already obvious. No other method to network universities was so universal and so flexible. The Internet users created thousands of discussion groups and document libraries and soon people were describing the Internet as a virtual community. The number of host computers continues to grow exponentially (Lotter 1996).

Meanwhile, during the late 1980s, a networking revolution of another sort was taking place. Businesses realized that, having traded their mainframes for PCs, they needed to regain the mainframe's capacity to share resources, such as data and printers, between various departments. Consequently they connected the PCs together. This introduced the organization to "local area networks" (LANs) and changed the way people work. As E-mail took off between offices, companies also created "wide area networks" (WANs) to connect distant workplaces.

These events set the stage for wide scale Internet connectivity for business. However, the mainstream proliferation and commercial potential of the Internet came to light with the World Wide Web. The WWW added a Graphical User Interface (GUI) that was easy to understand by most people.

1.2 COMMON SERVICES

The following are some of the common services of the Internet. All these services using the common network protocol of the Internet.

- **Electronic Mail**

Electronic mail (Email) is a messaging system that allows one to send messages, and reports to other users on the Internet. With Email, it is also possible to create group mailing lists where mail sent to one address will cause the information to be distributed to all members of that group. Mailing lists are a very useful way to disseminate textual information such as office memos and reports to a number of employees at a time. Finally, with the advent of MIME (Multipurpose Internet Mail Extensions), it is now possible to send mail that incorporates sound, picture and video elements.

- **Electronic News**

Electronic News on the Internet is mainly through the Usenet news system.

Usenet newsgroups are like bulletin board systems (BBS) where users posting to a certain group can inform all other readers of those newsgroups. Each newsgroup concentrates on its own specific topic that is often in the general name of the newsgroup.

- Gopher

The Internet Gopher is a menu-based system that provides interconnected links between files on different computers around the Internet. The files that appear to be linked as a series of directories around the Gopher menu are really located on other computers.

Gopher also allows access to a few of the other Internet services such as Telnet a popular tool for remote connectivity. In its extension to multimedia, Gopher never thrived; the Web seemed to replace its utility.

1.3 THE WORLD WIDE WEB

The World Wide Web is another Internet service. It consists of locations called "Web sites". These sites are documents created in hypertext markup language (HTML) format and are commonly referred to as "hyperdocuments" or "Web Pages". All Web sites have what is known as a "Home Page," the virtual front door of a Web site. Consumers visit a Web site by entering its Web address (usually the file name of the home page) in a browser, such as Netscape Navigator or Internet Explorer, or clicking on a hypertext link leading to it from some other hyperdocument. From there, the user can navigate around the Web site. The navigation process is terminated when the user navigates to another Web site via a hyperlink or terminates the navigation experience altogether. Simplicity, interactivity and multimedia make the Web a powerful communication medium.

While hypertext has been around for years, Tim Berners-Lee began its extension to the Internet at the European Laboratory for Particle Physics (CERN) in Geneva, Switzerland. The World Wide Web is born. In March 1989, Berners-Lee proposed a hypertext project to meet the needs of CERN (<http://www.w3.org/hypertext/WWW/History>). Development on the Web project continued at CERN until May 1991 when it was first tested at CERN and then described at a session at the Hypertext '91 conference in San Antonio, Texas. Throughout 1992 Tim Berners-Lee continued to evangelize the project, as developers started working on small pieces of the World-Wide Web puzzle. By March of 1993, the National Center for Supercomputing Applications (NCSA) released the first alpha version of Marc Andreessen's "Mosaic for X". The Windows version of Mosaic (working version released in October 1993) was the first leap from a DOS-like text-based format to a graphical point-and-click environment most PC users were familiar with because of the wide spread proliferation of the Windows operating system.

In March of 1994 Marc Andreessen and colleagues left NCSA to form "Mosaic Communications Corp." with Jim Clark (former Chairman of Silicon Graphics). This is seen by many as being the starting point in the commercialization of the Net (Gardner 1996). Mosaic Communications would later become Netscape Communications. The company would create the Netscape Navigator, currently the premier World Wide Web browser. Netscape Communications would also create a number of World Wide Web servers, some of which makes use of Netscape's Secure Sockets Layer (SSL) technology to offer fully-secure two-way communications via the Web. Thanks to browsers like

Mosaic and Netscape, the commercial use of the Internet skyrocketed; the Internet's commercial domain (.com) has been the fastest growing segment since the introductions of these browsers and is now the largest domain with roughly 170,000 commercial addresses registered as of January 1996 (Lottor 1996, Hoffman and Novack 1997).

By 1995 the stage was clearly set for the digital gold rush. Netscape would go on to have one of the most successful IPO's of all time, as would PSI, Uunet, Yahoo, Netcom, Spyglass and a host of other Internet related companies. Traditional computing giants also shifted their focus. IBM and Microsoft would embrace the philosophy envisioned by Tim Berners-Lee and emphasize Web technology in of their future offerings. Even telephone companies like AT&T would offer dedicated Internet Access. Visa and Mastercard would collaborate and each introduced security specification (Gardner 1996). It was then clear that the Web would play a major role in media and commerce.

1.4 APPLICATION FOR COMMERCE

Few managers in the nineties would deny the strategic significance of information technology inside a firm. Information technology (IT) can give a firm a competitive advantage by lowering costs and enhancing differentiation (Porter and Millar 1985).

It is becoming obvious that Internet technology has efficiency and productivity implications for business; especially with the emergence of Intranets. However, this

research focuses solely on the Internet. As such, there are a number of commercial activities that a firm can undertake on the World Wide Web, for example:

- With respect to advertising, companies can display their products and services to Internet customers and prospects around the world.
- With respect to feedback, a firm can collect timely information on consumer preferences opinions and offer an interactive Business Reply Card or even a survey sheet that instantaneously routes customer responses back to the firm. This is also a common way to handle business queries.
- With respect to electronic commerce, the Web allows customers to fill in electronic purchase orders based on what they can see and even hear on the site. This ties the advertising and distribution processes together.
- With respect to public relations, the Web can automatically and instantly distribute press releases, executive speeches, company newsletters and more to any e-mail customer base at virtually no cost.
- With regards to new product research, a firm can conduct electronic polling for new product introductions/market intelligence.

New applications are being examined everyday. This is still an evolving medium with much of its potential left to be understood.

1.5 PURPOSE AND SCOPE

Many firms are now starting to commit a significant amount of resources towards the development of a Web site. Forrester Research (<http://www.forrester.com/>) has reported that site costs vary by business objective, with promotional sites costing about \$300,000 to launch and maintain for a year. Content sites, which offer original or "repurposed" content and are frequently updated, cost \$1.3 million on average. Transaction sites, where business is actually conducted, can ring up as much as \$3.4 million in annual costs. While good tools to measure investment in information systems do not exist, such high cost estimates warrant an investigation of corporate Web sites.

Early failures (Stuart 1995) indicate that the business community needs a framework for building good Web sites. To this end, the present work is interested in building an organized model of the Web site planning and development process to gain insight into this new management problem.

The thesis is built on the premise that, as the move from a mass-communication to a computer-mediated communication environment (CME) occurs, the psychic-sensibilities of the consumer are of critical and central concern to marketers. The development of a Web site that can address these sensibilities will enhance the navigation experience, increase retention and increase the opportunity to buy products and services of the host company (Hoffman and Novack 1995b, 1997).

While there seems to be acceptance in the field with regards to the marketing value of Web sites and a growing number of prescriptive development concepts in the popular literature, there is virtually no hard data about how this is being applied in practice. The goal of this research is to provide a descriptive model of the Web site planning and development process.

A literature review will provide an idea of what the Web site planning and development process should look like. This will be followed by the observation of the process in the natural setting in order to modify the model. The greater objective is to contribute to the emerging field of marketing in hypermedia computer mediated environments.

2.0 LITERATURE REVIEW

2.1 RELEVANT ISSUES

Futurists such as Gilder (1992) have been describing the information revolution and its impact on commerce for quite some time. While much of the impact is still left to be defined, it is clear that convergence in information technology and media has a fundamental impact on the way marketers gather, process and distribute information. Many new communication, advertising, distribution and research models have emerged recently and many more will emerge in the upcoming years. Some of these are outlined in *The Marketing Information Revolution* (Blattberg et al.1994), a book devoted to the principle changes taking place in marketing because of the information revolution. But perhaps the best indicator that “change” is imminent in marketing science is given in George S. Day’s reflections on the 60th anniversary issue of *Journal of Marketing*. His views on challenges to marketing and the future of *Journal of Marketing* are critical. In light of emerging issues, he cautions researchers of a future where the role of marketing as an academic discipline as well as an organizational function may be diminished. “As the fit loosens, or other disciplines and management functions have competencies more attuned to these emerging issues, marketing loses ground”(p.15). Issues such as collaborative on-line systems, he argues, should be themes that *JM* addresses in a directed fashion over the next decade in order to reassert its leadership (Day 1996).

Since it is inherently global, the Web can facilitate the global sharing of information and create efficiencies in worldwide advertising, marketing, and even direct distribution of information services. However, the Web presents a fundamentally different environment for marketing communication than traditional media and interactive multimedia. This is because hypermedia CMEs, such as the Web, possess unique characteristics, including machine-interactivity, telepresence, and network navigation, which distinguish them from traditional media and enables a “dynamic community presence”. Hoffman and Novack (1995b) define a hypermedia CME as:

“a dynamic distributed network, potentially global in scope, together with associated hardware and software for accessing the network, which allows consumers and firms to
1) provide and interactively access hypermedia content (i.e. “machine interaction”), and
2) communicate through the medium (i.e. “person interaction”)”.

Along with this definition, Hoffman and Novack (1995b) introduce the many-to-many communication model for hypermedia CMEs represented in Figure 1.

*Figure 1 - New Model of Marketing Communications in a Hypermedia CME.
Hofman and Novack (1995b).*

On the Web, both the firm and the consumer are doing more than just communicating through the medium. They are interacting with it, and possibly adding to the medium and developing it in a fundamental way. More than ever, the marketer must play a critical role in engaging communication with the consumer. As a result, successful marketing in a hypermedia CME requires an evolution in the marketing concept to what is called the "Hyper-Marketing Concept."

In the Hyper-Marketing Concept, the firm not only attempts to uncover and satisfy customer needs at a profit, but also engages in marketing activities that contribute positively to the development of the hypermedia CME itself, by developing new paradigms for electronic commerce. Thus, the role of marketing moves from "merely" satisfying customer needs to include an altruistic, cooperative goal of facilitating the development of the market itself. (Hoffman and Novack 1995b)

There is nothing really new or "altruistic" about this concept. Developing the market has always been and will always be a marketing goal. The real difference is that the market, in this case, is also the medium that requires future marketers to learn about Web site planning, development and promotion issues.

Pitt et al. (1996) have provided marketers an alternative way of thinking about Web sites. Primarily, the view of the Web as a virtual flea market whereby a web site possesses the same properties of openness, informality and interactivity which forms a combination of a community and a market place. Secondly, to view the Web as an electronic trade show where some users can wander around enjoying the sights and sounds and picking up pamphlets or brochures and others search more actively. The common view here is that

Web sites can be used to move customers and prospects through successive phases of the buying process (Hoffman and Novack 1995a, Pitt et al. 1996).

Since awareness precedes trial, the main challenge for marketers is to attract visitors to the Web site and generate sufficient interest in order to assure repeat visits (Williamson and Johnson 1995). In a trade show, giving away free popcorn is one way of increasing visibility at a booth. On the Web, the repeat visit problem is partly a function of Web site design (Salomon 1995). This is why creative programming is critical to engaging consumers and simply transferring content from existing media is not sufficient.

Retaining customers requires finding hooks and switching costs. Web sites have to be freshened up constantly if people are going to keep coming back. It is imperative that marketers of the future understand the principles behind developing intuitive and resourceful Web sites and it is this competency which this thesis will address.

The first concern will be to define Web site. While there are no formal definitions of a Web site in the literature, it is often referred to as a hypermedia application. The word hypermedia derives from two words: 1) Hypertext and 2) Multimedia. This is because hypermedia combines the elements of radio (audio), television (moving images), newspaper and magazines (text), and the computer (video display terminal) with hyperlinks to form a particular computer-mediated environment (For a more extensive discussion of hypertext and hypermedia see Gygi (1990) and Smith and Wilson (1993)).

For the purpose of this research, a Web site is a collection of hyperlinked resources under the same management made available to the public through the Internet.

The current work in modeling the development of a Web site is mostly limited to what can be derived from hypermedia design literature (see section 2.4). December (1996) provides a first attempt to represent the full process of planning and developing a Web site. The author does not discuss any research methodology used in building the prescriptive model and the description lacks depth in its explanation of the process or terminology. Nevertheless, it remains the most complete work on the subject to this date and is provides a useful framework for studying the Web site planning and development process.

December (1996) provides a six step Web site development model which represents a continuously ongoing process.

Figure 2 - Web site planning model.(Adapted from December 1996).

The model indicates that there is a analysis and planning stage before the actual design and implementation of a Web site. This model also emphasizes the need for promotion and enhancement. Hence, the literature review will cover the following relevant areas: Web site Planning, IS Development, Hypermedia Design and Web site promotion.

2.2 WEB SITE PLANNING

2.2.1 PLANNING

December (1996) defines planning as the process of choosing among competing opportunities for communication in order to set overall goals for a Web Site. The author identifies 6 major tasks in the planning phase of a Web site development.

1. Define target audience.
2. State a purpose.
3. Identify objectives and policies for information development and use.
4. Plan for and obtain the resources and skills needed for developing your Web site
5. Spend time to think about a Web site before implementing one.
6. Formulate policies about information development, deployment, and presentation to guide developers and users.

Since the study takes a marketing perspective to building effective Web sites, it would be fitting to review what the marketing planning literature has to offer.

Before developing a Web site, it is imperative to have a strategy. Without a logical planning sequence, sound strategic thinking does not occur (Lehmann and Winer 1994). This is why marketers often use marketing plans to define the environmental variables and establish their objectives on paper (MacInnis 1988). In similar fashion, Angell (1996) proposed the equivalent in a “Web plan”.

While strategic marketing planning is beyond the scope of this study, it is a step that should be conducted before the planning of a Web site (Lehmann and Winer 1994; Cosse and Swan 1983; Cravens and Lamb 1986). Corporate objectives are then translated to specific marketing planning and control units, one of which is increasingly falling under Web site planning.

Hoffman and Novack (1997) propose a new classification of commercial Web sites into six distinct types including:

- 1) Online Storefront
- 2) Internet Presence
- 3) Content
- 4) Mall
- 5) Incentive Site
- 6) Search Agent

Hoffman and Novack (1997) argue that the six functional types provide the building blocks for a successful Web site and that an integrated marketing strategy on the Web should involve all of these. These classifications provide the planning team with a framework for determining the nature of what will be presented and how it will be presented to the audience.

In order to establish a dynamic community presence, marketers must think of ways they can help develop the medium (Hoffman and Novack 1995a; 1995b, 1997). On the Web, a firm can choose to sell, conduct marketing research and inform through a simple e-mail exchange. Marketers must plan in a way that helps them think about concurrent activities. Hence, marketers must think about the planning process in a spatial way instead of the traditional linear planning model. While there are no widely accepted planning methodologies for the development of a corporate Web site, there are interesting

principles being proposed (Angell 1996, Bishop 1996, December 1996, Hoffman and Novack 1995a, 1997, Komenar 1997). Bishop (1996) proposes a planning process that is closely related to the hyper-marketing concept. Figure 3 represents the Strategic Digital Marketing model.

Figure 3- SDM Model adapted from Bishop (1996).

The SDM model essentially breaks down into 6 steps.:

1. Build a customer Database: Identify a potential pool of customers that are online.
2. Create Customer Segments.
3. Develop Unique products and services for your customer segment.
4. Create Unique digital promotions: Give your customers an incentive to access your digital domain; may it be financial, Intellectual, functional or entertaining.
5. Use Digital online tools to communicate with prospective customers.
6. Expand your digital domain.

While this model is a general methodology for marketing planning with new technology in mind, it does not present enough detail pertaining to Web site development activities. However, it does offer a valid approach to planning in hypermedia computer mediated environments.

Komenar (1997) introduces three approaches used by consulting firms dealing in interactive marketing. These include The ASAP Process, Information Architecture Methodology and the Archetype Process. All three have distinct steps for planning. The models will be presented in section 2.4.

While a framework to plan content is a good starting point, presenting content effectively on the Web calls for good copy writing, design and layout. Due to the novelty of hypermedia documents, and to the conceptual difficulties of integrating many forms of media into cohesive presentations, there are as yet no widely recognized standards for organizing electronic documents (Lynch 1996).

In Web sites, there are two major elements the designer has to plan for: Web site structure and Web page design.

2.2.2 WEB SITE STRUCTURE

Since users navigate through a Web site, they must be able to find relevant areas easily.

Users need predictability and structure, with clear functional and graphic

continuity between the various components and subsections of the Web site. Banner

graphics, signature icons, or other graphic devices are useful in reinforcing domain

identity within subsections of the Web site. The marketer must also consider the names

given to each page title as these can be important elements in attracting traffic from

search engines. This is because the structure of the Web site can give the marketer the

ability to create “multiple doors of entry” which is a term that refers to the possibility of

having a dedicated lead page for different types of offering a company wishes to convey

through their Web site. This is also why site structure is an issue that must be confronted

early in the Web site planning and development process.

2.2.3 WEB PAGE DESIGN

Because Web pages deep within Web sites can be accessed directly, with no preamble or

context, designers must plan a design that will allow users to locate themselves no matter

which “door of entry” they take. The designer must meet at least the basic standards of

HTML formatting and structure to insure the visual and functional integrity of

hyperdocuments inside a Web site. The basic elements of a Web page should contain the author or contact person, a link to local home page, institution (if applicable), date of creation or revision and a copyright notice. Figure 4 depicts a visual representation of a Web page and the basic elements within it.

Figure 4 - Basic elements of a Web page (Lynch1996).

While this section lists some important planning concepts, a more coherent picture will emerge from the literature covered in the following sections. Traditionally, writers, programmers and designers have been different types of communicators. Recruited from different backgrounds, they worked with different tools and participated in different contexts of work. But new technologies are blurring the traditional boundaries between creation and production. Planning for the digital age will require a higher integration of designers, writers, marketers and IS professionals. The Web calls for new working models for communication planning and execution, one that is based on the many to many communication model (Hoffman and Novack 1995b), one that integrates IS development principles, and one that can capture the dynamics from designing hypermedia applications. A review of some relevant literature will follow subsequently.

2.3 INFORMATION SYSTEMS DEVELOPMENT LITERATURE

There are many similarities between Marketing planning and IS development literature. First, both bodies of knowledge emphasize integration. In other words, IS development goals must be aligned with business marketing strategies before beginning the development of a new individual information system (Martin 1995).

Secondly, as in the product life cycle (PLC), the IS development literature also looks at an information system as an entity that can deteriorate over time if left unchanged. The analogy used in the IS field is called general systems life cycle (GSLC). The GSLC is similar to the PLC, it has four phases: Development, Growth, Maturity and Deterioration (Martin 1995). While the systems analyst cannot control the GSLC, he or she can control the systems development life cycle.

Figure 5 - The classical SDLC mode. Adapted from McLeod and Smith (1996).

2.3.1 SYSTEMS DEVELOPMENT LIFE CYCLE

Figure 5 depicts the classical SDLC model. This is a highly interactive process and it is not uncommon that discoveries made in later stages affect the project in such a way that the systems analyst must return to preceding steps. The broken line arrows in figure 5 can be thought of as maintenance. One critical point is that the SDLC can be broken into manageable chunks in many different ways. There is no “one best way” to break up this process and many versions exist (King 1984, Martin 1995, McLeod and Smith 1996, Applegate et al.1996).

One alternative version of the SDLC developed by King (1984) is well known and incorporates notions of system testing and differentiates between system design and program design. Maintenance is a critical factor in the development of a successful Web site. The model in figure 6, from Martin (1995), distinguishes maintenance planning as an important stage of the SDLC.

Figure 6 - SDLC Model Merle (1995).

Notice in Martin's (1995) representation of the SDLC, the conversion action block is outlined as part of the implementation phase of the process. This step is also implicit in King's written work but is not a part of his graphical representation. King's model also takes into account that IS projects are continuous and often a shift from the old system to a new system must take place. A description of the major action blocks in the SDLC follows.

1- FEASIBILITY STUDY

The first step of the SDLC is the feasibility study stage. This step is usually carried out before the project has full financial approval and is geared to provide a clear definition of the systems practicality. This implies a detailed description of how the end product will be utilized, how many users will be involved and the amount of training required. The required documentation must contain some sort of cost benefit analysis that includes a payback schedule and a gross estimate of the project costs and a tentative schedule for completing the end product.

2- REQUIREMENTS DEFINITION

In this stage an early description of the proposed system is expanded into an accurate and complete set of user requirements. Usually, a detailed analysis of the current system, whether it is manual or automated, is provided in order to ensure that the list of needs and requirements are complete. Therefore, the requirements definition must contain an analysis of the current system, the scope of the proposed system as well as its major

functions, a set of new system user requirements and a summary of the proposed system. Usually, the information required for these points is obtained by conducting interviews with current and prospective users. The information gathered from the interviews should supply the system analyst with the needs of the end user in terms of timing constraints, general performance expectations and error tolerance.

3- SYSTEM SPECIFICATION

In this stage the objective is to translate the user requirements into system requirements based on technological and resource constraints. Often, in order to help the system analyst structured techniques and tools such as structure charts are applied in this stage.

4- SYSTEM DESIGN

When all the specifications of the system have been agreed upon, the system analyst must develop a detailed technical and logical definition of the system to be implemented. All the operational timing and physical components are identified at this stage as well as recommendations on how to go about developing them (in house, purchase or build from scratch).

5- PROGRAM DESIGN AND DEVELOPMENT

Once the system has been designed and approved it must be built. Most of the time spent on this stage is dedicated to programming and is very procedural and straightforward providing the system design documentation is comprehensive and well detailed.

6- SYSTEM TEST

Although testing occurs during every stage of the SDLC, by the time the project reaches this stage everything should be in place in order to carry out a full, user directed test of the newly completed system. This is often called a beta test, where as an alpha test refers to tests made by the development team as the project progresses and culminates.

7- IMPLEMENTATION AND PRODUCTION

After having successfully completed all the previous steps, the system is ready for implementation. The installation of a new system is contingent on many factors present in the environment in which the new system is to be installed. In most cases this implies a conversion from the old system. A new system may involve training and this demands coordination. Testing is also a major part of this new system.

8- MAINTENANCE

System maintenance refers to enhancements or changes to a system that is already operational. This process requires going through the motions of the previous SDLC stages and identifying what elements of the system will be changed and how. These changes are required for several reasons and the need can arise from changes in the environment of the firm.

With respect to maintenance there are two problems noted by Applegate et al. (1996). Primarily, the task is considered to be dull and uncreative since the system has been already implemented and most likely created by someone else. This is often the task

being designated to inexperienced employees who demonstrate less systems development skill. Secondly, because the task can be very complex, system maintenance requires highly skillful individuals who can complete the process without causing operations to be paused.

The end of this stage is signaled by the need of a new system because the current system is not performing to the prevailing industry standards or new technologies are about to make it obsolete (GSLC). Thus, the systems analyst will investigate the new technology and with a new feasibility study a new SDLC and will start again.

The SDLC or Waterfall Model has a number of problems. Among them:

- The model assumes that the steps presented are discrete which, in practice, they are not. In practice, seldom are all activities of a particular stage completed correctly before moving on to the next.
- Maintenance can represent anywhere between 60% and 70% of the total time allocated for the project. It very expensive and time consuming to correct a lot of detailed work.
- There is a rigid structure which is implicit in this model, very little can occur in parallel which means that the overall time taken can be quite long.

- Finally, the Waterfall approach has a wide time lag before implementation and is often used in projects that involve considerable analysis and design, in which case the literature indicates that years can pass before a working product or model is available.

2.3.2 ITERATIVE LIFE CYCLE

The iterative approach to systems development is an interesting variation of the SDLC. Boehm (1988) introduced a well-known iterative life cycle, the Spiral Model is depicted in figure 7.

Each cycle of the spiral begins with the identification of objectives, alternative means of implementing the upcoming portion of the product and the constraints imposed by each alternatives. The next step is to evaluate the various alternatives (Risk assessment) and proceed to the next level of development. The model neatly fits into the spatial-type planning model (Bishop 1996) reviewed earlier.

The disadvantage of such a methodology is that the developer may experience difficulty partitioning the functionality in manageable blocks and may have difficulty in integrating and testing several builds in a proposed system as the number of builds increase (McLeod and Smith 1996).

Figure 7 - The Spiral Model (Boehm 1988).

2.3.3 PROTOTYPING

Prototyping is common practice in systems development. Its main advantage is that it can give users an early “feel” for what the system will be like before it is built. As the name suggests, the feature involves the development of a prototype that will exhibit some, but not all, of the functionality’s of the full target system. It is built in order to asses the appearance, concept and viability of the project.

Prototyping can be incorporated in the life cycle in many ways and often acts as a replacement for the specification process. It can also be used to synthesize the user interface and to verify project requirements. In some cases, prototypes are built with the intent of building towards a final product by adding new functionality and refining the prototype. This can be a highly iterative process and requires collaboration, flexibility, good communication and consensus among developers (West 1986).

Isakowitz and Balasubramanian (1995) have noted that the need for prototyping and intensive testing with users is even more pronounced in hypermedia development than it is with traditional software, because user tolerance to errors in hypermedia applications is very low.

2.3.4 JAD AND RAD

There are numerous modern techniques used in various types of lifecycles. While many such techniques exist, new techniques for Web site development can be derived from two modern approaches worth mentioning. JAD (Joint Application Development) is often used in planning and is very useful in gathering information. JAD applies intensive, facilitated meetings with all members of the project (including client or management) in order to obtain rapid consensus. There are many variations of JAD, particularly with respect to facilitating methods. JAD can also be combined with an automated software package called Computer Assisted Software Engineering (CASE) tool to assist in the analysis and design of an information system using modeling techniques and a sophisticated data dictionary called a repository. While this level of sophistication may not apply directly to Web site projects, the use of a package that aids in building quick prototypes, is analogous to the way WYSIWYG (What You See Is What You Get) editors help Web site developers create real time prototyping sessions. Combining CASE and JAD in rapid prototyping for IT projects has been called RAD (Rapid Application Development). The word RAD describes the use of advanced techniques and lifecycles used to quickly develop an application. The technique was pioneered at E.I duPont in the late 1980s for building small departmental systems. For a more detail see Martin (1993) and McLeod and Smith (1996).

This section provided a brief introduction to basic principles in systems development. Perhaps the role of methodology is over emphasized; success in system development is

likely to be a result of many factors embodied in a management style and technical practice. In the next section the review will continue with systems development models but will now shift focus to design and implementation issues in hypermedia applications.

2.4 DESIGN AND IMPLEMENTATION ISSUES IN HYPERMEDIA

Hypermedia projects differ from traditional software development projects in several critical dimensions. Isakowitz and Balasubramanian (1995) have noted the following:

1. Hypermedia projects may involve people with different skill sets including: authors, librarians, content designers, artists, and musicians, as well as programmers.
2. Designing hypermedia applications involves capturing and organizing the structure of a complex domain and making it clear and accessible to users.
3. Multimedia in hypermedia applications raise numerous difficulties.
4. The process is currently more of an art than a science.

Table 1 chronologically lists six leading methodologies for hypermedia design and implementation. These models have a broader use than Web site planning and development (such as interactive CD ROM and Interactive TV development), but they are the most relevant material available in the literature and list important aspects of the Web site planning a development process.

The first three models are derived from hypermedia design literature. The last three models are branded models used by leading consulting firms.

Table 1

Methodology Name	Source / Author	Development Style	Major Phases	Contribution
HDM Hypertext Design Model	Garzotto et al. 1993	n/a	Modeling	Was first to induce a general methodology for hypertext design based on a top-down, model-based approach.
OOHDM Objected Oriented Hypertext Design Model	Schwabe and Rossi 1995	Prototype process model	- Conceptual Design - Navigational Design - Abstract Interface Design - Implementation	Object-oriented modeling constructs. Also introduced a four step methodology that supports an incremental or prototype process model.
RMM	Isakowitz and Balasubramaniam 1995	Prototype process model	- E-R Design - Entity Design - Navigation Design - Conversion protocol - User Interface Design - Run Time Behavior Design	Further supports a prototype based model. Presents an overall framework for planning and development.
ASAP	Komenar 1997	Prototype process model	- Content Development - Content Acquisition - Scripting - Storyboard - Development (1st phase)	Emphasized the dependence of life cycle on content flow.
Information Architecture Methodology	Komenar 1997	Linear	- Preproduction - Production - Postproduction	Applying a traditional approach used in advertising campaigns. Incorporated promotion and maintenance.
The Archetype Process	Komenar 1997	Linear	- Define - Architect - Design - Implementation	Detailed deliverables of Web site development at the end of each stage.

2.5 EVALUATION OF HYPERMEDIA APPLICATIONS

While most of these models list evaluation as a critical part of their methodology, there is very limited material devoted to the evaluation of hypermedia applications developed by either methodology. In essence, the concept of success in hypermedia design is simple.

Garzotto et al. (1993) put it best:

“The degree of success in hypertext application is directly related to the author’s ability to capture and organize the structure of a complex subject matter in such a way as to render it clear and accessible to a wide audience.”

Garzotto et al. (1995) provided a subset of heuristic evaluation criteria. These include:

Richness, Ease, Consistency (considered to be the most important evaluation criteria), Self-evidence, Predictability, Readability and Reuse.

Richness: This expression denotes the abundance of information items and the number of ways in which to reach them. The Yahoo! classification tree is a perfect example of this. The site (<http://www.yahoo.com>) features many resources that are cross-indexed many times. Different parts of the branches are reused in order to make relevant information easily accessible at all times.

Ease: This is a measure of user ability to easily grasp the operations in the hypermedia application. The power of the Web is its accessibility to a wide audience. Recall that Garzotto et al. (1993) define the accessibility to a wide range of people as a key to

success. This is certainly a reason why Yahoo! (<http://www.yahoo.com>) is such a successful Web site.

Consistency: Consistency is considered to be one of the most prominent evaluation criteria and it measures the application's regularity in presenting various groups of elements. This includes consistent headers and footers, operations and objects representing different contexts.

Self-evidence: This construct expresses the degree to which users are able to guess the meaning and the purpose of whatever is being presented. There are two elements in self-evidence

- Predictability: Degree to which users anticipate an operation's outcome.
- Readability: Measures the overall "feeling" of an application's validity.

Reuse: The extent to which objects and operations are used in different contexts and for different purposes. There are many arguments for reuse. In a hypermedia application, higher reuse promotes higher consistency and predictability; it can also enhance an application's richness. Other reasons for reuse can be found in conventional software engineering arguments such as reducing mistakes, reducing development effort and physical space required.

Thus far, the review covered Web site planning, systems development and maintenance as well as design and implementation issues in hypermedia. All of these phases have one thing in common; they are all really simple variations of what can already be found in the classical waterfall model. There is however a critical phase in the December model of Web site development that is not part of conventional engineering theory: Promotion. The next section reviews the material on Web site promotion.

2.6 PROMOTING A WEB SITE

Since this study takes a marketing perspective, it would not be complete without covering some principles behind promoting a Web site. The problem, however, is that there is a lack of material on this subject in academic writings. Hoffman and Novack (1995b) clearly established this:

“Though traditional marketing approaches can be utilized to get consumers to visit such a site once (the trial problem), virtually nothing is known about how to develop virtual storefronts to maximize profit impact. For example, how does a firm maintain consumer attention, move consumers to the purchase decision, and secure repeat visits? While the data to address these issues are readily available, there is little in the way of a framework to guide the analysis.” (Hoffman and Novack 1995b)

There is however, some material in recent books and popular journals. First, there are a number of people or groups of people that should be contacted, in order to let them know about the Web site. Seltzer (1996) suggests sending publicity notices to various directory listings, newsgroups, mailing lists and editors of online publications. There are precautions to take when sending material to the aforementioned sources. In newsgroups

and mailing lists, people generally do not want to be disturbed with unsolicited advertising. Commercial messages should not be posted on non-commercial lists. Also, the title of the Web pages within a Web site are important as well as the first three lines of text or the META tag, since these are the words that search engines index and display. Some publications also accept press release by e-mail, but there are guidelines to follow (Sayer 1996). One should not forget to send press releases to publications that are relevant to the content of the Web site.

There are many other ways of promoting a Web site on the Web (Bishop 1996, Sayer 1996). We will list some of the traditional activities found in the popular press.

- **CONTINUITY:** One way of getting good word-of-mouth and keep people returning to a Web site is to offer continuous type content. Weekly top ten's, cartoons, best links etc. have a pull value for Web sites. But the idea must be somewhat original or have an original twist to hook the user, as this is becoming a standard practice. Metzger & Associates, a public relations firm, runs a weekly soap opera on its Web site that is popular with users.
- **MUTUAL POINTERS:** Find sites that appeal to similar audience and negotiate mutual links or banner swaps to each others Web sites.
- **CONTESTS:** These have proved to be a popular way to attract attention. Amongst others, Ben & Jerry's, the Waterbury, VT-based ice cream company, have held

contests with great responses. The formula is also taking many new forms. For example: Some advertising agencies are channeling visitors to their clients via their own Internet audience by using contests. One agency, Interactive Imaginations in New York, created the Riddler network of games, in which consumers get points similar to frequent flyer miles for visiting sponsors Web site.

- **ADVERTISING:** Advertising on the Internet is increasing rapidly. Advertising on the Web generally consists of a graphical banner that is hyperlinked to the sponsors Web site. One must remember that ads that work in print publications, and on radio and TV, may not work on the Internet. The advertisement must be informative and targeted. Visuals are important but space is limited.
- **FREE SERVICES TO THE COMMUNITY:** Of all the promotional activities, this is the one that is reportedly most effective. The Hyper-marketing concept calls for Web sites that “give back to the community” and many firms have made this their hallmark. By giving the Web community a valuable service, such as a online program, directory or something that would be of interest to the particular target market, one reaps rewards from the other members of the community: users, competition, media etc.

Innovative ways of promoting a Web site are still being explored. The fact of the matter is that this is still a new field and much remains to be understood about good principles of promoting a Web site.

2.7 LITERATURE SUMMARY

The following points with regards to modeling the Web site planning and development process have been retained from the literature review.

- Before beginning a Web site, a corporate strategy must be in place. Short, Medium and long term objectives must be set.
- Gathering information about the online community will help develop unique products and services that will create a dynamic community presence.
- Serve the customer. Give them a reason to come to the Web site may it be educational, functional, entertaining or financial.
- Essentially the process has five major phases: Planning, Analysis, Design, Development and Postproduction.
- Planning is spatial, not linear.
- Prototyping is easier (real time) and more present in the development cycle.
- Development is more iterative than other media development and involves prototyping at each step.
- Maintenance, testing and promotion are very important parts of the postproduction phase.
- The final product is maintained and expanded in successive builds.
- Allow the customer to talk back and interact with the Web site.

3.0 PROPOSED WORKING MODEL

The model in figure 8 is a graphical representation of the Web site planning and development process based on a composite of the material covered in the literature review.

The model represents a continuous process that evolves over different phases. With each cycle in the spiral model representing a phase of the project. Partitioning and coordinating the project may be difficult but a proper analysis throughout the life cycle will help the team responsible for the Web site. There are essentially four phases and one buffer. The four phases are Planning, Design, Production and Postproduction. The axes represent analysis that is a buffer that helps determine how the project is moving along by establishing a set of deliverables that can be evaluated. The analysis phase varies depending on the stage of the life cycle. The details of these four steps and their deliverables are in Appendix 7. As noted at the beginning of this section, the model is constructed based on a composite from the material available in the literature. The next sections will cover the research objective, methodology as well as strength, weaknesses and benefits of the study.

Figure 8- The Preliminary Web Site Planning and Development Process.

4.0 RESEARCH OBJECTIVES

This study focuses on the process that occurs once the decision to create a Web page has been made. How should a company plan and implement the system? Because no prior models existed, a preliminary model was constructed based on an extensive review of the emerging literature in the field.

Whether a firm should or should develop a Web site is beyond the scope of this study.

Rather, the primary concern is building a model of the Web site planning and development process. Thus the research objectives are to:

- 1- Determine the stages in the process of planning and developing Web sites.
- 2- Use the collected information to build a final process model for the planning and development of Web sites.
3. Attempt to gain an insight on effective Web site planning and development.

5.0 RESEARCH METHODOLOGY

An *ex post facto* design was used in the primary data collection for the purpose of this research. A two-stage design insured that all pertinent variables in the Web site planning and development process were identified for this study. Both personal interview and survey techniques were employed to obtain qualitative and quantitative information concerning this study's objectives.

5.1 INTERVIEWS

In total 7 subjects were interviewed in 6 firms. The interview protocol used during the visits is described in Appendix 2. The interviews were used to gain qualitative information about the Web site planning and development process and confirm the presence of activities listed in the survey. The sample was based on judgment and snowball sampling, whereby Web site development teams in Montreal were identified, and based on their recommendation other teams were contacted. Firms contacted agreed to participate in the interviews, however in five out of six cases, only one employee per firm was available to conduct the interview. This may be a source of bias because very seldom will one employee have a complete view of an organization and its functioning.

Of the 6 firms interviewed 4 were development teams hired for outsourced projects and 2 were in-house teams. Five and a half-hours of dialog was recorded and transcribed. Two of the interviews were in French and had to be translated. Most visits also produced a visit of the facilities and a meeting with staff where background of the firm was

discussed. Such discussions were not recorded but taken note of and any pertinent material. The average time of each interview was about 45 minutes.

5.2 THE SURVEY

The second sub-sample was based on a random sample frame of 2150 corporate Web sites taken from a specialized directory on the Internet (http://csr.ists.ca/w3can/scope/scope_business.html). Whether the sampling frame differed from the theoretical population of Canadian Web sites remains unanswered. Some manipulation of this list was necessary in order to remove irrelevant subjects. The manipulation will be clearly outlined in the next section.

5.3 SAMPLE FRAME MANIPULATION

The list was scanned using a program called Linkbot from Tetranets Software of Ottawa (see: <http://www.tetranetsoftware.com>) to remove dead links. A dead link is an address that no longer reaches an active site. Sites that showed dead links were searched with Alta Vista (<http://www.altavista.digital.com>) in order to validate whether the site no longer existed or simply relocated.

After the listing was updated the URLs were checked in order to eliminate listings of the same Web sites under different names. This would ensure that each population element

had an equal chance of being selected into the sample. Then the listing was formatted and entered in fields using SPSS and a random sample was selected.

A random sample of 261 selected to take part in the survey. Of these, 223 development teams were traced and contacted and 119 of them requested the survey. 31 questionnaires were collected after two reminders. The overall response rate was about 14%.

5.4 DATA COLLECTION METHOD AND ANALYSIS

The interview data provided some important qualitative information, particularly where the literature is weak (success measurement and promotion) or where quantitative information was hard to record or irrelevant. The results of the interview helped produce the final version of the questionnaire (see Appendix 6).

The survey was distributed to companies via the Internet, respondents were given the choice of hard copy distribution but all of them opted for electronic distribution. The quantitative analysis included frequency and percentage distributions in order to report and validate the various elements in the Web site planning and development model.

5.5 LIMITATIONS OF THE STUDY

It is particularly important for research into new topics to be self-critical and analyze the drawbacks of the proposed methodology. This section of the thesis will explain some of the salient limitations this research bears.

One weakness of this study is the high rate of non-respondents and the lack of a formal follow up procedure to understand this circumstance. Aside from reducing the final sample size, non-respondents may differ in important ways from respondents and that difference may bias the study. It was beyond the scope of this study to research such possible effects but it is clearly an interesting topic for future research.

Another weakness of this study is its limited scope. No attempts are made towards understanding how Web based strategies are formulated. As such, this study attempts only to take a first step towards the development of a base model. Several extensions to the base model may exist and Hoffman and Novack (1997) have already proposed a framework for formulating Web site strategies, but it would be hard to record this in the field because the market is still premature. Since there was no base model and little theory development with regards to the role of Web sites as part of the communication mix, tools for evaluating 'real costs' and measure performance, the objective was simply to establish a preliminary model. With this base of knowledge it will now be easier to research the process in more depth.

Finally, the research instruments used are new and based on a relatively new theory. It is normal to suffer some critique in this sense. There is much to be learned about the

process of building effective Web sites and even more about successful marketing on the Internet. While it is possible that the list of activities here is not exhaustive, every attempt was made to build the most comprehensive model possible. Again, the exploratory nature of the study will only reveal and confirm so much. Only future research and the test of time will confirm validity of the findings and further advance the understanding of this new management problem.

6.0 Analysis of Differences Between Actual Practices and Working Model.

6.1 INTERVIEW FINDINGS

6.1.1 GENERAL FINDINGS

The respondents were asked to describe their methodology for developing web sites in detail and the iterative life cycle did emerge, if not explicitly then implicitly.

Traditionally, IT shops use a form of rapid application development technique or a waterfall methodology some respondents did attempt to describe a waterfall type model whereby the work in one phase stops when the next phase begins. But often, that sequence was violated because it hampered development and resulted in the delivery of what the client or management considered an “obsolete” system design. Upon further probing it was evident that firms who claimed to have a waterfall approach could not strictly respect the sequence because they were subject to sporadic specification changes and a discrepancy in vision. The reason for this seemed to be associated with the learning curve related with Web technology. Respondent #5 made it clear that the pace of new developments in Web technology often invited clients to insert additional features which may not have been “appropriate” for the site and would demand considerable redesign. In the end, it seemed that the most appropriate methodology was an iterative type model where critical portions of the site were presented to management or the client. These portions, if approved, were developed and expanded. When a version of a site was completed and uploaded to the server it was approved once more. The advantage was that

a great deal more interaction between developers and management resulted which insured a closer vision on design issues and helps uncover potential problems. In fact, it was recorded that many teams had switched to a weekly or semi-monthly meeting to discuss recent developments after some time. The down side was that developers felt criticized and frustrated. The frustration was even more apparent in outsourced projects.

The first phase of the life cycle produced a “first version” of the Web site (like in software development) which was followed by a second phase which was characterized by testing, review and feedback. When management had taken decisions on what direction or expansion they wanted for the Web site a second life cycle began. It was also gathered that the first iteration of the life cycle was the most difficult for most projects. This was due to several reasons, including:

1. Unclear understanding of site objectives by one or several people involved in the process. Often this was due to the lead-time required to develop team chemistry and understand the vision of the management or client. Web site planning and development seems to involve people with different skill sets (for example: content designers, graphic artists, marketers and programmers) and training.
2. Discrepancy between outputs in conceptual design and implementation. This is especially true with respect to larger and more complex domains. In some cases this was due to a lack of illustration or documentation in the early stages of the

development. Problems seemed even more intense where there was a physical distance between different parties (i.e.: project is outsourced). Differences in vision and competencies proved to be very significant as predicted by Isakowitz and Balasubramanian (1995).

3. Underestimating or not specifying project time line or a specific functionality.

The first life cycle also involved considerably more time and money. Not only because of the aforementioned reasons but also because of the expense associated with building and validating reusable components such as logos, navigation metaphors, style sheets and background designs. Reuse was more prominent in firms who managed outsourced projects and took the time to build a library of different components, including document templates, CGI scripts and graphics, for current and future projects or builds.

Respondents agreed that documentation, especially in design, was necessary to clarify objectives, look and functionality. Firms who evoked successful planning showed signs of prototyping and testing in all stages of the life cycle including conceptual stages where brainstorming, multiple thumbnails, sketches and organizational charts were documented and used to organize information structure. The questionnaire used in this research was expanded to represent these activities.

Perhaps the most compelling deviation was the life cycle's dependency on content development, processing, validation and/or acquisition. Respondents felt this was the

most time consuming part of the overall process. The process requires a lot of coordination between different parties. More detail about this will be given in a later section.

Appendix 4 is an itemized tabulation of Web site planning and development activities cited during interviews. The following sections will discuss additional findings derived from the interviews including: New items cited, evaluation of Web sites, Web site objectives and difficulties encountered during the Web site planning and development process.

6.1.2 NEW ITEMS CITED

Several new items were cited which helped in completing the proposed process and adding depth to the questionnaire. For example, one firm forced their clients to sketch the structure of the Web site during the early stages (planning) of the project. The drawings, which resemble an organizational chart, were worked and reworked during planning. This step helped the client think of a framework whereby navigational barriers are encountered on paper rather than during design or implementation stage. Prioritizing the development efforts was also stated and added to planning in the questionnaire, as was the need to look at what direct and indirect competitors were doing on the Web.

Several comments strongly endorsed a separate stage for promotion and maintenance, which is in line with the literature and should have been integrated in to the working model. Several firms indicated the need for organizational commitment and education regarding the upkeep of the web site.

Respondent #1 believed that the most important part of the process started once the Web site is built. The respondent stated

“It is maintenance and organizational will (specially political will) that determines if a site succeeds in the long run. Every member of the organization must be responsible of contributing to the site and the proper infrastructure must be in place to coordinate future development”.

This respondent also supported the view of the Webmaster as the person who is ultimately responsible for the coordination and the upkeep of the site.

Respondent # 2 added “image research”. This reinforced the object-oriented nature of the approach that can be use in developing web sites. Other respondents mentioned keeping a library of templates and graphics for modification and reuse. This involves searching images and templates used in past projects that can be modified to suit another project. This was seen as a time saving mechanism.

Many respondents also mentioned “dummy sites” or test sites for validation purposes and also mentioned difficulties in discrepancy between the client version of the site and the uploaded version.

6.1.3 MOST DIFFICULT PART

Marketing a Web site was cited to be both the most difficult part of the process and most important part the process. However, other than the items covered thus far, there was no original idea on how to go about attracting visitors to a Web site. Utility was believed to be the motivation to access a site. As respondent # 3 stated:

“Look at Yahoo! It’s a good example of a successful site. I use it everyday now for two years. It’s been two years and it is still a useful site. I don’t know how I would function without Yahoo! At my work. Utility is key”

Content acquisition was also cited several times as a major difficulty. This stage was also expressed to be the most time consuming part of the process. The difficulty had several aspects:

- Text Conversion and verification.
- Content development (mostly lack of speed, which is not in synch with the rest of the development attributed to research time, review approval and even copyright issues).
- Customizing existing text for online documentation.
- Information accuracy and validation.

The difficulty effect of these activities was somewhat compounded by the fact that, for most Web sites, the evolution and freshness of the site demanded that these activities be carried out almost constantly once the site was up and running.

6.1.4 REALITY CHECK

Although the executive suite and the marketing department may be excited about the prospect of connecting the enterprise to the Internet and developing a Web site, typically they have little or no comprehension of the technical issues and costs such connectivity will exact. This lack of competency made communication between different parties very difficult.

This also resulted in difficulties in evaluating the performance of Web sites. During the interviews, "hits" as an indicator of performance was mentioned on occasion but many saw its limitations. Page views and the number of unique visitors were preferred but overall the most likely response was: "depending on the Web site objectives".

There was a tendency to overestimate expected sales, leads generated or the amount of visits to the Web site upon construction. It seemed that respondents or their clients were only realizing the need to promote the site well after it was built. All items in promotion were mentioned with particular emphasis on the integration of the site address (URL) on other promotional material.

Cost was almost always underestimated. In fact, respondent #2 stated that her firm always underestimated the number of hours a project will take. She also had stated that they always start over and redo a lot of the work; a problem expressed throughout the first

phase of the research. One-time hardware and software investments were relatively easy to determine, as were service initiation and monthly telephone and service-provider fees. Harder to define were the costs of user training and support. Other cost issues include the difficulty in quantifying the costs in staff time of development or service administration and security monitoring.

The interviews demonstrated the need to adopt a strict and efficient methodology. While most statements were consistent, many statements related to either planning, production or evaluation problems. Respondents were not unfamiliar with systems development but still seemed to require a great deal of learning with Web site development. The interviews also provided a solid foundation for the second step of the research design. A number of new items were added to the questionnaire and some of the statements were elaborated in order to better capture what actually happens in practice.

In the second section related to findings, the results of the survey will be discussed and conclusions will then be draw in the final section. The end product will be the reconstruction of the proposed model in figure 8.

6.2 SURVEY FINDINGS

6.2.1 SAMPLE COMPOSITION

In all 31 questionnaires were collected. Table 2 outlines the industry distribution within the sample for in-house and outsourced projects.

The majority of respondents were directly involved with the computing industry. Since the sampling frame was quite general and presumably unbiased, it is reasonable to assume that most corporate Web sites are currently those from the computing industry. In fact, despite the written answer, most respondents could fit in any of the first three categories (Internet, software or multimedia). The majority of Web sites were in house projects. While most respondents had considerable experience in their current position the corporate web site was not always their main preoccupation. This raises the question of the experience of respondents but also supports the need to introduce systems development concepts to the field.

The other respondents had diverse backgrounds. It must be noted that "teams" rather than individuals filled out at least three questionnaires and it is suspected that a number of other responses were completed in this fashion. It was reported that, in these organizations, the questionnaire was passed along to the person who could "best" answer the particular section.

TABLE 2: SAMPLE COMPOSITION

Industry	In House Project	Outsourced	Total
Internet	7	3	10
Software	4	1	5
Multimedia	1	1	2
Retail/VAR/Wholesale	2	0	2
Graphic Design	0	1	1
Marketing	0	1	1
Finance	1	0	1
Educational video	1	0	1
Seminars	1	0	1
Health care Technology	1	0	1
Telecom	1	0	1
Consulting	1	0	1
Investment	1	0	1
Broadcasting	1	0	1
Online Documentation	1	0	1
Insurance	1	0	1
TOTAL	24	7	31

6.2.2 GENERAL FINDINGS

The principle objective of the survey was to test whether a substantial pool of professionals echoed the activities collected from the literature and the interviews.

Consistent with the interview findings, respondents generally did not feel that conducting Payback schedules and cost benefit analysis contributed to the successful planning of Web sites. The results may reflect the lack of good measurement tools or simply that these activities were not conducted. Other items which had mean scores below 4 all related to the involvement of particular groups of people working on particular aspects of the project and no unusual observation were noted (i.e.: results were all obvious. For example, IS people not involved in promotion). Lowest scores were attributed to communications professionals who never got a statistically high consensus for contribution to success and rated at best a mean of 5.00. Specific results broken down by stages of the process and an analysis of variance will be discussed in the next section.

Appendix 14 provides a graphical overview of the data broken down by stage. The box plots confirm there are only a few outliers (less than 2%) in the data. Across the 110 items and 3185 data points only 63 outliers were uncovered and of those only 10 were extreme outliers. This is noteworthy because to conduct an analysis of variance, certain assumptions must be made. Since ANOVA is used in this study it is assumed that

population of scores for the dependent variable (in this case the subset of items) are normally distributed. This is especially important in this study because the number of variables in each subset (or stage) differs and creates a substantial differential in the sample size from one stage to another (see appendix 14). ANOVA is considered to be robust to violations of assumptions, but this is when sample sizes are equal; which makes normality and the presence of outliers a critical concern for this data. The box plots suggest that the number of outliers in this case is trivial. As for normality, the Kurtosis statistic produced by SPSS was used to measure the extent to which observations are clustered in the tails. The results (see below) suggest a fairly normal distribution for each stage of the lifecycle with the exception of “analysis” which was definitely skewed toward the left tail.

Variable	Mean	Kurtosis	S.E. Kurt	Skewness	S.E. Skew	N
Analysis	5.62	1.44	.21	-1.22	.10	557
Promotion	5.37	.77	.21	-1.08	.11	527
Planning	5.22	-.03	.19	-.76	.10	649
Maintenance	5.47	.58	.25	-1.10	.13	371
Implementation	5.32	.17	.23	-.95	.12	434
Design	5.32	.25	.19	-.95	.10	647

The following are the aggregate success scores for each stage.

<u>Stage</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Range</u>	<u>N</u>
ANALYSIS	4.41	1.43	2-7	29
MAINTENANCE	5.07	1.34	2-7	30
PROMOTION	5.16	1.44	1-7	31
IMPLEMENTATION	5.20	1.32	2-7	30
PLANNTING	5.55	1.06	3-7	31
DESIGN	5.77	0.84	4-7	31

In order to confirm statistical difference an ANOVA test was conducted. Appendix 9 shows the ANOVA test results with a significant F statistic of 4.12 (F prob. .0014). The significant F statistic asserts that at least two of the groups (stages) were different, but does not specify which ones. Multiple comparison tests were used to discover which groups differed without inflating the type 1 error. Scheffé test was conducted since it is known to yield conservative results. Table 3 is a categorization resulted from a Scheffé.

TABLE 3: SUCCESS SCORES BASED ON MULTIPLE COMPARISON TESTS

MEAN	GROUPS
High	• Planning • Design
Low	• Implementation • Maintenance • Promotion • Analysis

Planning and design where significantly more successful with a mean of 5.55 and 5.77 respectively. These findings are consistent the literature and interviews conducted.

The next section deals with results for each section of the questionnaire and provides more specific information gathered from the survey.

6.2.3 SECTIONAL FINDINGS

To find out more about each stage of the Web site planning and development process, success scores in each respective dimension were correlated in order to see if any relationships would be uncovered at $p < .10$ (see Appendix 10 which breaks down the correlation coefficients by section). Also, Appendix 8 provides descriptive statistics and ANOVA tests results broken down by stage. Again the Scheffé tests was used to interpret findings for each stage of the lifecycle because it yielded the least amount of importance groups and thereby increased the chances of any item to fall in either an important or not important category.

PLANNING

As mentioned previously, planning was a successful stage of the lifecycle for respondents with a mean success rating of 5.55 on the 7 point scale. In total, 21 items were recorded in this section of the questionnaire (16 activities and 5 functional items). Table 4 classifies the items by groups of importance, where 1 is the least important subset of items and 6 the most important subset of items.

Defining the types of functionality for the Web site was significantly correlated with success ($r = .4976$ at $p < .10$). Despite this fact, defining the objective of a Web site had the highest mean (6.61) and the lowest variability (std dev.=.56).

Moreover, importance on the involvement of multiple functional areas was rated highest in the planning stage than in any other stage of the process with a mean of 5.32. This backed the view that Web site planning requires different talent sets and various members of the organization. The involvement of multiple functional was also correlated to successful planning at $p = 0.05$ ($r = .4959$). Finally, the involvement of communications professional, which had lower ratings than other functional groups, was also rated highest in planning than any other stage. These results strongly suggest that successful planning requires the involvement of different functional areas.

TABLE 4: ANOVA RESULTS FOR PLANNING

ITEM	VARIABLE	MEAN	GROUPS
Establishing payback schedule.	Grp 12	3.42	1
Doing a cost benefit analysis.	Grp 13	3.94	1 2
Preparing a feasibility document.	Grp 14	4.26	1 2 3
Using lifestyle and behaviour traits to profile users.	Grp 5	4.32	1 2 3 4
	Grp 19	4.58	1 2 3 4 5
Involvement of information systems personnel.			
Involvement of senior management.	Grp 20	4.90	1 2 3 4 5 6
Establishing demographic profile of users.	Grp 4	5.00	1 2 3 4 5 6
Involvement of communication professionals.	Grp 17	5.00	1 2 3 4 5 6
Preparing document on information content and/or navigation.	Grp 15	5.06	1 2 3 4 5 6
Outlining Hardware requirements	Grp 16	5.16	1 2 3 4 5 6
Determining budget.	Grp 11	5.23	1 2 3 4 5 6
Involvement of multiple functional areas.	Grp 21	5.32 (r)	1 2 3 4 5 6
Defining functionality.	Grp 8	5.48 (r)	2 3 4 5 6
Determining time line.	Grp 10	5.54	2 3 4 5 6
Understanding the competitive scenario.	Grp 7	5.58	2 3 4 5 6
Investigate future technological issues.	Grp 9	5.80	2 3 4 5 6
Involvement of Web site development professionals.	Grp 18	5.87	2 3 4 5 6
	Grp 3	5.90	3 4 5 6
Defining target markets.	Grp 2	6.00	3 4 5 6
Partitioning phases and establishing priorities.	Grp 6	6.54	6
Defining the purpose(s) of the Web site.	Grp 1	6.61	6
Defining the objectives of a Web site			

(r): Denotes that an activity is significantly correlated ($r > .40$) with successful planning at $p < .10$.

DESIGN

Like the planning stage, design was also a highly successful stage (mean = 5.77) and similarly there was also a total of 21 items in this section of the questionnaire (16 activities and 5 functional items). Table 5 classifies the items by groups of importance, where 1 is the least important subset of items and 3 the most important subset of items.

Design was strongly highlighted by functional items. The involvement of Web site development professionals seems to be crucial to this stage. Not only was the contribution rated highest among planning items, but also, consensus on the involvement of Web site development professionals was rated highest in the design stage than any other stage of the process with a mean of 6.35 (lowest std dev. at 0.75). Moreover, the item was significantly correlated with successful design ($r = .4433$). It is also worth mentioning that the correlation between inner item variables were very high in design (see appendix 10) meaning there is a very high agreement on these activities to the point where they can all be interpreted as one type of activity. So there may just be such a thing as “good design principles” in Web site development.

TABLE 5: ANOVA RESULTS FOR DESIGN

ITEM	VARIABLE	MEAN	GROUPS
Involvement of an organization's senior management.	Grp20	4.00	1
Involvement of information systems personnel.	Grp19	4.23	1 2
Using HTML tools such as Microsoft FrontPage and Netscape Gold.	Grp14	4.40	1 2 3
Involvement of multiple functional areas.	Grp21	4.61	1 2 3
Prepare Thumbnails to illustrate structure and design.	Grp11	4.71	1 2 3
Involvement of communications professionals.	Grp17	4.81	1 2 3
Drawing an E-R diagram and data flow diagrams.	Grp 5	5.00	1 2 3
Conducting a formal image research.	Grp 9	5.00	1 2 3
Prepare Storyboards to illustrate structure and design.	Grp12	5.03	1 2 3
Prepare Maps to illustrate the structure and design.	Grp10	5.19	1 2 3
Create and supervise prototypes.	Grp 8	5.52	1 2 3
Preparing proposed template.	Grp13	5.61	1 2 3
Defining the different functionality.	Grp 2	5.74	1 2 3
Defining links between different information types.	Grp 4	5.74	1 2 3
Identifying navigation metaphors and positioning platforms.	Grp15	5.74 (r)	1 2 3
Create and supervise illustration and photography.	Grp 7	5.84 (r)	1 2 3
Defining key messages.	Grp 1	5.87	1 2 3
Defining logical relationships.	Grp 3	6.00	1 2 3
Testing to make sure the site is intuitive.	Grp16	6.13	2 3
Creating the look and feel that supports brand identity.	Grp 6	6.22*	2 3
Involvement of Web site development professionals.	Grp18	6.35 (r)	3

(r): Denotes that an activity is significantly correlated ($r > .40$) with successful design at $p < .10$.

*: $r = .3947$; $p = .028$

IMPLEMENTATION

In total, 14 items were found in this section of the questionnaire (9 activities and 5 functional items). Table 6 classifies the items by groups of importance, where 1 is the least important subset of items and 4 the most important subset of items.

In all, 9 items were found to have high prominence. However, none of these activities significantly correlated with success (see Appendix 10). This was not unusual since no other item in the implementation stage seem to correlate with successful implementation.

From a functional point of view both the involvement of communications professionals and senior management had significantly lower consensus with an average score of 4.48 and 3.51 respectively. Moreover, across all stages, both these items received their lowest ratings in the implementation stage. On the other hand, the involvement of Web site development professionals had a significantly higher importance with a mean rating of 5.68. This would suggest that implementation is seen as a technical stage best left to web site development professionals and possibly the involvement of an organization's information systems personnel.

Respondents had a low consensus about the use of HTML tools such as Microsoft FrontPage and Netscape Gold during implementation. This was also echoed during the interviews. WYSIWYG tools seem to have a greater utility as a prototyping tool than a site building software. As interview one respondent mentioned: "it helps you do all the general stuff more quickly, but we still go back and do the final editing by hand coding".

TABLE 6: ANOVA RESULTS FOR IMPLEMENTATION

ITEM	VARIABLE	MEAN	GROUPS
Involvement of senior management.	Grp13	3.51	1
Using HTML tools such as Microsoft FrontPage and Netscape Gold.	Grp 3	4.29	1 2
Involvement of communications professionals.	Grp10	4.48	1 2 3
Involvement of multiple functional areas.	Grp14	5.32	1 2 3 4
Involvement of information systems personnel	Grp12	5.39	1 2 3 4
Creating graphics, Video and Audio elements.	Grp 4	5.52	2 3 4
Making and approving a set of templates.	Grp 1	5.68	2 3 4
Programming (CGI, Java, ActiveX).	Grp 5	5.68	2 3 4
Creating an extendible directory and file structure.	Grp 2	5.90	2 3 4
Involvement of Web site development professionals.			
Porting new version or additions separate directory	Grp11	6.19	2 3 4
or domain on the same server for validation.	Grp 9	6.26	2 3 4
Writing and/or converting text.	Grp 6	6.35	3 4
Proofreading and validating written content.	Grp 7	4.81	4
Beta testing.	Grp 8	5.13	4

(r): Denotes that an activity is significantly correlated ($r > .40$) with successful implementation at $p < .10$.

MAINTENANCE

This stage had a total of only 12 items (7 activities and 5 functional items). Table 7 classifies the items by groups of importance, where 1 is the least important subset of items and 5 the most important subset of items.

The results demonstrate the importance of offering regularly updated content to keep users coming back to the Web site and designating a Webmaster who will ultimately be responsible for the maintenance of the Web site.

TABLE 7: ANOVA RESULTS FOR MAINTENACE

ITEM	VARIABLE	MEAN	GROUPS
Involvement of communications professionals.	Grp 8	4.55	1
Involvement of senior management.	Grp11	4.77	1 2
Involvement of information systems personnel.	Grp10	4.80	1 2 3
Changing the look of a Web site (without changing the content).	Grp 6	4.90	1 2 3 4
Involvement of multiple functional areas.	Grp12	5.16	1 2 3 4 5
Involvement of Web site development professionals.	Grp 9	5.26	1 2 3 4 5
Training employees to use certain guidelines.	Grp 1	5.48	1 2 3 4 5
Establishing guidelines for information use and updates.	Grp 2	5.71	1 2 3 4 5
Processing feedback from users to management.	Grp 7	5.80	1 2 3 4 5
Establishing a chain of command.	Grp 4	5.87	1 2 3 4 5
Designating a Webmaster.	Grp 3	6.61	5
Updating information.	Grp 5	6.68	5

(r): Denotes that an activity is significantly correlated ($r > .40$) with successful maintenance at $p < .10$.

PROMOTION

While all stages had significant between group differences. The F ratio was most pronounced for promotion ($F = 18.49$). In total, 17 items were found in this section of the questionnaire (12 activities and 5 functional items). Table 8 classifies the items by groups of importance, where 1 is the least important subset of items and 5 the most important subset of items.

All variables had significantly higher consensus than the involvement of information systems personnel, which predictably had a low score (mean = 2.55). Despite the array of highly rated variables, the only one that was significantly correlated to successful promotion was the regularly offering updated content.

The significantly high score of 4.65 attributed to the involvement of Web site development professionals was also the lowest score given across all stages. This would seem to suggest that “Web development professionals” are generally important throughout the process. The problem is the study does not define what such a professional does or what qualifications are needed to fill the position. Finally, the involvement of senior management in promotion received the highest score across all stages with a mean of 5.03. Respondents in this survey may see senior management as the marketing function.

TABLE 8: ANOVA RESULTS FOR PROMOTION

ITEM	VARIABLE	MEAN	GROUPS
Involvement of information systems personnel	Grp15	2.55	1
Involvement of multiple functional areas.	Grp17	4.45	2
Involvement of Web site development	Grp14	4.65	2 3
professionals	Grp13	4.71	2 3 4
Involvement of communications professionals.	Grp16	5.03	2 3 4 5
Involvement of senior management.	Grp10	5.09	2 3 4 5
Sending notices to mailing lists and newsgroups.	Grp12	5.16	2 3 4 5
Having a contest on the Web.	Grp 5	5.42	2 3 4 5
Participating in mutual pointers.	Grp 2	5.91	2 3 4 5
Defining the response sought.	Grp 7	5.81	2 3 4 5
Sending Press releases to online publications.	Grp 6	5.90	2 3 4 5
Offering free services to attract users.	Grp 8	5.94	2 3 4 5
Sending Press releases to hard copy publications.	Grp 1	5.97	2 3 4 5
Defining the audience.	Grp 3	6.03	2 3 4 5
Defining the key message to be delivered.	Grp 4	6.16 (r)	3 4 5
Offering regularly updated content.	Grp11	6.26	4 5
Registering URL of the Web site with search engines, directories and indexes.	Grp 9	6.32	5
Advertising site address			

(r): Denotes that an activity is significantly correlated ($r > .40$) with successful promotion at $p < .10$.

EVALUATION (Analysis)

While analysis was significantly the least successful stage, it also demonstrated the highest amount of variance and, as mentioned in the previous section, the data was not normally distributed. In total, 18 items were found in this section of the questionnaire (13 activities and 5 functional items). Table 9 classifies the items by groups of importance, where 1 is the least important subset of items and 4 the most important subset of items.

Evaluating technological issues was correlated with successful analysis ($r = .4664$). There was only one significant negative correlation with success across all stages and that was the contribution of the organization's information systems personnel in successful analysis.

TABLE 9: ANOVA RESULTS FOR ANALYSIS

ITEM	VARIABLE	MEAN	GROUPS
Involvement of communications professionals.	Grp14	4.58	1
Involvement of senior management.	Grp17	4.74	1 2
Involvement of multiple functional areas.	Grp18	4.77	1 2 3
Involvement of information systems personnel.	Grp16	4.83 (r)	1 2 3 4
Evaluating technological issues.	Grp10	4.97 (r)	1 2 3 4
Proposal to design or implement next phase.	Grp12	5.23	1 2 3 4
Evaluating if Web site's purpose matches its specifications.	Grp 3	5.55	1 2 3 4
Involvement of Web site development professionals.	Grp15	5.55	1 2 3 4
Evaluating whether the Web site contributes new information.	Grp13	5.71	1 2 3 4
Validating the information completeness.	Grp11	5.87	1 2 3 4
A summary of feedback from users to management.	Grp 9	5.90	1 2 3 4
Analyzing the log statistics and using search engines to see how other sites are linked towards the site.	Grp 7	5.94	1 2 3 4
Evaluating if site's purpose matches its objectives.	Grp 2	6.00	1 2 3 4
Investigating if the site reaches intended audience.	Grp 1	6.16	1 2 3 4
Analyzing the log statistics to see how files within the site are being accessed.	Grp 6	6.16	1 2 3 4
Establishing if Web site is meeting users need.	Grp 8	6.39	2 3 4
Validating the information accuracy.	Grp 4	6.42	3 4
Validating whether or not the information is up-to-date.	Grp 5	6.45	4

(r): Denotes that an activity is significantly correlated ($r > .40$) with successful analysis at $p < .10$.

It follows logic that one need not be successful to realize whether an activity is conducive towards the development of successful Web sites. Therefore observations were recorded and helped draw some conclusions but did not have any effect on the constructed methodology per se. Correlations in this study were used as a source of additional insight.

Definitions of stage success was recorded and categorized. Results served mostly to cast more light on deliverables and questions that need to be answered as a stage culminates. The survey was able to capture some descriptive data unrecorded during the interviews such as the production of a Web plan as suggested by Angell (1996) and tracking ROI. Response to the open-ended question varied considerably and very few answers were predominant. Furthermore, many respondents either did not respond to the question directly or eagerly answered with rhetoric about another stage of the life cycle. This was very predominant with regards to design rhetoric. As mentioned previously, the most consistent answers were on the definition of successful design; notably 18 respondents said easy navigation defined successful design. As expected, the least consistent recordings was in analysis, this was probably due to the fact that this section was set up to record activities in all stages of the lifecycle. All frequency scores can be found in Appendix 11. Table 3 lists some of the most predominant open-ended responses to definition of success broken down by section. The percentage of respondents who mentioned the item as part of their answer is at the end of each item listed.

TABLE 10: DEFINITION OF STAGE SUCCESS

SECTION	COMMON ANSWERS
Analysis	• Measuring output (including derivatives such as mailing lists and leads). 29% • Assessment of performance (including post implementation review). 25.8%
Design	• User response. 19.4% • Easy navigation. 58.1% • Interesting visuals. 22.6% • Information richness. 16.1% • Look and feel. 29% • Easy to read (does not bother eyes). 9.7%
Implementation	• Shorter development time or increased pace of development (including no or low restart and few problems). 22.6% • Avoid being lost in your own Web site. 9.7% • Attain goals. 22.6%
Maintenance	• Site is available for service. 29% • Site contributes to new information. 58.1% • Good coordination among respondents. 9.7% • Good Webmaster (project leader). 12.9%
Promotion	• Hits or site traffic. 12.9% • Unique visitors 22.6% • Qualified visitors (target audience). 12.9%
Planning	• Good coordination. 22.6% • Foresee difficulty. 12.9% • Achieve objectives. 16.1%

6.2.4 NEW ITEMS CITED

Survey respondents were given the opportunity to provide additional activities for each phases of the planning and development process. Additionally some respondents felt motivated to specify on certain items by adding text next to the question, all of these were recorded and transcribed. The following items were cited for each phases of the Web site planning and development process.

Planning

- Understanding the level of awareness in specialized markets (audience profile).
- Direction of the company (Business plan revisited).
- Planning the reservation of good domain name.
- Acquiring staff who are competent in communication, HTML, graphics and other Web technologies.
- Keeping with the times, Webmaster needs to gather information.

Analysis

- Feedback from the press.
- Always have an e-mail link present so people can send feedback wherever they are on your site.
- Is the site providing return on value.

Design

- Beta test with focus group.
- Next to graphics supervision, user wrote “bandwidth police”.
- Next to E-R, user wrote “I do this in my head”.
- Next to E-R, several users put a question mark.

Implement

- Cross browser platform compatibility.
- Fast downloading time.
- Minimum graphic navigation elements.
- Strong project leader.

Maintenance

- Implementing a tracking procedure.
- Checking for broken links.
- The use of templates and databases for site maintenance by non-html people.

Promotion

- Linking. But make sure it is hard to get out of the site even with links (ex: frames).

6.2.5 THE MARKETING FUNCTION

In order to get some additional information, respondents were asked three general questions about their company Web site and its role in marketing. The results back the

view that Web sites are communication tools and most respondents did not feel that their Web site changed the marketing function in any significant way. The following were the most frequently listed items for Web site marketing objectives:

TABLE 11: MARKETING OBJECTIVES OF A WEB SITE

ITEMS	Frequency
Communicate products and services (including spec sheets)	14
Collect information (marketing intelligence)	1
Promote company, products and services	6
Increase awareness among target market	2
Customer Service	3
Demonstration	3
Increase sales or leads	1
Tap into new markets	6
Provide content so users come back to site	1
Being innovative or up to date with tech	2

Many respondents prefer to think that their Web site is a complementary marketing communication tool that does not affect the marketing function as 45.2% of respondents specified this in their answer. No other answer was common. Other answers included streamlining and automating certain aspects of the marketing function, increased sales (which is not a direct answer to the question) and increase in geographical scope.

When asked in what way a Web site was different than other communication tools several predictable answers were uncovered kept resurfacing. The most common answers are found in table 5 below.

TABLE 12

ITEM	FREQUENCY
Interactive	14
Global	10
Cost efficient	7
Audience has control	4
limited access	2
Can quickly update	2
Continuous updates	2

7.0 BENEFITS OF THE STUDY

The benefits of this study are twofold. First, from the practitioners point of view, a planning model that deals with the development of a Web site will clarify what activities should be carried out and how these activities are to be performed. The model should also help with scheduling which is a crucial element in all marketing campaigns. Secondly, like many studies that are emerging in the field, this research provides a useful prototype for researchers studying marketing on the Web and hypermedia CME's. Future research directions will also be discussed in this section.

7.1 BENEFITS TO THE PRACTITIONER

The practice of planning and implementing a Web site is a new activity for most companies. It is easy to see why so many companies are turning to multimedia houses, Internet consultants and advertising agencies that specialize in the process of setting up a Web site. The so-called experts on the Internet are usually consulting firms that have designed a couple of dozen pages for firms in the last two years. This is an industry that has hardly established any types of accepted principles of practice. It is now, while the practice of marketing on the Web is in its infancy, that a model for planning and implementing a Web site is most needed.

7.2 FUTURE RESEARCH DIRECTION

Since the objective of the study was to view Web sites as a new communication tool for marketers, the next logical step is to take what has been learned from the present research and elaborate on the role of Web sites as part of the promotional mix.

To be specific, it would be interesting to know how the Web site planning and development process applies to advertising agencies and PR houses. How does the model fit in their general methodology for developing campaigns? Do they use the same type of competencies? Do they follow the same steps? If not, why?

The findings in this research provide a solid foundation for further exploration. A number of extensions can be made to the base model formulated in this research. The material presented can be used to gain additional insight into the general research question, How should marketers build effective Web sites? This also includes the much anticipated question regarding effective electronic commerce via the World Wide Web.

8.0 THE FINAL MODEL AND RECOMMENDATIONS

8.1 THE WEB SITE PLANNING AND DEVELOPMENT PROCESS

The following figure is drawn from the findings of this research.

Figure 9- The Final Web Site Planning and Development Process.

The model in figure 9 depicts an evolution over the proposed model found in figure 8.

The spiral can be taught of two major cyclical phases: Production and Post Production that reoccur for each evolving version of the Web site. Each phase has three steps. The steps outlined are similar to the ones found in the December model seen in figure 2.

Basically, the study underlines the need to focus the purpose, scope and time frame at the beginning of the process, stick to deadlines, keep it simple, save more ambitious ideas for future iterations and have a Webmaster that will be in charge of maintenance and expansion of the Web site.

The details brought to light by this research about this 6-step process are described in detail in Appendix 12. Table 13 provides a summary of the different stages. This summary is based on the highest subset of items found in tables 4 through 9.

Table 13: Summary of important steps

Stage	Key Development Points
PLANNING	- Establishing demographic profile of users and defining target markets. - Preparing document on information content and or navigation. - Outlining Hardware requirements. - Determining budget and time line. - Defining functionality. - Understanding the competitive scenario. - Investigate future technological issues. - Partitioning phases and establishing priorities. - Defining the purpose(s) and objectives of the Web site.
DESIGN	- Using HTML tools such as Microsoft FrontPage and Netscape Gold. - Drawing an E-R diagram and data flow diagrams. - Conducting a formal image research. - Prepare maps, thumbnails and storyboards to illustrate structure and design. - Create and supervise prototypes. - Preparing proposed template, illustration and photography. - Defining the different functionality and links between different information types. - Identifying navigation metaphors and positioning platforms. - Defining key messages and logical relationships. - Testing to make sure the site is intuitive. - Creating the look and feel that supports brand identity.
IMPLEMENTATION	- Using HTML tools such as Microsoft FrontPage and Netscape Gold. - Creating graphics, Video and Audio elements. - Making and approving a set of templates. - Programming (CGI, Java, ActiveX). - Creating an extendible directory and file structure. - Porting new version or additions to separate directory or domain on same server for validation. - Writing and or converting text. - Proofreading and validating written content. - Beta testing.
MAINTENANCE	- Training employees to use certain guidelines. - Establishing guidelines for information use and updates. - Processing feedback from users to management. - Establishing a chain of command. - Designating a Webmaster. - Updating information.
PROMOTION	- Sending notices to mailing lists and newsgroups. - Having a contest on the Web. - Participating in mutual pointers. - Defining the response sought. - Sending Press releases to online publications and hard copy publications - Offering free services to attract users. - Defining the audience and key message to be delivered. - Offering regularly updated content. - Registering URL with search engines, directories and indexes. - Advertising site address
EVALUATION	- Evaluating technological issues. - Proposal to design or implement next phase. - Evaluating if Web site's purpose matches its specifications and if it contributes new information. - Validating the information completeness. - A summary of feedback from users to management. - Evaluating if site's purpose matches its objectives. - Investigating if the site reaches intended audience. - Analyzing log statistics and search engines to see how files are being accessed. - Establishing if Web site is meeting users need. - Validating the information accuracy and whether or not it is up-to-date.

8.2 FUNCTIONAL INVOLVEMENT

While the research supports the involvement of multiple functional areas during the different stages of the life cycle, overall Web site development professionals were the most important participants in the process. The involvement of Web site development professionals seems to be most crucial during the design stage, the item was significantly correlated with a perception of successful design ($r = .4433$).

Involvement of senior management was most prominent in planning, promotion and implementation but least important in the design stage.

Information systems personnel did not seem to play a great role in design and promotion but had an important role in other stages, particularly in evaluation.

Overall the importance score for the involvement of communication professionals rated lowest among other functional areas. But regardless of that fact their contribution was critical in the early stages of the life cycle, namely planning and design.

8.3 CONCLUSION

The research gives backing to the premise derived from the literature. That is, marketing in hypermedia requires creative programming and a new approach to building effective communication between the firm and its clients. Specifically, the study forwards the adoption of hypermedia design and systems development theory by new media professionals and provides a preliminary model that can be used as a framework to approach this new management problem.

The findings support the December model of Web site planning. While the graphical representation of the process represented in figure 9 is different, the idea remains the same. And while this study added considerable detail towards a general methodology, the lack of confidence expressed by respondents during the study is a clear manifestation that the state of the art is still in its infancy. Therefore future studies will help forward the practice.

The study provides the business community with a concise definition of a Web site from the organization's point of view and tracked important issues and problems such as the lack of accountability. Many development teams did not prepare payback schedules and feasibility documents. Preparation of such documents is a good exercise and can help project managers think about how to leverage the Web and decide what objectives and functionality have priority. The documents can also be used to "sell" management on the benefits of the Web.

The tendency to neglect issues of ROI in early stages of a Web site project can lead to problems. The developers clearly emphasized the need to define Web site purpose and goals, it is the cost and value of those goals that should be addressed both by the academic and professional community.

It was concluded that Web site development is an iterative process and that, regardless of previous experience, it is always hard at the beginning. Over time, the expansion becomes technically easier and less time consuming but this is only replaced by management problems. As a site becomes larger, it becomes more difficult to maintain, and servicing costs inevitably increase. The company must clearly establish its goals and priorities and have upper management commitment early in the process. The methodology developed in this study should provide a good framework for Web site development, but future work will bring more improvements to the model including activities that will aid in shortening the cycle, producing a superior modeling document and attracting more end users.

Of the aforementioned areas of possible improvement, one stands out in particular. Ideas on promotion of a web site were sparse in this study, and there was clear indication that promotion was still a neglected part of the life cycle. Branding, for example, was mentioned only once during the investigation while there was a strong agreement in reinforcing a brand name. While there is much talk about the direct marketing potential of the World Wide Web, the fact is the Web has already proven to be a viable medium for creating and promoting brand names. In fact, firms like Yahoo! and Amazon.com have

built their business on a strong brand name. As Mitch Ratcliffe (1997) of Ziff Davis

Interactive recently put:

In an information maelstrom such as the Web, brand is the only competitive advantage that a company can use to build a successful business. Brand names, logos and images associated with brands (such as Nissan's weird Asian dude) stand out: they are like lighthouses in the fog. They scream "come back this way" to the consumer, and consumers do come. And Yahoo! gets this fundamental Web business strategy better than anyone else (Ratcliffe 1997).

As this study confirms, it may be far fetched to say that brand "is the only" competitive advantage a company can use but it is fair to say that Yahoo! is a strong and successful brand name created on the Web. It is also a model example of what such a brand name can do for a company that otherwise offers an easily reproducible service, and the same can be said for Amazon.com. Perhaps most marketers have not yet taken a firm commitment to promote their company on the Web. How much resources would that require? What would be the ROI? Many such questions remain unanswered. Future investigations should include empirical research on various Web site branding and promotion tactics, this is what Web marketers are interested in discovering.

Hoffman and Novack (1995) have provided a useful conceptual framework for marketing in hypermedia computer mediated environments. It is found in this thesis that the hypermarketing concept and hypermedia design literature are closely related. Since the idea behind a Web site is to be able to take a complex set of information and present it to different types of individuals the development approach must take into consideration hypermedia design goals. Incidentally, both Amazon.com and Yahoo! seem to do this very well.

In closing, this study attempted to isolate the corporate Web site as a tool in the communication mix. With the advent of Intranets and Extranets playing a much greater role in organizations, it is conceivable that it will be harder to study Web site development in isolation in the future. Web site development is becoming a subject of its own and it is hard to think of the Web site as a specific tool (i.e.: marketing communication tool).

It is also conceivable that the World Wide Web as we know it today will change significantly in the future. The overall direction is clear, we are headed towards a future where media convergence and interconnected networks will be available to the masses, this study provides a useful blueprint for new media communication development.

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Glossary of Terms

Alpha Testing: An Alpha test refers to testing that is conducted during the development process. The term has evolved to have a rather wide significance. Originally the term was used to describe unit or system testing independently from operating system. Alpha testing is usually followed by a pilot test called beta testing.

Banner: On the Web, a banner refers to a graphical advertisement. The most common format is a 468x60 pixel rectangle on the Web page located at the top and bottom of the browser screen.

Beta Testing: Beta testing refers to software testing conducted on a pilot basis within a limited scope (i.e.: departmental, geographical, limited copies etc...).

Browser: A browser is the software program that runs on your computer and lets you see Web pages. The most popular Graphical browsers are Microsoft Internet Explorer and Netscape Navigator .

Computer-Aided System Engineering (CASE): A collection of automated tools used to help the systems development process. used is RAD and JAD.

Cache: The Cache is a file on the users computer where their system stores a copy of things they've asked for recently. If the reader asks for the same thing again, instead of issuing another Internet request, the reader's computer can simply use the copy from the Cache. Designers can use the Cache to their advantage, because with caching, the more often you reuse the same pictures, the faster the Web site will appear to users.

CD-ROM: Stands for compact disc-read only memory; one CD-ROM can hold about 600 megabytes of data. The obvious implication being the delivery of interactive multimedia programs.

Data Flow Diagram: A graphical representation of the flow of information (data) throughout the system.

E-mail: Electronically transmitted messages.

E-R Diagram: A graphical tool used in representing a data orientation approach to describe the various elements in a system and their relationships.

Frontpage: A popular WYSIWYG editor from Microsoft Corporation.

GIF (Graphics Interchange Format): A graphics file format that is commonly used on the Internet to provide graphics images in Web pages.

Hacker: The term is used variously and has a bad connotation in some cases. In many cases it is used to describe a skilled programmer. Other times it is used to describe a skilled programmer with ill intent (which usually involves some form of intrusion). The hacker mentality is to build something useful from scratch. But the freedom comes at a price (for example unexpected system failure).

Host: A computer with full two way access to the Internet.

HTML: Hypertext markup language. A script language that composes Web pages.

Hit: A hit on a Web site is the number of times the browser calls for a file from the server. This means that each HTML page and page element (like a graphic file or background) is counted as a hit. There has been some confusion with the number of visitors that visit a Web site. Hits are not interchangeable with reach or exposure.

Hypertext: A term coined by Ted Nelson around 1965 for a collection of documents (or "nodes") containing cross-references or "links". Hypertext orientation is what makes the Web work so well. It is essentially a philosophy of information presentation and retrieval. Hypertext is often used in the context of a text that, when clicked on, jumps the reader somewhere else. The quality has many implications in a shared network system like the Internet since it gives the user/audience and developer the ability to go beyond the immediate domain for integrating information (data) into the experience (this is an underlying construct in the hyper-marketing concept).

Hyperdocument: A term that signifies a hypertext document.

Hypermedia: A word derived from the fusion of hypertext orientation and multimedia (like the World Wide Web).

Internet: Krol and Hoffman (1993) offer three definitions of the Internet: "1) a network of networks based on the TCP/IP protocols; 2) a community of people who use and develop those networks; 3) a collection of resources that can be reached from those networks" and note that there is no agreed upon definition because the Internet is at once a set of common protocols, a physical collection of routers and circuits, distributed resources, and even a culture of connectivity and communication.

IP--(Internet Protocol): The rules that provide basic Internet functions. (See TCP/IP).

IP Number: An Internet address that is a unique number consisting of 4 parts separated by dots, sometimes called a "dotted quad."

JPEG (Joint Photographic Experts Group): The name of the committee that designed the photographic image-compression standard. JPEG is optimized for compressing full-

color or gray-scale photographic-type, digital images. It doesn't work well on drawn images such as line drawings, and it does not handle black-and-white images or video images.

Link: A link (or hyperlink) is a hypertext entry which lets the reader jump to a new location. By clicking on a word, phrase or graphic the user can directly access files related to that subject.

Listserv: An Internet application that automatically "serves" mailing lists by sending electronic newsletters to a stored database of Internet user addresses. Users can handle their own subscribe/unsubscribe actions without requiring anyone at the server location to personally handle the transaction.

mailing list: An e-mail based discussion group. Sending one e-mail message to the mailing list's list server sends mail to all other members of the group. Users join a mailing list by subscribing. Subscribers to a mailing list receive messages from all other members.

MIME: MIME stands for Multipurpose Internet Mail Extensions. MIME provides the ability to transfer non-textual data, such as graphics, audio and fax.

Meta Tag: The meta tag is a HTML function which lets the author control the words for which certain search engines will look for when referring to the Web page.

Multimedia: Human-computer interaction involving text, graphics, voice and video. This term has come to be almost synonymous with CD-ROM in the personal computer world because the large amounts of data involved are currently best supplied on CD-ROM. Often also includes concepts from hypertext and hypermedia.

Netscape: Currently the most widely used browser in the market. Netscape Gold is a browser and WYSIWIG editor combined.

Packet-switching: A method of fragmenting electronic data into component parts called packets, routing them to their destinations over a network, and then reassembling them upon arrival.

Reach: The number of people who are exposed to an advertising campaign.

Reuse: The practice of reusing components in different programs or builds.

Universal Resource Locator (URL): This a Web site address. Most Web site addresses are of the form <http://www.thecompany.com>. Here is a breakdown of this address:

http://

This stands for hypertext transfer protocol and in the browser the function tells the computer to find a Web page with the specified domain name and file name that follow it. Other possibilities could include FTP (File transfer protocol) or gopher.

www.

This is a convention that stands for World Wide Web. Many companies use this, but there are some addresses that don't.

thecompany.com

This is the domain portion of the URL-the real address. The .com indicates (mostly in the United States) that this is a "commercial" address. You'll also see .edu for "educational", .net for "network services provider", .org for "nonprofit organization" and .gov for "government".

Usenet: Another name for Internet Newsgroups. A distributed bulletin board system running on news servers, Unix hosts, on-line services and bulletin board systems.

TCP/IP (Transmission Control Protocol/Internet Protocol): The basic programming foundation that carries computer messages around the globe via the Internet.

Web Site: In this study, a Web site is a collection of hyperlinked resources under the same management made available to the public through the Internet.

Web Page: A single document contained in a Web site.

Webmaster: is someone who maintains a Web site. There is some confusion on the scope of the Webmaster's work. but ultimately this is the senior position concerning the corporate Web site. Note that as the industry matures, more companies are using the term Web Administrator or Web Manager for the person who keeps the site running once it's created, and Web site Designer or Web Author for the person who creates it in the first place.

WYSIWYG: Acronym that stands for: What you see is what you get. The term is used to describe editing software that reproduces what the end users actually visualizes on the screen.

APPENDIX 1: Logistics of Field Research

1. Make an initial list of Developers and Web site that can be measured.
2. Contact development teams in random sample.
3. Interview Protocol (APPENDIX 2).
4. Review and readjust survey.
5. Conduct Survey.
6. Tabulate and graph results for presentation in final thesis.

APPENDIX 2: Interview Protocol

1. Initial Scheduling of filed visits.

- Contact at least two weeks ahead of schedule.
- Verification and confirmation of recording instruments and time parameters.
- Determination and confirmation of persons being interviewed.
- Send confirmation.

1. Protocol Questions

A) Do you have a methodology for creating successful Web sites?

- If so can you describe it?
  - Can you please identify the major aspects of developing a Web site.
  - What are the important things people should think of when planning a Web site.
  - How do you partition a project?
- If not why not?
  - What are the ramifications (or pitfalls) of not following a methodology?
  - Are there any common points from one project to another?
  - What are the points to consider when designing a Web site?
  - What are the points to consider when planning a Web site?
  - What are the points to consider when building a Web site?
  - What are the points to consider when maintaining a Web site?
  - What are the points to consider when promoting a Web site?

B) What is the most difficult part of developing a Web site and why?

- What is the most time consuming part of a Web site and why?
- Can you describe any difficulties in the development of Web site?
- What are the major mistakes encountered in planning and developing Web sites?

B) Who are the different people involved in the development of a Web site and What is their role?

- In what phases of the life cycle (or project) are they involved in?

B) How does prototyping work? What is the process behind it?

- What types of tools do you use (example software, storyboards)?
- How many prototypes do you do or how often are they done?
- Who is involved in the process?

- B) How do you evaluate Web sites?
- C) What is the testing process like?
  - Ho many phases?
- D) How do you go about promoting a Web site?
- E) How do you define success for a Web site?

3. Analysis Plan

- Short Answer sheet.
- Itemize and assign numbers to each question and answer.
- Identify those activities that have significant presence and add to the survey.

APPENDIX 3: COVERING LETTER FOR INTRODUCTION

Dear Sir/Madam,

Many organisations are participating in Web site implementation. Since this is a relatively new activity for the business community there are many unanswered questions about effectiveness and methodologies.

I am conducting research on the Web site planning and development process. As part of this research, I would like to meet with you (or an appropriate colleague) for an hour to discuss how your firm approaches this type of planning.

Please note that your responses will be confidential. Only aggregate data will be published, and no individual person or company will be identified. If you wish, I will send you a summary of my findings after analysing the data.

I will be soon contacting you by phone for an appointment. should you have any questions regarding this research, please feel free to contact me at (514) 279-9245. or any of my supervisors Dr. George Haines (613) 520-2600 Ext. 7487 or Dr. Darren Meister Phone: (613) 520-2600 Ext. 2397.

Thank you very much for you assistance in this study.

Sincerely yours,

Herman Tumurcuoglu B.Comm.
Masters Student,
School of Business, Carleton
University.

APPENDIX 4: SHORT ANSWER SHEET SUMMARY

In all 7 subjects were interviewed in 6 firms. Of the 6 firms interviewed 4 were development teams hired for outsourced projects and 2 were in-house teams. The in-house teams outsourced very few items (exceptions were very specialized items such as a few fancy graphics). To the contrary the 4 agencies almost always outsourced to complement their in-house teams and broaden their service offering to their clients. The iterative life cycle did hold true in all cases. There were many signs of prototyping and testing was evident in all stages including conceptual stages where brainstorming, procrastination, multiple thumbnails, sketches organizational charts were used. The most compelling deviation was the life cycles dependency on content development, processing, validation and acquisition.

In all, about 5½ hours of dialog was recorded and transcribed. 2 of the interviews were in French and had to be translated. Most visits also produced a visit of the facilities and a meeting with staff where background of the firm was discussed. Such discussion not recorded but taken note of and any pertinent material was added to the sheets. The average time of actual one on one interview was about 45 minutes with the shortest interview being 20 minutes and the longest just shy of 1½ hour. The following is an itemized tabulation of web site planning and development activities cited and a categorized analysis of pertinent questions and answers.

1. Defining short term objectives	(1) (3) (4) (5)
2. Defining medium term objectives	(1) (3) (4) (5)
3. Defining long term objectives	(1) (3) (4) (5)
4. Defining target markets	(1) (3) (5)
5. Establishing the demographic profile of the target audience	(4b) (5)
6. Using lifestyle and behavior traits to establish a profile of the target audience	(4b)
7. Defining the purpose(s) of the project	(1) (3) (4) (4b) (5) (6)
8. Understanding the competitive scenario	(1) (5)
9. Defining the desired functionality types	(1)
10. Identifying execution type (Imall, MSN, Free or Pay Web Site)	None of the firms defined this. Web site is assumed. This should be out of the questionnaire.
11. Exploring technological issues (Operating Systems, security, servers, browsers)	Bandwidth issues, New innovations like Java and Shockwave, New hardware, Government regulation were all primary concerns here.
12. Determining the time line	(2)
13. Determining a budget	(1) (2) (3)
14. Establishing a payback schedule	
15. Doing a cost benefit analysis	
16. Preparing a feasibility document	
17. Preparing a document on information content and/or navigation analysis	(1) (2) (6)
18. Outlining Hardware requirements	Server type, memory, bandwidth plan including expansion, O/S type, scalability, backup, power supply, mirror sites were all mentioned.
19. Investigating if the site reaches its intended audience	(4b)
20. Evaluating whether the Web site's purpose matches its objectives	(3) (4) (5)
21. Evaluating whether the Web site's purpose matches its specifications	(1) (4)
22. Validating the information accuracy	(1) (3) (4)
23. Validating whether or not the information is up-to-date	(1)

24. Analyzing the log statistics to see how files within the site are being accessed	(1) (3) (6)
25. Analyzing the log statistics and using search engines to see how other sites are linked towards your Web site	(1) (3) (6)
26. Establishing whether or not the Web site is meeting users need	(1) (5)
27. A summary of information collected (to management)	(1) (3) (4) (4b)
28. A summary of feedback (to Management from Webmasters)	(1) (6)
29. Evaluating technological issues (Operating Systems, browsers)	(1) (4b) (5)
30. Validating the information completeness	(1) (4) (4b)
31. Proposal to design or implement next phase	(1) (3)
32. Evaluating whether the Web site contributes new information	(1) (5)
33. Defining key messages	(1) (4) (5)
34. Defining information types	(1) (6)
35. Defining the different functionality	(4)
36. Defining logical relationships	(1) (6)
37. Defining links between information types	(1) (6)
38. Developing names and positioning platforms	(1)
39. Drawing an E-R diagram	
40. Creating look and feel that supports brand identity	(2) (3) (4) (6)
41. Create and supervise illustration and photography	(2)
42. Create and supervise prototypes	(2) (3) (4) (4b) (6)
43. Prepare Maps to illustrate the structure and design	(1) (4) (4b) (6)
44. Prepare Thumbnails to illustrate structure and design	(4)
45. Prepare Storyboards to illustrate structure and design	(4)
46. Preparing proposed template	(1) (3) (4)
47. Using HTML tools such as Microsoft FrontPage and Netscape Gold	(2) (6)
48. Identifying navigation metaphors and positioning	(6)
49. Testing to make sure the site is intuitive	(1) (2) (6)

50. Making and approving a set of templates	(1) (2) (3) (4b)
51. Creating an extendible directory and file structure to manage files and programs	While not asking the question, both Bam and Elfe showed object orientation which may involve this...I prefer to leave this question on.
52. Creating graphics, Video and Audio	(1) (2) (4) (4b) (6)
53. Programming (CGI, Java, ActiveX)	(1) (2) (6)
54. Writing and/or converting text	(1) (4) (4b) (6)
55. Proofreading	(1) (6)
56. Alpha testing	Testing is said to be throughout the whole process
57. Beta testing	(2) (3)
58. Training employees to use certain guidelines	(1) (5)
59. Establishing guidelines for information use and updates	(1) (5)
60. Designating a Webmaster as the individual responsible for the upkeep of the site	(1) (5)
61. Establishing a chain of command for the upkeep of a site	(1) (5)
62. Updating information	(1) (5)
63. Changing the look of a Web site	(3) (5)
64. Processing feedback	(1) (3) (6)
65. Defining the audience	(1) (3)
66. Defining the response sought	(1) (3)
67. Defining the key message to be delivered	(4)
68. Offering continuous type content	(1) (3)
69. Participating in mutual pointers	(5) (6)
70. Offering free services to attract users	(3)
71. Sending Press releases about Web site to online publications	(4b) (5)
72. Sending Press releases about Web to hard copy publications	(4b) (5)
73. Advertising site address	(1) (4) (4b) (5)
74. Sending notices to mailing lists	(1) (4b)
75. Sending notices to newsgroups	(4) (4b)

76. Registering URL with search engines and indexes	(1) (2) (3) (4)
77. Having a contest	(1)
78. Involvement of communications professionals	(1) (3) (4b) (5)
79. Involvement of Web site development professionals	(1) (2) (3) (4) (4b) (5)
80. Involvement of an organization's information systems personnel	(1) (3) (4) (5)
81. Involvement of an organization's senior management	(1) (3) (4) (5)
82. Involvement of multiple functional areas	(1) (2) (3) (4) (4b) (5)

Interview Respondents:

1. Firm: PointNet Communication

Interviewed subject: Alain Brousseau

Background: Software Development & Telecommunications

2. Firm: Elfe

Interviewed subject: Dianne Langlois

Background: Graphic Design, HTML coding

3. Firm: GlobalMedic Inc.

Interviewed subject: Louis Veronneau

Background: Software Development, AI Health Care

4. Firm: Bam Solutions

Interviewed subject: Chris Emergui

Background: Marketing & Systems development

4b. Firm: Bam Solutions

Interviewed subject: Dwayne Dear

Background: Marketing & Systems Development

5. Firm: Netzone Communication

Interviewed subject: Johan Deleon

Background: Marketing

6. Firm: Technocap

Interviewed subject: Benoit Farley

Background: Technology Venture Capital - Marketing

APPENDIX 5: PRELIMINARY SURVEY

Planning and Developing World-Wide Web Sites

Web sites have become an important communication tool for many organizations. The purpose of this study is to help understand how marketers can develop successful Web sites. On the following pages you will find a series of questions, each related to some aspect of planning and development of Web sites.

For the purposes of this survey, a Web site is defined as a collection of hyperlinked resources under the same management made available to the public through the Internet. It does not include Intranets. This survey should be completed by the person viewed by the rest of the organization as responsible for the content, rather than the technical support, of the Web site. Please work quickly when completing this survey and record your initial impressions.

For record keeping purposes, please complete the following information. It will be kept separate from your other responses and your data will not be released without your prior consent. Your organization will also not be identified without prior specific consent.

Name: _____

Title: _____

Organization: _____

Address: _____

City: _____ Province: _____

Postal Code: _____

Telephone: _____

Fax: _____

E-mail: _____

*The URL of the Web site you were contacted about _____
(Please use this Web site as a frame of reference when responding to this questionnaire)

Would you like a copy of the results of this questionnaire?   ☐ Yes ☐ No

Please return the survey to (or to get further information):

Herman Tumurcuoglu, Graduate Student

School of Business, Carleton University,

Ottawa, ON K1S 5B6

Phone: 514-279-9245   E-mail: htumurcu@business.carleton.ca

*When answering to the questions please use this Web site as a frame of reference.

Please return the questionnaire either
by e-mail or regular mail.
Thank you very much for your assistance.

Factors affecting the successful planning of a Web site

Please state what the words "successful planning" in the above sentence means to you.

How successful was the planning of the Web site you were contacted about? Please circle the response.

1	2	3	4	5	6	7
Not successful			Very Successful			

The following is a list of activities that may occur within the planning process for a Web site. For each activity listed, you will be asked to gauge the importance of each activity on a scale of 1-7, where 1 represents not important and 7 signifies very important. Please circle the appropriate response.

Before proceeding, Please think of the Web site you were contacted about and use it as a frame of reference.

1. Defining short term objectives	1	2	3	4	5	6	7
	Not important			Very important			
2. Defining medium term objectives.	1	2	3	4	5	6	7
	Not important			Very important			
3. Defining long term objectives.	1	2	3	4	5	6	7
	Not important			Very important			
4. Defining target markets.	1	2	3	4	5	6	7
	Not important			Very important			
5. Establishing the demographic profile of the target audience.	1	2	3	4	5	6	7

	Not important				Very important			
6. Establishing the psychographic profile of the target audience.	1	2	3	4	5	6	7	
	Not important				Very important			
7. Defining the purpose of the project.	1	2	3	4	5	6	7	
	Not important				Very important			
8. Understanding the competitive scenario.	1	2	3	4	5	6	7	
	Not important				Very important			
9. Defining the desired functionality types.	1	2	3	4	5	6	7	
	Not important				Very important			
10. Identifying execution type (Imall, MSN, Free or Pay Web Site).	1	2	3	4	5	6	7	
	Not important				Very important			
11. Exploring technological issues (Operating Systems, browsers).	1	2	3	4	5	6	7	
	Not important				Very important			
12. Determining the time line.	1	2	3	4	5	6	7	
	Not important				Very important			
13. Determining a budget.	1	2	3	4	5	6	7	
	Not important				Very important			
14. Establishing a payback schedule.	1	2	3	4	5	6	7	
	Not important				Very important			
15. Doing a cost benefit analysis.	1	2	3	4	5	6	7	
	Not important				Very important			
16. Preparing a feasibility document.	1	2	3	4	5	6	7	
	Not important				Very important			
17. Preparing a document on information content and/or navigation analysis.	1	2	3	4	5	6	7	
	Not important				Very important			

18. Outlining Hardware requirements.

1	2	3	4	5	6	7
Not important				Very important		

19. Involvement of communications professionals.

1	2	3	4	5	6	7
Not important				Very important		

20. Involvement of Web site development professionals.

1	2	3	4	5	6	7
Not important				Very important		

21. Involvement of an organization's information systems personnel.

1	2	3	4	5	6	7
Not important				Very important		

22. Involvement of an organization's senior management.

1	2	3	4	5	6	7
Not important				Very important		

23. Involvement of multiple functional areas.

1	2	3	4	5	6	7
Not important				Very important		

Factors affecting the successful Analysis of a Web site

Please state what the words "successful Analysis" in the above sentence means to you.

How successful was the Analysis of the Web site you were contacted about? Please circle the response.

1	2	3	4	5	6	7
Not successful			Very Successful			

The following is a list of activities that may occur within the development process for a Web site. For each activity listed, you will be asked to gauge the importance of each activity on a scale of 1-7, where 1 represents not important and 7 signifies very important. Please circle the appropriate response.

Before proceeding, Please think of the Web site you were contacted about and use it as a frame of reference.

1. Investigating if the site reaches its intended audience.	1	2	3	4	5	6	7
	Not important			Very important			
2. Evaluating whether the Web site's purpose matches its objectives.	1	2	3	4	5	6	7
	Not important			Very important			
3. Evaluating whether the Web site's purpose matches its specifications.	1	2	3	4	5	6	7
	Not important			Very important			
4. Validating the information accuracy.	1	2	3	4	5	6	7
	Not important			Very important			
5. Validating whether or not the information is up-to-date.	1	2	3	4	5	6	7

	Not important				Very important
	1	2	3	4	5 6 7
6. Analyzing the log statistics to see how files within the site are being accessed.					
	Not important				Very important
	1	2	3	4	5 6 7
7. Analyzing the log statistics and using search engines to see how other sites are linked towards your Web site.					
	Not important				Very important
	1	2	3	4	5 6 7
8. Establishing whether or not the Web site is meeting users need.					
	Not important				Very important
	1	2	3	4	5 6 7
9. A summary of information collected.					
	Not important				Very important
	1	2	3	4	5 6 7
10. A summary of feedback.					
	Not important				Very important
	1	2	3	4	5 6 7
11. Re-evaluating technological issues (Operating Systems, browsers).					
	Not important				Very important
	1	2	3	4	5 6 7
12. Validating the information completeness.					
	Not important				Very important
	1	2	3	4	5 6 7
13. Proposal to design or implement next phase.					
	Not important				Very important
	1	2	3	4	5 6 7
14. Evaluating whether the Web site contributes new information.					
	Not important				Very important
	1	2	3	4	5 6 7
15. Involvement of communications professionals.					
	Not important				Very important
	1	2	3	4	5 6 7
16. Involvement of Web site development professionals.					
	Not important				Very important
	1	2	3	4	5 6 7
17. Involvement of an organization's information systems personnel.					
	Not important				Very important

18. Involvement of an organization's senior management.

1   2   3   4   5   6   7

Not important

Very important

19. Involvement of multiple functional areas.

1   2   3   4   5   6   7

Not important

Very important

Factors affecting the successful Design of a Web site

Please state what the words "successful Design" in the above sentence means to you.

How successful was the design of the Web site you were contacted about? Please circle the response.

1	2	3	4	5	6	7
Not successful				Very Successful		

The following is a list of activities that may occur within the designing process for a Web site. For each activity listed, you will be asked to gauge the importance of each activity on a scale of 1-7, where 1 represents not important and 7 signifies very important. Please circle the appropriate response.

Before proceeding, Please think of the Web site you were contacted about and use it as a frame of reference.

1. Defining key messages.	1	2	3	4	5	6	7
	Not important				Very important		
2. Defining information types.	1	2	3	4	5	6	7
	Not important				Very important		
3. Defining the different functionality.	1	2	3	4	5	6	7
	Not important				Very important		
4. Defining logical relationships.	1	2	3	4	5	6	7
	Not important				Very important		
5. Defining links between information types.	1	2	3	4	5	6	7

	Not important				Very important		
6. Developing names and positioning platforms	1	2	3	4	5	6	7
	Not important				Very important		
7. Drawing an E-R diagram	1	2	3	4	5	6	7
	Not important				Very important		
8. Creating look and feel that supports brand identity.	1	2	3	4	5	6	7
	Not important				Very important		
9. Create and supervise illustration and photography.	1	2	3	4	5	6	7
	Not important				Very important		
10. Create and supervise prototypes.	1	2	3	4	5	6	7
	Not important				Very important		
11. Prepare Maps to illustrate the structure and design.	1	2	3	4	5	6	7
	Not important				Very important		
12. Prepare Thumbnails to illustrate structure and design.	1	2	3	4	5	6	7
	Not important				Very important		
13. Prepare Storyboards to illustrate structure and design.	1	2	3	4	5	6	7
	Not important				Very important		
14. Preparing proposed template.	1	2	3	4	5	6	7
	Not important				Very important		
15. HTML tools.	1	2	3	4	5	6	7
	Not important				Very important		
16. Identify navigation metaphors and positioning.	1	2	3	4	5	6	7
	Not important				Very important		
17. Test to make sure it is intuitive.	1	2	3	4	5	6	7
	Not important				Very important		

18. Involvement of communications professionals.	1	2	3	4	5	6	7
	Not important				Very important		
19. Involvement of an organization's information systems personnel.	1	2	3	4	5	6	7
	Not important				Very important		
20. Involvement of an organization's senior management.	1	2	3	4	5	6	7
	Not important				Very important		
21. Involvement of multiple functional areas.	1	2	3	4	5	6	7
	Not important				Very important		

Factors affecting the successful implementation of a Web site

Please state what the words "successful implementation" in the above sentence means to you.

- How successful was the implementation of the Web site you were contacted about? Please circle the response.

1	2	3	4	5	6	7
Not successful				Very Successful		

The following is a list of activities that may occur within the development process for a Web site. For each activity listed, you will be asked to gauge the importance of each activity on a scale of 1-7, where 1 represents not important and 7 signifies very important. Please circle the appropriate response.

Before proceeding, Please think of the Web site you were contacted about and use it as a frame of reference.

1. Making and approving template.	1	2	3	4	5	6	7
	Not important				Very important		
2. Create an extensible directory and file structure to manage files and programs.	1	2	3	4	5	6	7
	Not important				Very important		
3. Using HTML tools.	1	2	3	4	5	6	7
	Not important				Very important		
4. Creating graphics, Video and Audio.	1	2	3	4	5	6	7
	Not important				Very important		

5. Programming.	1	2	3	4	5	6	7
	Not important				Very important		
6. Writing and converting text.	1	2	3	4	5	6	7
	Not important				Very important		
7. Proofreading.	1	2	3	4	5	6	7
	Not important				Very important		
8. Alpha testing.	1	2	3	4	5	6	7
	Not important				Very important		
9. Beta testing.	1	2	3	4	5	6	7
	Not important				Very important		
10. Beta testing.	1	2	3	4	5	6	7
	Not important				Very important		
11. Involvement of communications professionals.	1	2	3	4	5	6	7
	Not important				Very important		
12. Involvement of Web site development professionals.	1	2	3	4	5	6	7
	Not important				Very important		
13. Involvement of an organization's information systems personnel.	1	2	3	4	5	6	7
	Not important				Very important		
14. Involvement of an organization's senior management.	1	2	3	4	5	6	7
	Not important				Very important		
15. Involvement of multiple functional areas.	1	2	3	4	5	6	7
	Not important				Very important		

Factors affecting the successful maintenance of a Web site

Please state what the words "successful maintenance" in the above sentence means to you.

- How successful has the maintenance of your Web site been? Please circle the response.

1	2	3	4	5	6	7
Not successful				Very Successful		

The following is a list of activities that may occur within the maintenance for a Web site. For each activity listed, you will be ask to gauge the importance of each activity on a scale of 1-7, where 1 represents not important and 7 signifies very important. Please circle the appropriate response.

Before proceeding, Please think of the Web site you were contacted about and use it as a frame of reference.

1. Training employees to use certain guidelines.	1	2	3	4	5	6	7
	Not important				Very important		
2. Establishing guidelines for information use and updates.	1	2	3	4	5	6	7
	Not important				Very important		
3. Designating a Webmaster as the individual responsible for the upkeep of the Site.	1	2	3	4	5	6	7
	Not important				Very important		
4. Establishing a chain of command for the upkeep of a site.	1	2	3	4	5	6	7
	Not important				Very important		
5. Updating information.	1	2	3	4	5	6	7

	Not important				Very important			
6. Changing the look of a Web site.	1	2	3	4	5	6	7	
	Not important				Very important			
7. Processing feedback.	1	2	3	4	5	6	7	
	Not important				Very important			
8. Involvement of communications professionals.	1	2	3	4	5	6	7	
	Not important				Very important			
9. Involvement of Web site development professionals.	1	2	3	4	5	6	7	
	Not important				Very important			
10. Involvement of an organization's information systems personnel.	1	2	3	4	5	6	7	
	Not important				Very important			
11. Involvement of an organization's senior management.	1	2	3	4	5	6	7	
	Not important				Very important			
12. Involvement of multiple functional areas.	1	2	3	4	5	6	7	
	Not important				Very important			

Factors affecting the successful promotion of a Web site

Please state what the words "successful development" in the above sentence means to you.

How successful was the promotion of the Web site you were contacted about? Please circle the response.

1	2	3	4	5	6	7
Not successful				Very Successful		

The following is a list of activities that may occur within the promotion for a Web site. For each activity listed, you will be asked to gauge the importance of each activity on a scale of 1-7, where 1 represents not important and 7 signifies very important. Please circle the appropriate response.

Before proceeding, Please think of the Web site you were contacted about and use it as a frame of reference.

1. Offering continuous type content.	1	2	3	4	5	6	7
	Not important				Very important		
2. Participating in mutual pointers.	1	2	3	4	5	6	7
	Not important				Very important		
3. Offering free services to attract users.	1	2	3	4	5	6	7
	Not important				Very important		
4. Sending Press releases to hard copy publications.	1	2	3	4	5	6	7
	Not important				Very important		
5. Advertising site address.	1	2	3	4	5	6	7

	Not important				Very important			
6. Sending notices to mailing lists.	1	2	3	4	5	6	7	
	Not important				Very important			
7. Sending notices to Newsgroups.	1	2	3	4	5	6	7	
	Not important				Very important			
8. Registering URL with search engines and indexes.	1	2	3	4	5	6	7	
	Not important				Very important			
9. Having a contest.	1	2	3	4	5	6	7	
	Not important				Very important			
10. Involvement of communications professionals.	1	2	3	4	5	6	7	
	Not important				Very important			
11. Involvement of Web site development professionals.	1	2	3	4	5	6	7	
	Not important				Very important			
12. Involvement of an organization's information systems personnel.	1	2	3	4	5	6	7	
	Not important				Very important			
13. Involvement of an organization's senior management.	1	2	3	4	5	6	7	
	Not important				Very important			
14. Involvement of multiple functional areas.	1	2	3	4	5	6	7	
	Not important				Very important			

General

The goal of these questions is to capture critical factors about your work environment.

1. Please provide your job title. _____

2. What industry is your organization in?

_____

3. What word best describes the geographic scope in which your organization operates?

☐ Local   ☐ Regional   ☐ National   ☐ International

4. How long have you been in your current position?

_____ Years and _____ Months

5. How long have you been with this organization?

_____ Years and _____ Months

Please provide any other comments you might have.

Please return this survey to:

*Herman Tumurcuoglu (Graduate Student)
School of Business Carleton University
Ottawa, ON K1S 5B6
E-mail: hermant@microntec.net*

APPENDIX 6: FINAL SURVEY

Planning and Developing World-Wide Web Sites

Web sites have become an important communication tool for many organizations. The purpose of this study is to help understand how marketers can develop successful Web sites. On the following pages you will find a series of questions, each related to some aspect of planning and development of Web sites.

For the purposes of this survey, a Web site is defined as a collection of hyperlinked resources under the same management made available to the public through the Internet. It does not include Intranets or Extranets. This survey should be completed by the person viewed by the rest of the organization as responsible for the content, rather than the technical support, of the Web site. Please work quickly when completing this survey and record your initial impressions.

For record keeping purposes, please complete the following information. It will be kept separate from your other responses and your data will not be released without your prior consent. Your organization will also not be identified without prior specific consent.

Name: _____

Title: _____

Organization: _____

Address: _____

City: _____ Province: _____

Postal Code: _____

Telephone: _____

Fax: _____

E-mail: _____

*The URL of the Web site you were contacted about _____
(Please use this Web site as a frame of reference when responding to this questionnaire)

Would you like a copy of the results of this questionnaire? ☐ Yes ☐ No

Please return the survey to (or to get further information):

Herman Tumurcuoglu, Graduate Student

School of Business, Carleton University,

Ottawa, ON K1S 5B6

Phone: (514) 279-9245 E-mail: hermant@microtec.net Fax: (613) 520-4427

*When answering to the questions please think of this Web site.

Please return the questionnaire either by fax or regular mail. Thank you very much for your assistance.

Web site and Marketing Objectives

Please state the Marketing objective(s) of your Web site?

MKTOBJ1= Communicate with audience.

MKTOBJ4= Increase awareness among a segment.

MKTOBJ2= Collect information on user (database). MKTOBJ5= Customer service.

MKTOBJ3= Promote company, products and services. MKTOBJ6= Demonstrate product or service.

MKTOBJ7= Increase sales or leads MKTOBJ8= Tap into new markets MKTOBJ9= Other

How is a Web site different from other marketing communication tools.

MKTTOOL1= Interactive MKTTOOL4= Audience control

MKTTOOL2= Global MKTTOOL5= Other

MKTTOOL3= Cost efficient

How does your company Web site affect the marketing function in your firm?

MKTFUNC1= Streamline or automate certain functions

MKTFUNC5= Increase in scope

MKTFUNC2= Increase in sales (or leads)

MKTFUNC6= Others

MKTFUNC3= Force to rethink messages (targeting, tailoring, updating etc..)

MKTFUNC4= Does not effect

Factors affecting the successful planning of a Web site

Please state what the words "successful planning" in the above sentence means to you.

DEFPLAN1= Error reduction (error free)

DEFPLAN7= Other

DEFPLAN2= Good coordination

DEFPLAN3= Meeting time line

DEFPLAN4= Foresee difficulty

DEFPLAN5= Achieve objectives

DEFPLAN6= Other activity related items found below

How successful was the planning of the Web site you were contacted about? Please circle the response.

1	2	3	4	5	6	7
Not Successful			Very Successful			

The following statements ask your opinion on several factors that have been identified as influencing the successful planning of a WWW site. Circle the number to the right of the statement that best reflects your opinion about that statement (1=strongly disagree, 7=strongly agree).

Before proceeding, Please think of the Web site you were contacted about.

1. Defining the objectives of a Web site contributes to the successful planning of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
2. Partitioning the various phases (builds or sections) and establishing priorities contributes to the successful planning of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
3. Defining target markets contributes to the successful planning of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
4. Establishing the demographic profile of the target audience contributes to the successful planning of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
5. Using lifestyle and behavior traits to establish a profile of the target audience contributes to the successful planning of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
6. Defining the purpose(s) of the Web site contributes to	1	2	3	4	5	6	7

the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
7. Understanding the competitive scenario on the World Wide Web contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
8. Defining the desired functionality types contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
9. Investigating future technological innovations and issues (Operating Systems, security, servers, browsers) contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
10. Determining the time line contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
11. Determining a budget contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
12. Establishing a payback schedule contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
13. Doing a cost benefit analysis contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
14. Preparing a feasibility document contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
15. Preparing a document on information content and/or navigation analysis contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
16. Outlining Hardware requirements for maintaining the Web site contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
17. Involvement of communications professionals contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
18. Involvement of Web site development professionals contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
19. Involvement of an organization's information systems personnel contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		
20. Involvement of an organization's senior management contributes to the successful planning of a Web site.	Strongly Disagree		Neutral		Strongly Agree
	1 2	3 4 5	6 7		

	1	2	3	4	5	6	7
21. Involvement of multiple functional areas contributes to the successful planning of a Web site.	Strongly Disagree			Neutral		Strongly Agree	
22. Please mention other activities that you feel contributes to the successful planning of a Web site.							

Factors affecting the successful Analysis of a Web site

Please state what the words "successful Analysis" in the above sentence means to you.

DEFANAL1= Measuring Output (including derivatives such as mailing lists and leads)

DEFANAL2= Assessment of performance

DEFANAL3= User response

DEFANAL4= Testing

DEFANAL5= Other activity related answers found below

DEFANAL6= Other

How successful was the Analysis of the Web site you	1	2	3	4	5	6	7
were contacted about? Please circle the response.	Not Successful			Very Successful			

The following statements ask your opinion on several factors that have been identified as influencing the successful analysis of a WWW site. Circle the number to the right of the statement that best reflects your opinion about that statement (1=strongly disagree, 7=strongly agree).

Before proceeding, Please think of the Web site you were contacted about.

1. Investigating if the site reaches its intended audience contributes to the successful analysis of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
2. Evaluating whether the Web site's purpose matches its objectives contributes to the successful analysis of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
3. Evaluating whether the Web site's purpose matches its specifications contributes to the successful analysis of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
4. Validating the information accuracy contributes to the successful analysis of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
5. Validating whether or not the information is up-to-date contributes to the successful analysis of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
6. Analyzing the log statistics to see how files within the	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	

Factors affecting the successful Design of a Web site

Please state what the words "successful Design" in the above sentence means to you.

DEFDESIG1= Easy navigation

DEFDESIG2= Interesting Visuals

DEFDESIG3= Information richness

DEFDESIG4= Look and feel

DEFDESIG5= Easy to read

DEFDESIG6= Other

How successful was the design of the Web site you were contacted about? Please circle the response.	1	2	3	4	5	6	7
	Not Successful				Very Successful		

The following statements ask your opinion on several factors that have been identified as influencing the successful design of a WWW site. Circle the number to the right of the statement that best reflects your opinion about that statement (1=strongly disagree, 7=strongly agree).

Before proceeding, Please think of the Web site you were contacted about.

1. Defining key messages contributes to the successful design of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
2. Defining the different functionality contributes to the successful design of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
3. Defining logical relationships contributes to the successful design of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
4. Defining links between different information types contributes to the successful design of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
5. Drawing an E-R diagram and data flow diagrams contributes to the successful design of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
6. Creating the look and feel that supports brand identity contributes to the successful design of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	

7. Create and supervise illustration and photography contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
8. Create and supervise prototypes contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
9. Conducting a formal image research (search of set of possible images to include in the Web site) contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
10. Prepare Maps to illustrate the structure and design contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
11. Prepare Thumbnails to illustrate structure and design contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
12. Prepare Storyboards to illustrate structure and design contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
13. Preparing proposed template contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
14. Using HTML tools such as Microsoft FrontPage and Netscape Gold contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
15. Identifying navigation metaphors and positioning contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
16. Testing to make sure the site is intuitive contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
17. Involvement of communications professionals contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
18. Involvement of Web site development professionals contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
19. Involvement of an organization's information systems personnel contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
20. Involvement of an organization's senior management contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
21. Involvement of multiple functional areas contributes to the successful design of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7

22. Please mention other activities that you feel contributes to the successful design of a Web site.

Factors affecting the successful implementation of a Web site

Please state what the words "successful implementation" in the above sentence means to you.

DEFIMPLE1= Shorter lead time or increased pace of development (no restart or few problems included).

DEFIMPLE2= Output (site functions well)

DEFIMPLE7= Other

DEFIMPLE3= Avoid being lost in your own Web site

DEFIMPLE4= Attain goals

DEFIMPLE5= Good coordination

DEFIMPLE6= Other activity oriented answers found below

How successful was the implementation of the Web site	1	2	3	4	5	6	7
you were contacted about? Please circle the response.	Not Successful			Very Successful			

The following statements ask your opinion on several factors that have been identified as influencing the successful implementation of a WWW site. Circle the number to the right of the statement that best reflects your opinion about that statement (1=strongly disagree, 7=strongly agree).

Before proceeding, Please think of the Web site you were contacted about.

1. Making and approving a set of templates contributes to the successful implementation of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
2. Creating an extendible directory and file structure to manage files and programs contributes to the successful implementation of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
3. Using HTML tools such as Microsoft FrontPage and Netscape Gold contributes to the successful implementation of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
4. Creating graphics, Video and Audio contributes to the successful implementation of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
5. Programming (CGI, Java, ActiveX) contributes to the successful implementation of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	

6. Writing and/or converting text contributes to the successful implementation of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
7. Proofreading and validating written content contributes to the successful implementation of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
8. Beta testing contributes to the successful implementation of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
9. Porting new version or additions to the site in a separate directory or domain on the same server as the official Web site in order to Validate and test contributes to the successful implementation of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
10. Involvement of communications professionals contributes to the successful implementation of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
11. Involvement of Web site development professionals contributes to the successful implementation of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
12. Involvement of an organization's information systems personnel contributes to the successful implementation of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
13. Involvement of an organization's senior management contributes to the successful implementation of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
14. Involvement of multiple functional areas contributes to the successful implementation of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
15. Please mention other activities that you feel contributes to the successful implementation of a Web site.							

Factors affecting the successful maintenance of a Web site

Please state what the words "successful maintenance" in the above sentence means to you.

DEFMAINT1= Site is available for service

DEFMAINT6= Other

DEFMAINT2= Contributes new information (fresh, updated, evolution and growth all included here).

DEFMAINT3= Good coordination to upkeep the site (between departments)

DEFMAINT4= Good Webmastering (good project leader)

DEFMAINT5 = Other activity related answers found below

How successful has the maintenance of your Web site	1	2	3	4	5	6	7
been? Please circle the response.	Not Successful			Very Successful			

The following statements ask your opinion on several factors that have been identified as influencing the successful maintenance of a WWW site. Circle the number to the right of the statement that best reflects your opinion about that statement (1=strongly disagree, 7=strongly agree).

Before proceeding. Please think of the Web site you were contacted about.

1. Training employees to use certain guidelines contributes to the successful maintenance of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Disagree	7
2. Establishing guidelines for information use and updates contributes to the successful maintenance of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
3. Designating a Webmaster as the individual responsible for the upkeep of the site contributes to the successful maintenance of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
4. Establishing a chain of command for the upkeep of a site contributes to the successful maintenance of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
5. Updating information contributes to the successful maintenance of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
6. Changing the look of a Web site (without changing the content) contributes to the successful maintenance of a	1 Strongly	2	3	4 Neutral	5	6 Strongly	7

Web site.	Disagree					Agree	
	1	2	3	4	5	6	7
7. Processing feedback from users to management contributes to the successful maintenance of a Web site.	Strongly Disagree			Neutral		Strongly Agree	
8. Involvement of communications professionals contributes to the successful maintenance of a Web site.	Strongly Disagree			Neutral		Strongly Agree	
9. Involvement of Web site development professionals contributes to the successful maintenance of a Web site.	Strongly Disagree			Neutral		Strongly Agree	
10. Involvement of an organization's information systems personnel contributes to the successful maintenance of a Web site.	Strongly Disagree			Neutral		Strongly Agree	
11. Involvement of an organization's senior management contributes to the successful maintenance of a Web site.	Strongly Disagree			Neutral		Strongly Agree	
12. Involvement of multiple functional areas contributes to the successful maintenance of a Web site.	Strongly Disagree			Neutral		Strongly Agree	
13. Please mention other activities that you feel contributes to the successful maintenance of a Web site.							

Factors affecting the successful promotion of a Web site

Please state what the words "successful promotion" in the above sentence means to you.

DEFPROMO1= Hits or site traffic

DEFPROMO7= Other activity oriented answers found below

DEFPROMO2= Unique visitors (unique hosts)

DEFPROMO3= Qualified visitors

DEFPROMO4= Reaching intended audience

DEFPROMO5= Media coverage and marketing effort to back the site (press, advertising, trade shows).

DEFPROMO6= Feedback

How successful was the promotion of the Web site you were contacted about? Please circle the response.

1	2	3	4	5	6	7
Not Successful			Very Successful			

The following statements ask your opinion on several factors that have been identified as influencing the successful promotion of a WWW site. Circle the number to the right of the statement that best reflects your opinion about that statement (1=strongly disagree, 7=strongly agree).

Before proceeding, Please think of the Web site you were contacted about.

1. Defining the audience contributes to the successful promotion of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
2. Defining the response sought contributes to the successful promotion of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
3. Defining the key message to be delivered contributes to the successful promotion of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
4. Offering regularly updated content (story, news, cartoon) contributes to the successful promotion of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
5. Participating in mutual pointers contributes to the successful promotion of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	
6. Offering free services to attract users contributes to the successful promotion of a Web site.	1	2	3	4	5	6	7
	Strongly Disagree			Neutral		Strongly Agree	

7. Sending Press releases to online publications contributes to the successful promotion of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
8. Sending Press releases about the Web site to hard copy publications contributes to the successful promotion of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
9. Advertising site address about the Web site contributes to the successful promotion of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
10. Sending notices about the Web site to mailing lists and newsgroups contributes to the successful promotion of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
11. Registering URL of the Web site with search engines, directories and indexes contributes to the successful promotion of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
12. Having a contest on the Web contributes to the successful promotion of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
13. Involvement of communications professionals contributes to the successful promotion of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
14. Involvement of Web site development professionals contributes to the successful promotion of a Web site.	1 Strongly Agree	2	3	4 Neutral	5	6 Strongly Disagree	7
15. Involvement of an organization's information systems personnel contributes to the successful promotion of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
16. Involvement of an organization's senior management contributes to the successful promotion of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
17. Involvement of multiple functional areas contributes to the successful promotion of a Web site.	1 Strongly Disagree	2	3	4 Neutral	5	6 Strongly Agree	7
18. Please mention other activities that you feel contributes to the successful promotion of a Web site.							

General

The goal of these questions is to capture critical factors about your work environment.

1. Please provide your job title. _____
2. What industry is your organization in?
_____
3. What word best describes the geographic scope in which your organization operates?
☐ Local   ☐ Regional   ☐ National   ☐ International
4. How long have you been in your current position?
                              _____ Years and _____ Months
5. How long have you been with this organization?
                              _____ Years and _____ Months

Please provide any other comments you might have.

Please return this survey to:

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 School of Business Carleton University
 Ottawa, ON K1S 5B6
 E-mail: hermans@microntec.net
 Fax: (613) 520-4427*

APPENDIX 7: PROPOSED WEB SITE PLANNING AND DEVELOPMENT MODEL

Phase 1: Planning

1. Define Objectives
  - Short term objectives
  - Medium term objectives
  - Long term objectives
2. Defining target markets. Establish demographic and psychographic profile of target audiences.
3. Defining purpose. Identify project content: What is to be sold, promoted, or provided?
4. Evaluate competitive scenario
5. Define desired functionality types (strategy): Online Storefront. Internet Presence. Content. Mall. Incentive Site. Search Agent.
6. Identify desired features (chat, commerce)?
7. Identify execution type: Web site. Imall. MSN. America Online?
8. Explore technological issues: operating systems, browsers etc.

Analysis

- I. Evaluate if the Web site's purpose matches its objectives and specifications.
- II. Determine Time line
- III. Determine Budget
- IV. Cost-Benefit Analysis

DELIVERABLES:

- Policies for information development and use.
  - Feasibility Document (including: time line, budget and payback schedule if possible)
  - Information Navigation Analysis
  - Hardware Requirements
- Proposal to design first or next phase of the Web site.

Phase 2: Design

1. Modeling.
  - Asses content
    - Define key messages
    - Define information types and functionality

- Define logical relationships
- Define links between information types
- Drawing an E-R diagram or a map
- Preparing Storyboards to illustrate structure and design
- Prepare thumbnails to illustrate structure and design

- Perform brainstorming and concepting
- Develop names and positioning platforms
- Create and supervise prototypes
- Create and supervise illustration and photography
- Make necessary modifications

1. Entity Design.

- Create look and feel that supports brand identity.
- Create and supervise creation of illustration, photography and or writing prototypes.
- Prepare a proposed template
- Make necessary modifications
- Use HTML tools where helpful

1. Navigation Design.

- Identify positioning and metaphors (including perspectives)
- Test to make sure it is intuitive
- Make necessary modifications
- Use HTML tools where helpful

Analysis

- I. Determine if Web site design reinforces brand identity.
- II. Determine if the design is consistent.
- III. Evaluate the self evidence and intuitive nature of the Web site.
- IV. Evaluate information richness.

DELIVERABLES:

- A summary of information collected and possible modifications.
- Maps, thumbnails and Storyboards.
- Approval of template.
- A proposal to implement the first or next phase of the Web site.

Phase 3: Production

This stage is iterative, cyclical and may make use of prototyping.

1. Produce:

- Create an extendible directory and file structure to manage the Web's files and/or software components (CGI or Java programs)
- Use HTML tools where helpful
- Graphics
- Programming
- Text write all needed text. Revise and Condense (retraining the idea that less is better)
- Video
- Sound
- Expand for multiple browsers, operating systems and hardware

2. Check

- Alpha test
- Check all links
- Proofread the work

4. Beta Test

- Put online (upload Web site)
- Test again
- Check the Web's implementation in various browsers
- Display beta test site and invite users to e-mail feedback
- Make necessary modifications

Analysis:

- I. Collect feedback from beta test and understand how the site can be improved further in the future.
- II. Determine if the site is presently accomplishing objectives that meet the needs of the users.
- III. Determine the resources needed to maintain and upkeep the Web site.

DELIVERABLES:

- A fully functional Web site.
- Approval to launch Web site.
- Agreement on the resources dedicated to maintaining the site. Who will be the Webmaster, who will supply the content, who will validate the content...etc.
- Upper management commitment (if possible).

Phase 4: Postproduction

1. Beta testing
  2. Encourage feedback
  3. Evaluate the final product
  4. Maintain:
    - Update information
    - Change look from time to time
-
1. Promote:
    - Mutual pointers
    - Advertising
    - Announcements to Online publications
    - Announcements to regular press
    - Contests
-
1. Expand and enhancement

Analysis

- I. Validate the domain information presented, is accurate, up-to-date, and complete?
- II. Is the Web site accessed in a balanced manner, both in terms of its own files and in terms of outside links into it?
- III. Is accomplishing objectives that meet the needs of the users?
- IV. What is the feedback from users and other Web sites?

DELIVERABLES:

1. Policies for information development and use.
  - Feasibility Document (including: time line, budget and payback schedule if possible)
  - Information Navigation Analysis
  - Hardware Requirements
2. Proposal to develop the next build of the Web site.

APPENDIX 8: SECTIONAL ANOVA AND DESCRIPTIVE SCORES

PLANNING

Variable SCORES
By Variable PLANNING

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	20	406.6990	20.3349	10.9931	.0000
Within Groups	628	1161.6677	1.8498		
Total	648	1568.3667			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean
Grp 1	31	6.6129	.5584	.1003	6.4081 TO 6.8177
Grp 2	31	6.0000	1.1255	.2021	5.5872 TO 6.4128
Grp 3	31	5.9032	1.1932	.2143	5.4656 TO 6.3409
Grp 4	31	5.0000	1.2649	.2272	4.5360 TO 5.4640
Grp 5	31	4.3226	1.4919	.2680	3.7753 TO 4.8698
Grp 6	31	6.5484	.6239	.1121	6.3195 TO 6.7772
Grp 7	31	5.5806	1.3360	.2400	5.0906 TO 6.0707
Grp 8	31	5.4839	1.0605	.1905	5.0949 TO 5.8729
Grp 9	31	5.8065	1.0462	.1879	5.4227 TO 6.1902
Grp10	31	5.5484	1.3623	.2447	5.0487 TO 6.0481
Grp11	31	5.2258	1.6064	.2885	4.6366 TO 5.8151
Grp12	31	3.4194	1.2048	.2164	2.9774 TO 3.8613
Grp13	31	3.9355	1.6720	.3003	3.3222 TO 4.5488
Grp14	31	4.2581	1.3408	.2408	3.7662 TO 4.7499
Grp15	31	5.0645	1.4127	.2537	4.5463 TO 5.5827
Grp16	31	5.1613	1.3928	.2501	4.6504 TO 5.6722
Grp17	30	5.0000	1.5757	.2877	4.4116 TO 5.5884
Grp18	31	5.8710	1.4081	.2529	5.3545 TO 6.3875
Grp19	31	4.5806	1.8579	.3337	3.8992 TO 5.2621
Grp20	30	4.9000	1.7685	.3229	4.2396 TO 5.5604
Grp21	31	5.3226	1.4919	.2680	4.7753 TO 5.8698
Total	648	5.2173	1.5557	.0611	5.0973 TO 5.3372

GROUP	MINIMUM	MAXIMUM
Grp 1	5.0000	7.0000
Grp 2	3.0000	7.0000
Grp 3	4.0000	7.0000
Grp 4	2.0000	7.0000
Grp 5	1.0000	7.0000
Grp 6	5.0000	7.0000
Grp 7	3.0000	7.0000
Grp 8	4.0000	7.0000
Grp 9	3.0000	7.0000
Grp10	2.0000	7.0000
Grp11	1.0000	7.0000
Grp12	1.0000	5.0000

Grp13	1.0000	7.0000
Grp14	1.0000	7.0000
Grp15	2.0000	7.0000
Grp16	1.0000	7.0000
Grp17	1.0000	7.0000
Grp18	2.0000	7.0000
Grp19	1.0000	7.0000
Grp20	1.0000	7.0000
Grp21	2.0000	7.0000
TOTAL	1.0000	7.0000

- - - - - O N E W A Y - - - - -

Variable SCORES
By Variable PLANNING

Multiple Range Tests: Scheffe test with significance level .05

The difference between two means is significant if
 $\text{MEAN}(J) - \text{MEAN}(I) \geq .9617 * \text{RANGE} * \text{SQRT}(1/N(I) + 1/N(J))$
 with the following value(s) for RANGE: 7.97

(*) Indicates significant differences which are shown in the lower triangle

[illegible]

DESIGN

Variable SCORES
By Variable DESIGN

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	20	291.8998	14.5950	6.7003	.0000
Within Groups	626	1363.5871	2.1783		
Total	646	1655.4869			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean		
Grp 1	31	5.8710	1.2313	.2212	5.4193	TO	6.3226
Grp 2	31	5.7419	1.3897	.2496	5.2322	TO	6.2517
Grp 3	30	6.0000	1.1142	.2034	5.5840	TO	6.4160
Grp 4	31	5.7419	1.0636	.1910	5.3518	TO	6.1321
Grp 5	29	5.0000	1.7525	.3254	4.3334	TO	5.6666
Grp 6	31	6.2258	1.2572	.2258	5.7646	TO	6.6870
Grp 7	31	5.8387	.9694	.1741	5.4831	TO	6.1943
Grp 8	31	5.5161	1.5027	.2699	4.9649	TO	6.0673
Grp 9	31	5.0000	1.4606	.2623	4.4642	TO	5.5358
Grp10	31	5.1935	1.3271	.2384	4.7068	TO	5.6803
Grp11	31	4.7097	1.3951	.2506	4.1980	TO	5.2214
Grp12	31	5.0323	1.4488	.2602	4.5008	TO	5.5637
Grp13	31	5.6129	1.5422	.2770	5.0472	TO	6.1786
Grp14	30	4.4000	1.9226	.3510	3.6821	TO	5.1179
Grp15	31	5.7419	1.5910	.2857	5.1584	TO	6.3255
Grp16	31	6.1290	1.2039	.2162	5.6874	TO	6.5706
Grp17	31	4.8065	1.8515	.3325	4.1273	TO	5.4856
Grp18	31	6.3548	.7549	.1356	6.0779	TC	6.6317
Grp19	31	4.2258	1.6675	.2995	3.6142	TO	4.8375
Grp20	31	4.0000	2.0656	.3710	3.2423	TO	4.7577
Grp21	31	4.6129	1.7640	.3168	3.9658	TO	5.2600
Total	647	5.3230	1.6008	.0629	5.1994	TO	5.4466

GROUP	MINIMUM	MAXIMUM
Grp 1	2.0000	7.0000
Grp 2	1.0000	7.0000
Grp 3	3.0000	7.0000
Grp 4	3.0000	7.0000
Grp 5	1.0000	7.0000
Grp 6	3.0000	7.0000
Grp 7	4.0000	7.0000
Grp 8	2.0000	7.0000
Grp 9	2.0000	7.0000
Grp10	2.0000	7.0000
Grp11	2.0000	7.0000
Grp12	1.0000	7.0000
Grp13	1.0000	7.0000
Grp14	1.0000	7.0000
Grp15	1.0000	7.0000
Grp16	3.0000	7.0000
Grp17	1.0000	7.0000
Grp18	4.0000	7.0000
Grp19	1.0000	7.0000

Grp20	1.0000	7.0000
Grp21	1.0000	7.0000
TOTAL	1.0000	7.0000

- - - - - O N E W A Y - - - - -

Variable SCORES
By Variable DESIGN

Multiple Range Tests: Modified LSD (Bonferroni) test with significance level .05

The difference between two means is significant if
 $MEAN(J) - MEAN(I) \geq 1.0436 * RANGE * \sqrt{1/N(I) + 1/N(J)}$
 with the following value(s) for RANGE: 5.23

(*) Indicates significant differences which are shown in the lower triangle

		G G G G G G G G G G G G G G G G G
		r r r r r r r r r r r r r r r r r r
		p p p p p p p p p p p p p p p p p
		2 1 1 2 1 1 1 1 1 1 1 1 1 1 1
		0 9 4 1 1 1 7 5 9 2 0 8 3 2 4 5 7 1 3 6 6 8
Mean	DESIGN	
4.3000	Grp20	
4.2258	Grp19	
4.4000	Grp14	
4.6129	Grp21	
4.7097	Grp11	
4.8065	Grp17	
5.0000	Grp 5	
5.0000	Grp 9	
5.0323	Grp12	
5.1935	Grp10	
5.5161	Grp 8	*
5.6109	Grp13	* *
5.7419	Grp 2	* *
5.7419	Grp 4	* *
5.7419	Grp15	* *
5.8387	Grp 7	* * *
5.8710	Grp 1	* * *
5.0000	Grp 3	* * *
5.1290	Grp16	* * * * *
5.2058	Grp 6	* * * * *
5.3548	Grp18	* * * * *

- - - - - O N E W A Y - - - - -

Variable SCORES
By Variable DESIGN

Multiple Range Tests: Scheffe test with significance level .05

The difference between two means is significant if

$MEAN(J) - MEAN(I) \geq 1.0436 * RANGE * \sqrt{1/N(I) + 1/N(J)}$

with the following value(s) for RANGE: 7.97

(*) Indicates significant differences which are shown in the lower triangle

		G G G G G G G G G G G G G G G G G G
		r r r r r r r r r r r r r r r r r r
		P P P P P P P P P P P P P P P P P P
		2 1 1 2 1 1 1 1 1 1 1 1
		0 9 4 1 1 7 5 9 2 0 8 3 2 4 5 7 1 3 6 6 8
Mean	DESIGN	
4.0000	Grp20	
4.2258	Grp19	
4.4000	Grp14	
4.6129	Grp21	
4.7097	Grp11	
4.8065	Grp17	
5.0000	Grp 5	
5.0000	Grp 9	
5.0323	Grp12	
5.1935	Grp10	
5.5161	Grp 8	
5.6129	Grp13	
5.7419	Grp 2	
5.7419	Grp 4	
5.7419	Grp15	
5.8387	Grp 7	
5.8710	Grp 1	
6.0000	Grp 3	
6.1290	Grp16	*
6.2258	Grp 6	*
6.3548	Grp18	* *

IMPLEMENTATION

Variable SCORES
By Variable IMPLEMEN

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	13	268.6452	20.6650	9.6631	.0000
Within Groups	420	898.1935	2.1386		
Total	433	1166.8387			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean		
Grp 1	31	5.3871	1.3827	.2483	4.8799	TO	5.8943
Grp 2	31	5.6774	1.2487	.2243	5.2194	TO	6.1354
Grp 3	31	4.2903	2.0525	.3686	3.5374	TO	5.0432
Grp 4	31	5.3226	1.1658	.2094	4.8950	TO	5.7502
Grp 5	31	5.5161	1.2348	.2218	5.0632	TO	5.9691
Grp 6	31	6.1935	.9456	.1699	5.8466	TO	6.5405
Grp 7	31	6.2581	.6816	.1224	6.0081	TO	6.5081
Grp 8	31	6.3548	.7978	.1433	6.0622	TO	6.6475
Grp 9	31	5.9032	1.1649	.2092	5.4759	TO	6.3305
Grp10	31	4.4839	1.8416	.3308	3.8084	TO	5.1594
Grp11	31	5.6774	1.4919	.2680	5.1302	TO	6.2247
Grp12	31	5.1290	1.8026	.3238	4.4678	TO	5.7902
Grp13	31	3.5161	2.0145	.3618	2.7772	TO	4.2550
Grp14	31	4.8065	1.7592	.3160	4.1612	TO	5.4517
Total	434	5.3226	1.6416	.0788	5.1677	TO	5.4775

GROUP	MINIMUM	MAXIMUM
Grp 1	2.0000	7.0000
Grp 2	3.0000	7.0000
Grp 3	1.0000	7.0000
Grp 4	3.0000	7.0000
Grp 5	3.0000	7.0000
Grp 6	4.0000	7.0000
Grp 7	5.0000	7.0000
Grp 8	4.0000	7.0000
Grp 9	3.0000	7.0000
Grp10	1.0000	7.0000
Grp11	2.0000	7.0000
Grp12	1.0000	7.0000
Grp13	1.0000	7.0000
Grp14	1.0000	7.0000
TOTAL	1.0000	7.0000

- - - - - O N E W A Y - - - - -

Variable SCORES
By Variable IMPLEMEN

Multiple Range Tests: Scheffe test with significance level .05

The difference between two means is significant if
 $MEAN(J) - MEAN(I) \geq 1.0341 * RANGE * \sqrt{1/N(I) + 1/N(J)}$
 with the following value(s) for RANGE: 6.73

(*) Indicates significant differences which are shown in the lower triangle

```

G G G G G G G G G G G G G
r r r r r r r r r r r r r
p p p p p p p p p p p p p
1 1 1 1 1
3 3 0 4 2 4 1 5 2 1 9 6 7 8

```

Mean	IMPLEMEN	
3.5161	Grp13	
4.2903	Grp 3	
4.4839	Grp10	
4.8065	Grp14	
5.1290	Grp12	
5.3226	Grp 4	*
5.3871	Grp 1	*
5.5161	Grp 5	*
5.6774	Grp 2	*
5.6774	Grp11	*
5.9032	Grp 9	*
6.1935	Grp 6	* *
6.2581	Grp 7	* * *
6.3548	Grp 8	* * *

MAINTENANCE

Variable SCORES
By Variable MAINT

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	11	165.0774	15.0070	7.0213	.0000
Within Groups	359	767.3161	2.1374		
Total	370	932.3935			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean		
Grp 1	31	5.4839	1.4346	.2577	4.9577	TO	6.0101
Grp 2	31	5.7097	1.0390	.1866	5.3286	TO	6.0908
Grp 3	31	6.6129	.6152	.1105	6.3872	TO	6.8386
Grp 4	31	5.8710	1.4316	.2571	5.3459	TO	6.3961
Grp 5	31	6.6774	.5408	.0971	6.4790	TO	6.8758
Grp 6	31	4.9032	2.0552	.3691	4.1494	TO	5.6571
Grp 7	31	5.8065	1.2495	.2244	5.3481	TO	6.2648
Grp 8	31	4.5484	1.7858	.3207	3.8933	TO	5.2034
Grp 9	31	5.2581	1.5268	.2742	4.6980	TC	5.8181
Grp10	30	4.8000	1.6274	.2971	4.1923	TO	5.4077
Grp11	31	4.7742	1.8387	.3302	4.0958	TO	5.4486
Grp12	31	5.1613	1.5726	.2825	4.5845	TO	5.7381
Total	371	5.4690	1.5874	.0824	5.3069	TO	5.6311

GROUP	MINIMUM	MAXIMUM
Grp 1	2.0000	7.0000
Grp 2	4.0000	7.0000
Grp 3	5.0000	7.0000
Grp 4	1.0000	7.0000
Grp 5	5.0000	7.0000
Grp 6	1.0000	7.0000
Grp 7	2.0000	7.0000
Grp 8	1.0000	7.0000
Grp 9	2.0000	7.0000
Grp10	1.0000	7.0000
Grp11	1.0000	7.0000
Grp12	1.0000	7.0000
TOTAL	1.0000	7.0000

PROMOTION

- - - - - O N E W A Y - - - - -

Variable SCORES
By Variable PROMO

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	16	437.2296	27.3269	18.4995	.0000
Within Groups	510	753.3548	1.4772		
Total	526	1190.5844			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean
Grp 1	31	5.9677	.9123	.1639	5.6331 TO 6.3024
Grp 2	31	5.8065	.7924	.1423	5.5158 TO 6.0971
Grp 3	31	6.0323	.7951	.1428	5.7406 TO 6.3239
Grp 4	31	6.1613	.7347	.1320	5.8918 TO 6.4308
Grp 5	31	5.4194	1.0575	.1899	5.0315 TO 5.8072
Grp 6	31	5.9032	1.0118	.1817	5.5321 TO 6.2743
Grp 7	31	5.8065	1.3018	.2338	5.3290 TO 6.2839
Grp 8	31	5.9355	1.1528	.2071	5.5126 TO 6.3583
Grp 9	31	6.3226	.8713	.1565	6.0030 TO 6.6422
Grp10	31	5.0968	1.3255	.2381	4.6106 TO 5.5830
Grp11	31	6.2581	.8152	.1464	5.9591 TO 6.5571
Grp12	31	5.1613	1.4165	.2544	4.6417 TO 5.6809
Grp13	31	4.7097	1.6369	.2940	4.1092 TO 5.3101
Grp14	31	4.6452	1.6643	.2989	4.0347 TO 5.2556
Grp15	31	2.5484	1.6500	.2964	1.9432 TO 3.1536
Grp16	31	5.0323	1.6017	.2877	4.4447 TO 5.6198
Grp17	31	4.4516	1.1787	.2117	4.0193 TO 4.8840
Total	527	5.3681	1.5045	.0655	5.2394 TO 5.4969

GROUP	MINIMUM	MAXIMUM
Grp 1	4.0000	7.0000
Grp 2	4.0000	7.0000
Grp 3	4.0000	7.0000
Grp 4	5.0000	7.0000
Grp 5	3.0000	7.0000
Grp 6	4.0000	7.0000
Grp 7	2.0000	7.0000
Grp 8	4.0000	7.0000
Grp 9	4.0000	7.0000
Grp10	3.0000	7.0000
Grp11	4.0000	7.0000
Grp12	2.0000	7.0000
Grp13	1.0000	7.0000
Grp14	1.0000	7.0000
Grp15	1.0000	6.0000

Grp16	1.0000	7.0000
Grp17	1.0000	6.0000
TOTAL	1.0000	7.0000

- - - - - O N E W A Y - - - - -

Variable SCORES
By Variable PROMO

Multiple Range Tests: Scheffe test with significance level .05

The difference between two means is significant if
 $MEAN(J) - MEAN(I) \geq .8594 * RANGE * \sqrt{1/N(I) + 1/N(J)}$
 with the following value(s) for RANGE: 7.30

(* Indicates significant differences which are shown in the lower triangle

		G G G G G G G G G G G G G G G
		r r r r r r r r r r r r r r r r
		p p p p p p p p p p p p p p p
		1 1 1 1 1 1 1 1 1 1 1 1 1
		5 7 4 3 6 0 2 5 2 7 6 8 1 3 4 1 9
Mean	PROMC	
2.5484	Grp15	
4.4616	Grp17	*
4.6462	Grp14	*
4.7097	Grp13	*
5.0303	Grp16	*
5.0368	Grp10	*
5.1613	Grp12	*
5.4134	Grp 5	*
5.8065	Grp 2	*
5.8065	Grp 7	*
5.9002	Grp 6	*
5.9165	Grp 8	*
5.9677	Grp 1	*
5.9823	Grp 3	*
6.1613	Grp 4	* *
6.2581	Grp11	* * *
6.3226	Grp 9	* * * *

ANALYSIS

Variable SCORES
By Variable ANAL

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	17	206.3469	12.1381	7.9958	.0000
Within Groups	539	818.2312	1.5181		
Total	556	1024.5781			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean	
Grp 1	31	6.1613	.8204	.1474	5.8604	TO 6.4622
Grp 2	31	6.0000	.9661	.1735	5.6456	TO 6.3544
Grp 3	31	5.5484	1.1787	.2117	5.1160	TO 5.9807
Grp 4	31	6.4194	.7199	.1293	6.1553	TO 6.6834
Grp 5	31	6.4516	.6239	.1121	6.2228	TO 6.6805
Grp 6	31	6.1613	.8204	.1474	5.8604	TO 6.4622
Grp 7	31	5.9355	.9639	.1731	5.5819	TO 6.2890
Grp 8	31	6.3871	.6672	.1198	6.1424	TO 6.6318
Grp 9	31	5.9032	1.4226	.2555	5.3814	TO 6.4250
Grp10	31	4.9677	1.2243	.2159	4.5187	TO 5.4168
Grp11	31	5.8710	.8848	.1589	5.5464	TO 6.1955
Grp12	31	5.2258	1.2030	.2161	4.7845	TO 5.6671
Grp13	31	5.7097	1.2700	.2281	5.2438	TO 6.1755
Grp14	31	4.5806	1.9109	.3432	3.8797	TO 5.2816
Grp15	31	5.5484	1.6091	.2890	4.9582	TO 6.1386
Grp16	30	4.8333	1.5775	.2880	4.2443	TO 5.4224
Grp17	31	4.7419	1.8433	.3311	4.0658	TO 5.4181
Grp18	31	4.7742	1.3835	.2485	4.2667	TO 5.2817
Total	557	5.6248	1.3575	.0575	5.5118	TO 5.7378

GROUP	MINIMUM	MAXIMUM
Grp 1	4.0000	7.0000
Grp 2	4.0000	7.0000
Grp 3	3.0000	7.0000
Grp 4	5.0000	7.0000
Grp 5	5.0000	7.0000
Grp 6	4.0000	7.0000
Grp 7	3.0000	7.0000
Grp 8	5.0000	7.0000
Grp 9	1.0000	7.0000
Grp10	2.0000	7.0000
Grp11	4.0000	7.0000
Grp12	3.0000	7.0000
Grp13	1.0000	7.0000
Grp14	1.0000	7.0000
Grp15	2.0000	7.0000
Grp16	1.0000	7.0000
Grp17	1.0000	7.0000
Grp18	1.0000	7.0000
TOTAL	1.0000	7.0000

- - - - - O N E W A Y - - - - -

Variable SCORES
By Variable ANAL

Multiple Range Tests: Scheffe test with significance level .05

The difference between two means is significant if

$$\text{MEAN}(J) - \text{MEAN}(I) \geq .8712 * \text{RANGE} * \text{SQRT}(1/N(I) + 1/N(J))$$

with the following value(s) for RANGE: 7.47

(*) Indicates significant differences which are shown in the lower triangle

		G G G G G G G G G G G G G G G G
		r r r r r r r r r r r r r r r r r
		p p p p p p p p p p p p p p p p
		1 1 1 1 1 1 1 1 1
		4 7 8 6 0 2 3 5 3 1 9 7 2 1 6 8 4 5
Mean	ANAL	
4.5806	Grp14	
4.7419	Grp17	
4.7742	Grp18	
4.8333	Grp16	
4.9677	Grp10	
5.2358	Grp12	
5.5484	Grp 3	
5.5484	Grp15	
5.7097	Grp13	
5.8710	Grp11	
5.9032	Grp 9	
5.9355	Grp 7	
6.0000	Grp 2	
6.1613	Grp 1	
6.1613	Grp 6	
6.3871	Grp 8	*
6.4194	Grp 4	* *
6.4516	Grp 5	* * *

Appendix 9: ANOVA and Descriptives for Success Scores

- - - - - O N E W A Y - - - - -

Variable SCORES
By Variable SUCCESS

Grp 1= Successful Planning
Grp 2= Successful Analysis
Grp 3= Successful Design
Grp 4= Successful mplementation
Grp 5= Successful Maintenance
Grp 6= Successful Promotion

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	5	32.4865	6.4973	4.1284	.0014
Within Groups	176	276.9915	1.5738		
Total	181	309.4780			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf Int for Mean
Grp 1	31	5.5484	1.0595	.1903	5.1598 TO 5.9370
Grp 2	29	4.4138	1.4272	.2650	3.8709 TO 4.9567
Grp 3	31	5.7742	.8450	.1518	5.4643 TO 6.0841
Grp 4	30	5.2000	1.3235	.2416	4.7058 TO 5.6942
Grp 5	30	5.0667	1.3374	.2442	4.5673 TO 5.5660
Grp 6	31	5.1613	1.4398	.2586	4.6332 TO 5.6894
Total	182	5.2033	1.3076	.0969	5.0120 TO 5.3945

GROUP	MINIMUM	MAXIMUM
Grp 1	3.0000	7.0000
Grp 2	3.0000	7.0000
Grp 3	4.0000	7.0000
Grp 4	2.0000	7.0000
Grp 5	2.0000	7.0000
Grp 6	1.0000	7.0000
TOTAL	1.0000	7.0000

- - - - - O N E W A Y - - - - -

Variable SCORES
By Variable SUCCESS

Multiple Range Tests: Scheffe test with significance level .05

The difference between two means is significant if
 $\text{MEAN}(J) - \text{MEAN}(I) \geq .8871 * \text{RANGE} * \text{SQRT}(1/N(I) + 1/N(J))$
 with the following value(s) for RANGE: 4.76

• Indicates significant differences which are shown in the lower triangle

		G G G G G G
		r r r r r r
		p p p p p p
		2 5 6 4 1 3
Mean	SUCCESS	
4.4138	Grp 2	
5.0667	Grp 5	
5.1613	Grp 6	
5.2000	Grp 4	
5.5484	Grp 1	•
5.7740	Grp 3	•

APPENDIX 10: CORRELATION MATRIX

PLANNING

- - Correlation Coefficients - -

	PLAN1	PLAN10	PLAN11	PLAN12	PLAN13	PLAN14
PLAN1	1.0000 (31) P= .	.1131 (31) P= .545	.3608 (31) P= .046	.1998 (31) P= .281	-.0276 (31) P= .883	.1824 (31) P= .326
PLAN10	.1131 (31) P= .545	1.0000 (31) P= .	.0938 (31) P= .616	.5457 (31) P= .001	.2209 (31) P= .232	.2302 (31) P= .213
PLAN11	.3608 (31) P= .046	.0938 (31) P= .616	1.0000 (31) P= .	.1906 (31) P= .305	.5020 (31) P= .004	.4827 (31) P= .006
PLAN12	.1998 (31) P= .281	.5457 (31) P= .001	.1906 (31) P= .305	1.0000 (31) P= .	.3944 (31) P= .028	.3641 (31) P= .044
PLAN13	-.0276 (31) P= .883	.2209 (31) P= .232	.5020 (31) P= .004	.3944 (31) P= .028	1.0000 (31) P= .	.5875 (31) P= .001
PLAN14	.1824 (31) P= .326	.2302 (31) P= .213	.4827 (31) P= .006	.3641 (31) P= .044	.5875 (31) P= .001	1.0000 (31) P= .
PLAN15	.1172 (31) P= .530	-.1402 (31) P= .452	.3606 (31) P= .046	.1794 (31) P= .334	.5381 (31) P= .002	.5012 (31) P= .004
PLAN16	.0830 (31) P= .657	.4964 (31) P= .005	.2067 (31) P= .265	.5146 (31) P= .003	.6201 (31) P= .000	.6374 (31) P= .000
PLAN17	.0389 (30) P= .838	.5068 (30) P= .004	.1642 (30) P= .386	.6634 (30) P= .000	.5200 (30) P= .003	.5485 (30) P= .002
PLAN18	.0615 (31) P= .742	.2640 (31) P= .151	.1312 (31) P= .482	.0919 (31) P= .623	.0247 (31) P= .895	.4243 (31) P= .017
PLAN19	-.2902 (31) P= .113	.0412 (31) P= .826	.1780 (31) P= .338	.1110 (31) P= .552	.2271 (31) P= .219	-.0220 (31) P= .906

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	PLAN1	PLAN10	PLAN11	PLAN12	PLAN13	PLAN14
PLAN2	.3713 (.31) P= .040	.2609 (.31) P= .156	.4978 (.31) P= .004	.1967 (.31) P= .289	.4605 (.31) P= .009	.3755 (.31) P= .037
PLAN20	.0969 (.30) P= .610	.1369 (.30) P= .471	.2987 (.30) P= .109	.5623 (.30) P= .001	.3475 (.30) P= .060	.2688 (.30) P= .151
PLAN21	.1549 (.31) P= .405	.2709 (.31) P= .141	.3024 (.31) P= .098	.3858 (.31) P= .032	.4629 (.31) P= .009	.3403 (.31) P= .061
PLAN3	.0420 (.31) P= .823	-.0278 (.31) P= .882	.0640 (.31) P= .733	-.0172 (.31) P= .927	.4479 (.31) P= .012	.3495 (.31) P= .054
PLAN4	.2360 (.31) P= .201	.1547 (.31) P= .406	.1804 (.31) P= .331	-.0219 (.31) P= .907	.2679 (.31) P= .145	.4717 (.31) P= .007
PLAN5	-.0852 (.31) P= .649	.0905 (.31) P= .628	.0799 (.31) P= .669	-.1149 (.31) P= .538	.3026 (.31) P= .098	.2569 (.31) P= .163
PLAN6	.0556 (.31) P= .767	.0266 (.31) P= .887	-.1942 (.31) P= .295	.0386 (.31) P= .837	.1948 (.31) P= .294	-.0553 (.31) P= .768
PLAN7	.3560 (.31) P= .049	.2404 (.31) P= .193	.2164 (.31) P= .242	.0715 (.31) P= .702	.2859 (.31) P= .119	.3601 (.31) P= .047
PLAN8	.3268 (.31) P= .073	.5024 (.31) P= .004	.3055 (.31) P= .095	.1490 (.31) P= .424	.2250 (.31) P= .224	.3078 (.31) P= .092
PLAN9	-.1325 (.31) P= .477	.1471 (.31) P= .430	.0864 (.31) P= .644	.2252 (.31) P= .223	.3928 (.31) P= .029	.1318 (.31) P= .480
SUCPLAN	.1454 (.31) P= .435	.2697 (.31) P= .142	.1207 (.31) P= .518	-.0034 (.31) P= .986	-.0358 (.31) P= .848	.2490 (.31) P= .177

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	PLAN15	PLAN16	PLAN17	PLAN18	PLAN19	PLAN2
PLAN1	.1172 (.31) P= .530	.0830 (.31) P= .657	.0389 (.30) P= .838	.0615 (.31) P= .742	-.2902 (.31) P= .113	.3713 (.31) P= .040
PLAN10	-.1402 (.31) P= .452	.4964 (.31) P= .005	.5068 (.30) P= .004	.2640 (.31) P= .151	.0412 (.31) P= .826	.2609 (.31) P= .156
PLAN11	.3606 (.31) P= .046	.2067 (.31) P= .265	.1642 (.30) P= .386	.1312 (.31) P= .482	.1780 (.31) P= .338	.4978 (.31) P= .004
PLAN12	.1794 (.31) P= .334	.5146 (.31) P= .003	.6634 (.30) P= .000	.0919 (.31) P= .623	.1110 (.31) P= .552	.1967 (.31) P= .289
PLAN13	.5381 (.31) P= .002	.6201 (.31) P= .000	.5200 (.30) P= .003	.0247 (.31) P= .895	.2271 (.31) P= .219	.4605 (.31) P= .009
PLAN14	.5012 (.31) P= .004	.6374 (.31) P= .000	.5485 (.30) P= .002	.4243 (.31) P= .017	-.0220 (.31) P= .906	.3755 (.31) P= .037
PLAN15	1.0000 (.31) P= .	.1301 (.31) P= .486	.3465 (.30) P= .061	.3730 (.31) P= .039	.0488 (.31) P= .795	.1468 (.31) P= .431
PLAN16	.1301 (.31) P= .486	1.0000 (.31) P= .	.7011 (.30) P= .000	.0450 (.31) P= .810	.3491 (.31) P= .054	.4891 (.31) P= .005
PLAN17	.3465 (.30) P= .061	.7011 (.30) P= .000	1.0000 (.30) P= .	.4619 (.30) P= .010	.3130 (.30) P= .092	.3295 (.30) P= .075
PLAN18	.3730 (.31) P= .039	.0450 (.31) P= .810	.4619 (.30) P= .010	1.0000 (.31) P= .	-.0214 (.31) P= .909	.1683 (.31) P= .366
PLAN19	.0488 (.31) P= .795	.3491 (.31) P= .054	.3130 (.30) P= .092	-.0214 (.31) P= .909	1.0000 (.31) P= .	.2072 (.31) P= .263

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	PLAN15	PLAN16	PLAN17	PLAN18	PLAN19	PLAN2
PLAN2	.1468 (31) P= .431	.4891 (31) P= .005	.3295 (30) P= .075	.1683 (31) P= .366	.2072 (31) P= .263	1.0000 (31) P= .
PLAN20	.2526 (30) P= .178	.4018 (30) P= .028	.4826 (30) P= .007	.3324 (30) P= .073	.3997 (30) P= .029	.3782 (30) P= .039
PLAN21	.1796 (31) P= .334	.6318 (31) P= .000	.3763 (30) P= .040	.1157 (31) P= .535	.3992 (31) P= .026	.5559 (31) P= .001
PLAN3	.1620 (31) P= .384	.3708 (31) P= .040	.2196 (30) P= .244	-.1862 (31) P= .316	.1465 (31) P= .432	.1738 (31) P= .350
PLAN4	.1865 (31) P= .315	.3027 (31) P= .098	.1068 (30) P= .574	.0374 (31) P= .842	-.3121 (31) P= .087	.3980 (31) P= .007
PLAN5	.2587 (31) P= .160	.1987 (31) P= .284	.0612 (30) P= .748	-.0747 (31) P= .690	-.1901 (31) P= .306	.1558 (31) P= .393
PLAN6	.1476 (31) P= .428	.1633 (31) P= .380	.1740 (30) P= .358	-.0306 (31) P= .870	.2050 (31) P= .269	.2848 (31) P= .120
PLAN7	.2091 (31) P= .259	.2167 (31) P= .242	.1314 (30) P= .489	.0412 (31) P= .826	-.3552 (31) P= .050	.0887 (31) P= .635
PLAN8	.0452 (31) P= .809	.4419 (31) P= .013	.3782 (30) P= .039	.4896 (31) P= .005	.2079 (31) P= .260	.5306 (31) P= .000
PLAN9	-.2393 (31) P= .195	.5483 (31) P= .001	.2104 (30) P= .264	-.2890 (31) P= .115	.3856 (31) P= .032	.2548 (31) P= .167
SUCPLAN	-.1135 (31) P= .543	.3221 (31) P= .077	.1477 (30) P= .436	.2724 (31) P= .138	-.0147 (31) P= .937	.3075 (31) P= .092

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	PLAN20	PLAN21	PLAN3	PLAN4	PLAN5	PLAN6
PLAN1	.0969 (30) P= .610	.1549 (31) P= .405	.0420 (31) P= .823	.2360 (31) P= .201	-.0852 (31) P= .649	.0556 (31) P= .767
PLAN10	.1369 (30) P= .471	.2709 (31) P= .141	-.0278 (31) P= .882	.1547 (31) P= .406	.0905 (31) P= .628	.0266 (31) P= .887
PLAN11	.2987 (30) P= .109	.3024 (31) P= .098	.0640 (31) P= .733	.1804 (31) P= .331	.0799 (31) P= .669	-.1942 (31) P= .295
PLAN12	.5623 (30) P= .001	.3858 (31) P= .032	-.0172 (31) P= .927	-.0219 (31) P= .907	-.1149 (31) P= .538	.0386 (31) P= .837
PLAN13	.3475 (30) P= .060	.4629 (31) P= .009	.4479 (31) P= .012	.2679 (31) P= .145	.3026 (31) P= .098	.1948 (31) P= .294
PLAN14	.2688 (30) P= .151	.3403 (31) P= .061	.3495 (31) P= .054	.4717 (31) P= .007	.2569 (31) P= .163	-.0553 (31) P= .768
PLAN15	.2526 (30) P= .178	.1796 (31) P= .334	.1620 (31) P= .384	.1865 (31) P= .315	.2587 (31) P= .160	.1476 (31) P= .428
PLAN16	.4018 (30) P= .028	.6318 (31) P= .000	.3708 (31) P= .040	.3027 (31) P= .098	.1987 (31) P= .284	.1633 (31) P= .380
PLAN17	.4826 (30) P= .007	.3763 (30) P= .040	.2196 (30) P= .244	.1068 (30) P= .574	.0612 (30) P= .748	.1740 (30) P= .358
PLAN18	.3324 (30) P= .073	.1157 (31) P= .535	-.1862 (31) P= .316	.0374 (31) P= .842	-.0747 (31) P= .690	-.0306 (31) P= .870
PLAN19	.3997 (30) P= .029	.3992 (31) P= .026	.1465 (31) P= .432	-.3121 (31) P= .087	-.1901 (31) P= .306	.2050 (31) P= .269

(Coefficient (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	PLAN20	PLAN21	PLAN3	PLAN4	PLAN5	PLAN6
PLAN2	.3782 (30) P= .039	.5559 (31) P= .001	.1738 (31) P= .350	.3980 (31) P= .027	.1588 (31) P= .393	.2848 (31) P= .120
PLAN20	1.0000 (30) P= .	.7080 (30) P= .000	.0587 (30) P= .758	.0127 (30) P= .947	-.2358 (30) P= .210	.1426 (30) P= .452
PLAN21	.7080 (30) P= .000	1.0000 (31) P= .	.2803 (31) P= .127	.2296 (31) P= .214	.0415 (31) P= .824	.1975 (31) P= .287
PLAN3	.0587 (30) P= .758	.2803 (31) P= .127	1.0000 (31) P= .	.3313 (31) P= .069	.2990 (31) P= .102	.3423 (31) P= .059
PLAN4	.0127 (30) P= .947	.2296 (31) P= .214	.3313 (31) P= .069	1.0000 (31) P= .	.6712 (31) P= .000	.1267 (31) P= .497
PLAN5	-.2358 (30) P= .210	.0415 (31) P= .824	.2990 (31) P= .102	.6712 (31) P= .000	1.0000 (31) P= .	.3050 (31) P= .095
PLAN6	.1426 (30) P= .452	.1975 (31) P= .287	.3423 (31) P= .059	.1267 (31) P= .497	.3050 (31) P= .095	1.0000 (31) P= .
PLAN7	-.1229 (30) P= .517	.0200 (31) P= .915	.4128 (31) P= .021	.5128 (31) P= .003	.5551 (31) P= .001	.2051 (31) P= .268
PLAN8	.3669 (30) P= .046	.5933 (31) P= .000	.0382 (31) P= .838	.1242 (31) P= .505	-.1230 (31) P= .510	-.0114 (31) P= .952
PLAN9	.2119 (30) P= .261	.3617 (31) P= .046	.3583 (31) P= .048	.0000 (31) P= 1.000	-.0227 (31) P= .903	.1170 (31) P= .531
SUCPLAN	.0526 (30) P= .782	.4959 (31) P= .005	.0434 (31) P= .817	.2238 (31) P= .226	.1163 (31) P= .533	-.0163 (31) P= .931

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	PLAN7	PLAN8	PLAN9	SUCPLAN
PLAN1	.3560 (31) P= .049	.3268 (31) P= .073	-.1325 (31) P= .477	.1454 (31) P= .435
PLAN10	.2404 (31) P= .193	.5024 (31) P= .004	.1471 (31) P= .430	.2697 (31) P= .142
PLAN11	.2164 (31) P= .242	.3055 (31) P= .095	.0864 (31) P= .644	.1207 (31) P= .518
PLAN12	.0715 (31) P= .702	.1490 (31) P= .424	.2252 (31) P= .223	-.0034 (31) P= .986
PLAN13	.2859 (31) P= .119	.2250 (31) P= .224	.3928 (31) P= .029	-.0358 (31) P= .848
PLAN14	.3601 (31) P= .047	.3078 (31) P= .092	.1318 (31) P= .480	.2490 (31) P= .177
PLAN15	.2091 (31) P= .259	.0452 (31) P= .809	-.2393 (31) P= .195	-.1116 (31) P= .543
PLAN16	.2167 (31) P= .242	.4419 (31) P= .013	.5483 (31) P= .001	.3221 (31) P= .077
PLAN17	.1314 (30) P= .489	.3782 (30) P= .039	.2104 (30) P= .264	.1477 (30) P= .436
PLAN18	.0412 (31) P= .826	.4896 (31) P= .005	-.2890 (31) P= .115	.2724 (31) P= .138
PLAN19	-.3552 (31) P= .050	.2079 (31) P= .262	.3856 (31) P= .032	-.0147 (31) P= .937

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	PLAN7	PLAN8	PLAN9	SUCPLAN
PLAN2	.0887 (31) P= .635	.5306 (31) P= .002	.2548 (31) P= .167	.3075 (31) P= .092
PLAN20	-.1229 (30) P= .517	.3669 (30) P= .046	.2119 (30) P= .261	.0526 (30) P= .782
PLAN21	.0200 (31) P= .915	.5933 (31) P= .000	.3617 (31) P= .046	.4959 (31) P= .005
PLAN3	.4128 (31) P= .021	.0382 (31) P= .838	.3583 (31) P= .048	.0434 (31) P= .817
PLAN4	.5128 (31) P= .003	.1242 (31) P= .505	.0000 (31) P=1.000	.2238 (31) P= .226
PLAN5	.5551 (31) P= .001	-.1230 (31) P= .510	-.0227 (31) P= .903	.1163 (31) P= .533
PLAN6	.2051 (31) P= .268	-.0114 (31) P= .952	.1170 (31) P= .531	-.0163 (31) P= .931
PLAN7	1.0000 (31) P= .	.1245 (31) P= .505	-.0123 (31) P= .948	.0030 (31) P= .987
PLAN8	.1245 (31) P= .505	1.0000 (31) P= .	.0271 (31) P= .885	.4976 (31) P= .004
PLAN9	-.0123 (31) P= .948	.0271 (31) P= .885	1.0000 (31) P= .	.0087 (31) P= .963
SUCPLAN	.0030 (31) P= .987	.4976 (31) P= .004	.0087 (31) P= .963	1.0000 (31) P= .

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

DESIGN

- - Correlation Coefficients - -

	DESIG1	DESIG10	DESIG11	DESIG12	DESIG13	DESIG14
DESIG1	1.0000 (31) P= .	.6073 (31) P= .000	.5208 (31) P= .003	.2266 (31) P= .220	.6750 (31) P= .000	.2521 (30) P= .179
DESIG10	.6073 (31) P= .000	1.0000 (31) P= .	.8235 (31) P= .000	.3954 (31) P= .028	.5753 (31) P= .001	.2808 (30) P= .133
DESIG11	.5208 (31) P= .003	.8235 (31) P= .000	1.0000 (31) P= .	.4171 (31) P= .020	.6277 (31) P= .000	.2181 (30) P= .247
DESIG12	.2266 (31) P= .220	.3954 (31) P= .028	.4171 (31) P= .020	1.0000 (31) P= .	.5727 (31) P= .001	-.0123 (30) P= .949
DESIG13	.6750 (31) P= .000	.5753 (31) P= .001	.6277 (31) P= .000	.5727 (31) P= .001	1.0000 (31) P= .	.1763 (30) P= .351
DESIG14	.2521 (30) P= .179	.2808 (30) P= .133	.2181 (30) P= .247	-.0123 (30) P= .949	.1763 (30) P= .351	1.0000 (30) P= .
DESIG15	.4419 (31) P= .013	.2770 (31) P= .131	.1754 (31) P= .345	.5244 (31) P= .002	.4878 (31) P= .005	.3016 (30) P= .105
DESIG16	.5737 (31) P= .001	.5054 (31) P= .004	.4200 (31) P= .019	.3606 (31) P= .046	.6202 (31) P= .000	.3370 (30) P= .069
DESIG17	.3981 (31) P= .027	.3549 (31) P= .050	.2098 (31) P= .257	.4373 (31) P= .014	.4749 (31) P= .007	.3339 (30) P= .071
DESIG18	.1585 (31) P= .394	.0955 (31) P= .609	.0378 (31) P= .840	.3854 (31) P= .032	.2364 (31) P= .200	.0710 (30) P= .709
DESIG19	.2744 (31) P= .135	.2055 (31) P= .267	.0291 (31) P= .876	.3142 (31) P= .085	.3203 (31) P= .079	.1899 (30) P= .315

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	DESIG1	DESIG10	DESIG11	DESIG12	DESIG13	DESIG14
DESIG2	.4669 (31) P= .008	.2449 (31) P= .184	.2524 (31) P= .171	.3188 (31) P= .080	.4495 (31) P= .011	.2008 (30) P= .287
DESIG20	.1573 (31) P= .398	.0851 (31) P= .649	.1041 (31) P= .577	.2673 (31) P= .146	.0942 (31) P= .614	-.0106 (30) P= .956
DESIG21	.2218 (31) P= .231	.2751 (31) P= .134	.3185 (31) P= .081	.4224 (31) P= .018	.3964 (31) P= .027	-.0558 (30) P= .770
DESIG3	.3349 (30) P= .070	.2093 (30) P= .267	.2016 (30) P= .285	.1740 (30) P= .358	.4224 (30) P= .020	.1558 (29) P= .420
DESIG4	.3301 (31) P= .070	.2019 (31) P= .276	.0826 (31) P= .659	.2219 (31) P= .230	.4248 (31) P= .017	.1527 (30) P= .421
DESIG5	.5807 (29) P= .001	.4667 (29) P= .011	.3134 (29) P= .098	.5758 (29) P= .001	.5007 (29) P= .006	-.1948 (28) P= .321
DESIG6	.1917 (31) P= .302	.3925 (31) P= .029	.3997 (31) P= .026	.5449 (31) P= .002	.2873 (31) P= .117	.0367 (30) P= .847
DESIG7	.0937 (31) P= .616	.3360 (31) P= .065	.1860 (31) P= .316	.1937 (31) P= .296	.1352 (31) P= .468	.3428 (30) P= .064
DESIG8	.3254 (31) P= .074	.4831 (31) P= .006	.5032 (31) P= .004	.3443 (31) P= .058	.4774 (31) P= .007	.2913 (30) P= .118
DESIG9	.3707 (31) P= .040	.4643 (31) P= .009	.3272 (31) P= .072	.5198 (31) P= .003	.4735 (31) P= .007	.4105 (30) P= .024
SUCDESIG	.0031 (31) P= .987	-.1084 (31) P= .562	-.1423 (31) P= .445	.1695 (31) P= .362	.0074 (31) P= .968	.0585 (30) P= .759

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	DESIG15	DESIG16	DESIG17	DESIG18	DESIG19	DESIG2
DESIG1	.4419 (31) P= .013	.5737 (31) P= .001	.3981 (31) P= .027	.1585 (31) P= .394	.2744 (31) P= .135	.4669 (31) P= .008
DESIG10	.2770 (31) P= .131	.5054 (31) P= .004	.3549 (31) P= .050	.0955 (31) P= .609	.2055 (31) P= .267	.2449 (31) P= .184
DESIG11	.1754 (31) P= .345	.4200 (31) P= .019	.2098 (31) P= .257	.0378 (31) P= .840	.0291 (31) P= .876	.2524 (31) P= .171
DESIG12	.5244 (31) P= .002	.3606 (31) P= .046	.4373 (31) P= .014	.3854 (31) P= .032	.3142 (31) P= .085	.3188 (31) P= .080
DESIG13	.4878 (31) P= .005	.6202 (31) P= .000	.4749 (31) P= .007	.2364 (31) P= .200	.3203 (31) P= .079	.4495 (31) P= .011
DESIG14	.3016 (30) P= .105	.3370 (30) P= .069	.3339 (30) P= .071	.0710 (30) P= .709	.1899 (30) P= .315	.0008 (30) P= .957
DESIG15	1.0000 (31) P= .	.7315 (31) P= .000	.5143 (31) P= .003	.5228 (31) P= .003	.2489 (31) P= .177	.6473 (31) P= .000
DESIG16	.7315 (31) P= .000	1.0000 (31) P= .	.4452 (31) P= .012	.3881 (31) P= .031	.1842 (31) P= .321	.6183 (31) P= .000
DESIG17	.5143 (31) P= .003	.4452 (31) P= .012	1.0000 (31) P= .	.4324 (31) P= .015	.6084 (31) P= .000	.5759 (31) P= .001
DESIG18	.5228 (31) P= .003	.3881 (31) P= .031	.4324 (31) P= .015	1.0000 (31) P= .	.0401 (31) P= .830	.3126 (31) P= .087
DESIG19	.2489 (31) P= .177	.1842 (31) P= .321	.6084 (31) P= .000	.0401 (31) P= .830	1.0000 (31) P= .	.1986 (31) P= .284

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	DESIG15	DESIG16	DESIG17	DESIG18	DESIG19	DESIG2
DESIG2	.6473 (31) P= .000	.6183 (31) P= .000	.5759 (31) P= .001	.3126 (31) P= .087	.1986 (31) P= .284	1.0000 (31) P= .
DESIG20	.0000 (31) P=1.000	.1072 (31) P= .566	.2440 (31) P= .186	.1283 (31) P= .492	.3774 (31) P= .036	.2671 (31) P= .146
DESIG21	.1414 (31) P= .448	.2754 (31) P= .134	.3845 (31) P= .033	.2568 (31) P= .163	.3253 (31) P= .074	.3658 (31) P= .043
DESIG3	.6837 (30) P= .000	.6957 (30) P= .000	.3628 (30) P= .049	.3642 (30) P= .048	.1105 (30) P= .561	.7262 (30) P= .000
DESIG4	.6685 (31) P= .000	.4954 (31) P= .005	.4308 (31) P= .016	.4500 (31) P= .011	.2219 (31) P= .230	.4496 (31) P= .011
DESIG5	.3682 (29) P= .049	.4153 (29) P= .025	.4375 (29) P= .018	.2892 (29) P= .128	.3387 (29) P= .072	.4558 (29) P= .013
DESIG6	.3634 (31) P= .044	.3104 (31) P= .089	.2628 (31) P= .153	.3693 (31) P= .041	-.0728 (31) P= .697	.2443 (31) P= .185
DESIG7	.4476 (31) P= .012	.5611 (31) P= .001	.1863 (31) P= .316	.3996 (31) P= .026	-.0180 (31) P= .924	.2650 (31) P= .150
DESIG8	.2249 (31) P= .224	.3120 (31) P= .087	.3246 (31) P= .075	.2446 (31) P= .185	-.0614 (31) P= .743	.1776 (31) P= .339
DESIG9	.5164 (31) P= .003	.4929 (31) P= .005	.5547 (31) P= .001	.3023 (31) P= .098	.3148 (31) P= .085	.4434 (31) P= .012
SUCDESIG	.5999 (31) P= .000	.3245 (31) P= .075	.1842 (31) P= .321	.4433 (31) P= .012	-.1992 (31) P= .283	.3461 (31) P= .056

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	DESIG20	DESIG21	DESIG3	DESIG4	DESIG5	DESIG6
DESIG1	.1573 (31) P= .398	.2218 (31) P= .231	.3349 (30) P= .070	.3301 (31) P= .070	.5807 (29) P= .001	.1917 (31) P= .302
DESIG10	.0851 (31) P= .649	.2751 (31) P= .134	.2093 (30) P= .267	.2019 (31) P= .276	.4667 (29) P= .011	.3925 (31) P= .029
DESIG11	.1041 (31) P= .577	.3185 (31) P= .081	.2016 (30) P= .285	.0826 (31) P= .659	.3134 (29) P= .098	.3997 (31) P= .026
DESIG12	.2673 (31) P= .146	.4224 (31) P= .018	.1740 (30) P= .358	.2219 (31) P= .230	.5758 (29) P= .001	.5449 (31) P= .002
DESIG13	.0942 (31) P= .614	.3964 (31) P= .027	.4224 (30) P= .020	.4248 (31) P= .017	.5007 (29) P= .006	.2873 (31) P= .117
DESIG14	-.0106 (30) P= .956	-.0558 (30) P= .770	.1558 (29) P= .420	.1527 (30) P= .421	-.1948 (28) P= .321	.0367 (30) P= .847
DESIG15	.0000 (31) P=1.000	.1414 (31) P= .448	.6837 (30) P= .000	.6685 (31) P= .000	.3682 (29) P= .049	.3634 (31) P= .044
DESIG16	.1072 (31) P= .566	.2754 (31) P= .134	.6957 (30) P= .000	.4954 (31) P= .005	.4153 (29) P= .025	.3104 (31) P= .089
DESIG17	.2440 (31) P= .186	.3845 (31) P= .033	.3628 (30) P= .049	.4308 (31) P= .016	.4375 (29) P= .018	.2628 (31) P= .153
DESIG18	.1283 (31) P= .492	.2568 (31) P= .163	.3642 (30) P= .048	.4500 (31) P= .011	.2892 (29) P= .128	.3693 (31) P= .041
DESIG19	.3774 (31) P= .036	.3253 (31) P= .074	.1105 (30) P= .561	.2219 (31) P= .230	.3387 (29) P= .072	-.0728 (31) P= .697

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	DESIG20	DESIG21	DESIG3	DESIG4	DESIG5	DESIG6
DESIG2	.2671 (31) P= .146	.3658 (31) P= .043	.7262 (30) P= .000	.4496 (31) P= .011	.4558 (29) P= .013	.2443 (31) P= .185
DESIG20	1.0000 (31) P= .	.6312 (31) P= .000	-.0899 (30) P= .637	-.0455 (31) P= .808	.3100 (29) P= .102	.2439 (31) P= .186
DESIG21	.6312 (31) P= .000	1.0000 (31) P= .	.2247 (30) P= .233	.2470 (31) P= .180	.4291 (29) P= .020	.5367 (31) P= .002
DESIG3	-.0899 (30) P= .637	.2247 (30) P= .233	1.0000 (30) P= .	.7502 (30) P= .000	.3649 (28) P= .056	.2436 (30) P= .195
DESIG4	-.0455 (31) P= .808	.2470 (31) P= .180	.7502 (30) P= .000	1.0000 (31) P= .	.4110 (29) P= .027	.2694 (31) P= .143
DESIG5	.3100 (29) P= .102	.4291 (29) P= .020	.3649 (28) P= .056	.4110 (29) P= .027	1.0000 (29) P= .	.4741 (29) P= .009
DESIG6	.2439 (31) P= .186	.5367 (31) P= .002	.2436 (30) P= .195	.2694 (31) P= .143	.4741 (29) P= .009	1.0000 (31) P= .
DESIG7	.2497 (31) P= .176	.2157 (31) P= .244	.3454 (30) P= .062	.3786 (31) P= .036	.1044 (29) P= .590	.5232 (31) P= .003
DESIG8	.2470 (31) P= .180	.3420 (31) P= .060	.1442 (30) P= .447	.2738 (31) P= .136	.2484 (29) P= .194	.6244 (31) P= .000
DESIG9	.2541 (31) P= .168	.2846 (31) P= .121	.2941 (30) P= .115	.4292 (31) P= .016	.5015 (29) P= .006	.5083 (31) P= .004
SUCDESIG	.0573 (31) P= .759	.1407 (31) P= .450	.2524 (30) P= .178	.3039 (31) P= .096	-.0721 (29) P= .710	.3947 (31) P= .028

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	DESIG7	DESIG8	DESIG9	SUCDESIG
DESIG1	.0937 (31) P= .616	.3254 (31) P= .074	.3707 (31) P= .040	.0031 (31) P= .987
DESIG10	.3360 (31) P= .065	.4831 (31) P= .006	.4643 (31) P= .009	-.1084 (31) P= .562
DESIG11	.1860 (31) P= .316	.5032 (31) P= .004	.3272 (31) P= .072	-.1423 (31) P= .445
DESIG12	.1937 (31) P= .296	.3443 (31) P= .058	.5198 (31) P= .003	.1695 (31) P= .362
DESIG13	.1352 (31) P= .468	.4774 (31) P= .007	.4735 (31) P= .007	.0074 (31) P= .968
DESIG14	.3428 (30) P= .064	.2913 (30) P= .118	.4105 (30) P= .024	.0585 (30) P= .759
DESIG15	.4476 (31) P= .012	.2249 (31) P= .224	.5164 (31) P= .003	.5999 (31) P= .000
DESIG16	.5611 (31) P= .001	.3120 (31) P= .087	.4929 (31) P= .005	.3245 (31) P= .075
DESIG17	.1863 (31) P= .316	.3246 (31) P= .075	.5547 (31) P= .001	.1842 (31) P= .321
DESIG18	.3996 (31) P= .026	.2446 (31) P= .185	.3023 (31) P= .098	.4433 (31) P= .012
DESIG19	-.0180 (31) P= .924	-.0614 (31) P= .743	.3148 (31) P= .085	-.1992 (31) P= .283

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	DESIG7	DESIG8	DESIG9	SUCDESIG
DESIG2	.2650 (31) P= .150	.1776 (31) P= .339	.4434 (31) P= .012	.3461 (31) P= .056
DESIG20	.2497 (31) P= .176	.2470 (31) P= .180	.2541 (31) P= .168	.0573 (31) P= .759
DESIG21	.2157 (31) P= .244	.3420 (31) P= .060	.2846 (31) P= .121	.1407 (31) P= .450
DESIG3	.3454 (30) P= .062	.1442 (30) P= .447	.2941 (30) P= .115	.2524 (30) P= .178
DESIG4	.3786 (31) P= .036	.2738 (31) P= .136	.4292 (31) P= .016	.3039 (31) P= .096
DESIG5	.1044 (29) P= .590	.2484 (29) P= .194	.5015 (29) P= .006	-.0721 (29) P= .710
DESIG6	.5232 (31) P= .003	.6244 (31) P= .000	.5083 (31) P= .004	.3947 (31) P= .028
DESIG7	1.0000 (31) P= .	.5167 (31) P= .003	.5650 (31) P= .001	.4017 (31) P= .025
DESIG8	.5167 (31) P= .003	1.0000 (31) P= .	.5771 (31) P= .001	.1999 (31) P= .281
DESIG9	.5650 (31) P= .001	.5771 (31) P= .001	1.0000 (31) P= .	.2161 (31) P= .243
SUCDESIG	.4017 (31) P= .025	.1999 (31) P= .281	.2161 (31) P= .243	1.0000 (31) P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

IMPLEMENTATION

- - Correlation Coefficients - -

	IMPLEM1	IMPLEM10	IMPLEM11	IMPLEM12	IMPLEM13	IMPLEM14
IMPLEM1	1.0000 (31) P= .	.1989 (31) P= .283	.2403 (31) P= .193	.3939 (31) P= .028	.0456 (31) P= .808	.4430 (31) P= .013
IMPLEM10	.1989 (31) P= .283	1.0000 (31) P= .	.3620 (31) P= .045	.4826 (31) P= .006	.3617 (31) P= .046	.3694 (31) P= .041
IMPLEM11	.2403 (31) P= .193	.3620 (31) P= .045	1.0000 (31) P= .	.0780 (31) P= .677	.0683 (31) P= .715	.2294 (31) P= .214
IMPLEM12	.3939 (31) P= .028	.4826 (31) P= .006	.0780 (31) P= .677	1.0000 (31) P= .	-.1383 (31) P= .458	.1448 (31) P= .437
IMPLEM13	.0456 (31) P= .808	.3617 (31) P= .046	.0683 (31) P= .715	-.1383 (31) P= .458	1.0000 (31) P= .	.1890 (31) P= .308
IMPLEM14	.4430 (31) P= .013	.3694 (31) P= .041	.2294 (31) P= .214	.1448 (31) P= .437	.1890 (31) P= .308	1.0000 (31) P= .
IMPLEM2	.7505 (31) P= .000	.3311 (31) P= .069	.2465 (31) P= .181	.4782 (31) P= .007	.1347 (31) P= .470	.3045 (31) P= .096
IMPLEM3	.1822 (31) P= .326	.0586 (31) P= .754	.2711 (31) P= .140	.1697 (31) P= .361	-.0133 (31) P= .944	.2561 (31) P= .164
IMPLEM4	.3128 (31) P= .087	.0180 (31) P= .923	.3301 (31) P= .070	-.1474 (31) P= .429	-.0591 (31) P= .752	.1615 (31) P= .385
IMPLEM5	-.0623 (31) P= .739	.1211 (31) P= .517	.3648 (31) P= .044	-.1956 (31) P= .292	.1573 (31) P= .398	.0322 (31) P= .864
IMPLEM6	.5525 (31) P= .001	-.0173 (31) P= .926	.3528 (31) P= .052	.2586 (31) P= .160	-.2816 (31) P= .125	.0834 (31) P= .656

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	IMPLEM1	IMPLEM10	IMPLEM11	IMPLEM12	IMPLEM13	IMPLEM14
IMPLEM7	.4564 (31) P= .010	.2956 (31) P= .106	.2485 (31) P= .178	.2976 (31) P= .104	-.0274 (31) P= .884	.3211 (31) P= .078
IMPLEM8	.4152 (31) P= .020	.3103 (31) P= .089	.1274 (31) P= .495	.1525 (31) P= .413	.0274 (31) P= .884	.3356 (31) P= .065
IMPLEM9	.4379 (31) P= .014	.3955 (31) P= .028	.2500 (31) P= .175	.4824 (31) P= .006	.1214 (31) P= .515	.3321 (31) P= .068
SUCIMPLE	-.0949 (30) P= .618	-.0201 (30) P= .916	-.0661 (30) P= .728	-.1777 (30) P= .348	.3169 (30) P= .088	-.2305 (30) P= .220

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

	IMPLEM2	IMPLEM3	IMPLEM4	IMPLEM5	IMPLEM6	IMPLEM7
IMPLEM1	.7505 (31) P= .000	.1822 (31) P= .326	.3128 (31) P= .087	-.0623 (31) P= .739	.5525 (31) P= .001	.4564 (31) P= .010
IMPLEM10	.3311 (31) P= .069	.0586 (31) P= .754	.0180 (31) P= .923	.1211 (31) P= .517	-.0173 (31) P= .926	.0956 (31) P= .106
IMPLEM11	.2465 (31) P= .181	.2711 (31) P= .140	.3301 (31) P= .070	.3648 (31) P= .044	.3528 (31) P= .052	.2485 (31) P= .178
IMPLEM12	.4782 (31) P= .007	.1697 (31) P= .361	-.1474 (31) P= .429	-.1956 (31) P= .292	.2586 (31) P= .160	.2976 (31) P= .104
IMPLEM13	.1347 (31) P= .470	-.0133 (31) P= .944	-.0591 (31) P= .752	.1573 (31) P= .398	-.2816 (31) P= .125	-.0274 (31) P= .884

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	IMPLEM2	IMPLEM3	IMPLEM4	IMPLEM5	IMPLEM6	IMPLEM7
IMPLEM14	.3045 (31) P= .096	.2561 (31) P= .164	.1615 (31) P= .385	.0322 (31) P= .864	.0834 (31) P= .656	.3211 (31) P= .078
IMPLEM2	1.0000 (31) P= .	.2849 (31) P= .120	.3028 (31) P= .098	.0900 (31) P= .630	.5909 (31) P= .000	.3753 (31) P= .038
IMPLEM3	.2849 (31) P= .120	1.0000 (31) P= .	.4053 (31) P= .024	.3203 (31) P= .079	.1761 (31) P= .343	.1591 (31) P= .393
IMPLEM4	.3028 (31) P= .098	.4053 (31) P= .024	1.0000 (31) P= .	.5983 (31) P= .000	.5158 (31) P= .003	.2693 (31) P= .143
IMPLEM5	.0900 (31) P= .630	.3203 (31) P= .079	.5983 (31) P= .000	1.0000 (31) P= .	.1399 (31) P= .453	.1533 (31) P= .410
IMPLEM6	.5909 (31) P= .000	.1761 (31) P= .343	.5158 (31) P= .003	.1399 (31) P= .453	1.0000 (31) P= .	.3336 (31) P= .067
IMPLEM7	.3753 (31) P= .038	.1591 (31) P= .393	.2693 (31) P= .143	.1533 (31) P= .410	.3336 (31) P= .067	1.0000 (31) P= .
IMPLEM8	.4199 (31) P= .019	.1589 (31) P= .393	.3746 (31) P= .038	.0786 (31) P= .674	.3918 (31) P= .029	.6229 (31) P= .000
IMPLEM9	.5737 (31) P= .001	.1934 (31) P= .297	.2201 (31) P= .234	.2213 (31) P= .232	.5319 (31) P= .002	.4524 (31) P= .011
SUCIMPLE	-.1004 (30) P= .597	-.0377 (30) P= .843	.2371 (30) P= .207	.1319 (30) P= .487	-.0823 (30) P= .666	-.1689 (30) P= .372

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	IMPLEM8	IMPLEM9	SUCIMPLE
IMPLEM1	.4152 (31) P= .020	.4379 (31) P= .014	-.0949 (30) P= .618
IMPLEM10	.3103 (31) P= .089	.3955 (31) P= .028	-.0201 (30) P= .916
IMPLEM11	.1274 (31) P= .495	.2500 (31) P= .175	-.0661 (30) P= .728
IMPLEM12	.1525 (31) P= .413	.4824 (31) P= .006	-.1777 (30) P= .348
IMPLEM13	.0274 (31) P= .884	.1214 (31) P= .515	.3169 (30) P= .088
IMPLEM14	.3356 (31) P= .065	.3321 (31) P= .068	-.2305 (30) P= .220
IMPLEM2	.4199 (31) P= .019	.5737 (31) P= .001	-.1004 (30) P= .597
IMPLEM3	.1589 (31) P= .393	.1934 (31) P= .297	-.0377 (30) P= .843
IMPLEM4	.3746 (31) P= .038	.2201 (31) P= .234	.2371 (30) P= .207
IMPLEM5	.0786 (31) P= .674	.2213 (31) P= .232	.1319 (30) P= .487
IMPLEM6	.3918 (31) P= .029	.5319 (31) P= .002	-.0823 (30) P= .666

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	IMPLEM8	IMPLEM9	SUCIMPLE
IMPLEM7	.6229 (31) P= .000	.4524 (31) P= .011	-.1689 (30) P= .372
IMPLEM8	1.0000 (31) P= .	.5403 (31) P= .002	-.0974 (30) P= .609
IMPLEM9	.5403 (31) P= .002	1.0000 (31) P= .	-.3395 (30) P= .066
SUCIMPLE	-.0974 (30) P= .609	-.3395 (30) P= .066	1.0000 (30) P= .

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

MAINTENANCE

- - Correlation Coefficients - -

	MAINT1	MAINT10	MAINT11	MAINT12	MAINT2	MAINT3
MAINT1	1.0000 (31) P= .	.3051 (30) P= .101	.3840 (31) P= .033	.4814 (31) P= .006	.8801 (31) P= .000	.1815 (31) P= .328
MAINT10	.3051 (30) P= .101	1.0000 (30) P= .	.3501 (30) P= .058	.3445 (30) P= .062	.3503 (30) P= .058	-.1500 (30) P= .429
MAINT11	.3840 (31) P= .033	.3501 (30) P= .058	1.0000 (31) P= .	.5664 (31) P= .001	.4356 (31) P= .014	.0086 (31) P= .964
MAINT12	.4814 (31) P= .006	.3445 (30) P= .062	.5664 (31) P= .001	1.0000 (31) P= .	.5804 (31) P= .001	.0667 (31) P= .722
MAINT2	.8801 (31) P= .000	.3503 (30) P= .058	.4356 (31) P= .014	.5804 (31) P= .001	1.0000 (31) P= .	.1834 (31) P= .323
MAINT3	.1815 (31) P= .328	-.1500 (30) P= .429	.0086 (31) P= .964	.0667 (31) P= .722	.1834 (31) P= .323	1.0000 (31) P= .
MAINT4	.5508 (31) P= .001	.3825 (30) P= .037	.0519 (31) P= .782	.3205 (31) P= .079	.3773 (31) P= .036	.2442 (31) P= .186
MAINT5	.0790 (31) P= .673	-.2713 (30) P= .147	.0584 (31) P= .755	-.1328 (31) P= .477	.1837 (31) P= .323	.4137 (31) P= .021
MAINT6	.2764 (31) P= .132	.0953 (30) P= .616	.0470 (31) P= .802	.1597 (31) P= .391	.2674 (31) P= .146	.0485 (31) P= .796
MAINT7	.5933 (31) P= .000	.1118 (30) P= .556	.1835 (31) P= .323	.4066 (31) P= .023	.5458 (31) P= .001	.1161 (31) P= .534
MAINT8	.4134 (31) P= .021	.2709 (30) P= .148	.0999 (31) P= .593	.2642 (31) P= .151	.3581 (31) P= .048	-.1037 (31) P= .579

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	MAINT1	MAINT10	MAINT11	MAINT12	MAINT2	MAINT3
MAINT9	.1694 (31) P= .362	-.0874 (30) P= .646	-.0260 (31) P= .889	-.1429 (31) P= .443	.1959 (31) P= .291	-.0321 (31) P= .864
SUCMAINT	-.2125 (30) P= .260	-.1855 (29) P= .335	.1168 (30) P= .539	-.0065 (30) P= .973	-.0853 (30) P= .654	.1985 (30) P= .293

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

	MAINT4	MAINT5	MAINT6	MAINT7	MAINT8	MAINT9
MAINT1	.5508 (31) P= .001	.0790 (31) P= .673	.2764 (31) P= .132	.5933 (31) P= .000	.4134 (31) P= .021	.1694 (31) P= .362
MAINT10	.3825 (30) P= .037	-.2713 (30) P= .147	.0953 (30) P= .616	.1118 (30) P= .556	.2709 (30) P= .148	-.0874 (30) P= .646
MAINT11	.0519 (31) P= .782	.0584 (31) P= .755	.0470 (31) P= .802	.1835 (31) P= .323	.0999 (31) P= .593	-.0260 (31) P= .889
MAINT12	.3205 (31) P= .079	-.1328 (31) P= .477	.1597 (31) P= .391	.4066 (31) P= .023	.2642 (31) P= .151	-.1429 (31) P= .443
MAINT2	.3773 (31) P= .036	.1837 (31) P= .323	.2674 (31) P= .146	.5458 (31) P= .001	.3581 (31) P= .048	.1959 (31) P= .291
MAINT3	.2442 (31) P= .186	.4137 (31) P= .021	.0485 (31) P= .796	.1161 (31) P= .534	-.1037 (31) P= .579	-.0321 (31) P= .864
MAINT4	1.0000 (31) P= .	-.0556 (31) P= .767	.3015 (31) P= .099	.2465 (31) P= .181	.1590 (31) P= .393	.2597 (31) P= .158

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	MAINT4	MAINT5	MAINT6	MAINT7	MAINT8	MAINT9
MAINT5	-.0556 (. 31) P= .767	1.0000 (. 31) P= .	-.0890 (. 31) P= .634	.1018 (. 31) P= .586	-.1214 (. 31) P= .515	.1849 (. 31) P= .319
MAINT6	.3015 (. 31) P= .099	-.0890 (. 31) P= .634	1.0000 (. 31) P= .	.1482 (. 31) P= .426	-.1213 (. 31) P= .516	-.0980 (. 31) P= .600
MAINT7	.2465 (. 31) P= .181	.1018 (. 31) P= .586	.1482 (. 31) P= .426	1.0000 (. 31) P= .	.3479 (. 31) P= .055	-.1127 (. 31) P= .546
MAINT8	.1590 (. 31) P= .393	-.1214 (. 31) P= .515	-.1213 (. 31) P= .516	.3479 (. 31) P= .055	1.0000 (. 31) P= .	.2398 (. 31) P= .194
MAINT9	.2597 (. 31) P= .158	.1849 (. 31) P= .319	-.0980 (. 31) P= .600	-.1127 (. 31) P= .546	.2398 (. 31) P= .194	1.0000 (. 31) P= .
SUEMAINT	-.1213 (. 30) P= .524	.2217 (. 30) P= .239	-.2570 (. 30) P= .170	-.1964 (. 30) P= .298	-.1899 (. 30) P= .315	.1739 (. 30) P= .358

Coefficient (Cases) / 2-tailed Significance)

" " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

SUCMAINT

MAINT1	-.2125
(30)	
P=	.260
MAINT10	-.1855
(29)	
P=	.335
MAINT11	.1168
(30)	
P=	.539
MAINT12	-.0065
(30)	
P=	.973
MAINT2	-.0853
(30)	
P=	.654
MAINT3	.1985
(30)	
P=	.293
MAINT4	-.1212
(30)	
P=	.524
MAINT5	.2217
(30)	
P=	.239
MAINT6	-.2570
(30)	
P=	.170
MAINT7	-.1964
(30)	
P=	.298
MAINT8	-.1899
(30)	
P=	.315

(Coefficient / (Cases) / 2-tailed Significance)

- - Correlation Coefficients - -

SUCMAINT

MAINT9	.1739
(30)	
P=	.358
SUCMAINT	1.0000
(30)	
P=	.

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

PROMOTION

- - Correlation Coefficients - -

	PROMO1	PROMO10	PROMO11	PROMO12	PROMC13	PROMO14
PROMO1	1.0000 (31) P= .	.3886 (31) P= .031	.1909 (31) P= .304	.2105 (31) P= .256	-.1181 (31) P= .527	.0581 (31) P= .756
PROMO10	.3886 (31) P= .031	1.0000 (31) P= .	.3463 (31) P= .056	.3110 (31) P= .089	.4128 (31) P= .021	.3636 (31) P= .044
PROMO11	.1909 (31) P= .304	.3463 (31) P= .056	1.0000 (31) P= .	-.1816 (31) P= .328	.0330 (31) P= .860	.2417 (31) P= .190
PROMO12	.2105 (31) P= .256	.3110 (31) P= .089	-.1816 (31) P= .328	1.0000 (31) P= .	.3371 (31) P= .064	.4493 (31) P= .011
PROMC13	-.1181 (31) P= .527	.4128 (31) P= .021	.0330 (31) P= .860	.3371 (31) P= .064	1.0000 (31) P= .	.1934 (31) P= .297
PROMO14	.0581 (31) P= .756	.3636 (31) P= .044	.2417 (31) P= .190	.4493 (31) P= .011	.1934 (31) P= .297	1.0000 (31) P= .
PROMC15	-.3422 (31) P= .060	.0969 (31) P= .604	.0895 (31) P= .632	-.1532 (31) P= .411	.2584 (31) P= .161	.1946 (31) P= .294
PROMC16	-.2958 (31) P= .106	-.0172 (31) P= .927	-.2619 (31) P= .155	.3062 (31) P= .054	.4105 (31) P= .022	.0545 (31) P= .771
PROMC17	-.1100 (31) P= .556	.0778 (31) P= .678	.1175 (31) P= .529	.2744 (31) P= .135	.4503 (31) P= .011	.3223 (31) P= .077
PROMC2	.5444 (31) P= .002	.2723 (31) P= .138	.0283 (31) P= .880	.2663 (31) P= .148	.0066 (31) P= .972	.0978 (31) P= .601
PROMC3	.4610 (31) P= .009	.2183 (31) P= .238	.1924 (31) P= .300	.0544 (31) P= .771	.0587 (31) P= .754	.1349 (31) P= .469

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	PROMC1	PROMO10	PROMO11	PROMO12	PROMO13	PROMO14
PROMO4	.1075 (.31) P= .565	.0861 (.31) P= .645	.0395 (.31) P= .833	.2945 (.31) P= .108	.0957 (.31) P= .609	.1847 (.31) P= .120
PROMO5	.0490 (.31) P= .793	.0652 (.31) P= .727	-.0137 (.31) P= .942	-.0912 (.31) P= .626	.1304 (.31) P= .484	.0305 (.31) P= .870
PROMO6	.1771 (.31) P= .341	-.0176 (.31) P= .925	.0717 (.31) P= .701	.2206 (.31) P= .233	.1234 (.31) P= .509	-.0607 (.31) P= .746
PROMO7	.1910 (.31) P= .303	.3203 (.31) P= .079	-.2027 (.31) P= .274	.4513 (.31) P= .011	.5828 (.31) P= .001	.3211 (.31) P= .008
PROMO8	.0930 (.31) P= .619	.1787 (.31) P= .336	-.3364 (.31) P= .064	.5169 (.31) P= .003	.2370 (.31) P= .199	.0309 (.31) P= .811
PROMO9	.2232 (.31) P= .227	.1164 (.31) P= .533	-.2150 (.31) P= .245	.5776 (.31) P= .001	.0912 (.31) P= .626	.1968 (.31) P= .289
SUCFROM	.0295 (.31) P= .875	.1662 (.31) P= .372	.2190 (.31) P= .237	-.0295 (.31) P= .875	-.0219 (.31) P= .907	.1001 (.31) P= .513

Coefficient (Cases) / 2-tailed Significance)

" ." is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	PROMC15	PROMC16	PROMC17	PROMC2	PROMC3	PROMC4
PROMC1	-.3422 (31) P= .060	-.2958 (31) P= .106	-.1100 (31) P= .556	.5444 (31) P= .002	.4610 (31) P= .009	.1075 (31) P= .565
PROMC10	.0969 (31) P= .604	-.0172 (31) P= .927	.0778 (31) P= .678	.2723 (31) P= .138	.2183 (31) P= .238	.0861 (31) P= .645
PROMC11	.0895 (31) P= .632	-.2619 (31) P= .155	.1175 (31) P= .529	.0283 (31) P= .880	.1924 (31) P= .300	.0395 (31) P= .833
PROMC12	-.1532 (31) P= .411	.3062 (31) P= .094	.2744 (31) P= .135	.2663 (31) P= .148	.0544 (31) P= .771	.2945 (31) P= .108
PROMC13	.2584 (31) P= .161	.4105 (31) P= .022	.4503 (31) P= .011	.0066 (31) P= .972	.0587 (31) P= .754	.0957 (31) P= .609
PROMC14	.1946 (31) P= .294	.0545 (31) P= .771	.3223 (31) P= .077	.0978 (31) P= .601	.1349 (31) P= .469	.1847 (31) P= .320
PROMC15	1.0000 (31) P= .	-.0448 (31) P= .811	.3312 (31) P= .069	-.2730 (31) P= .137	-.1918 (31) P= .301	.0071 (31) P= .970
PROMC16	-.0448 (31) P= .811	1.0000 (31) P= .	.5041 (31) P= .004	-.2050 (31) P= .269	-.1317 (31) P= .480	.1371 (31) P= .462
PROMC17	.3312 (31) P= .069	.5041 (31) P= .004	1.0000 (31) P= .	.0253 (31) P= .892	.0906 (31) P= .628	.2210 (31) P= .232
PROMC2	-.2730 (31) P= .137	-.2050 (31) P= .269	.0253 (31) P= .892	1.0000 (31) P= .	.4864 (31) P= .006	.2272 (31) P= .219
PROMC3	-.1918 (31) P= .301	-.1317 (31) P= .480	.0906 (31) P= .628	.4864 (31) P= .006	1.0000 (31) P= .	.2190 (31) P= .236

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	PROMO15	PROMO16	PROMO17	PROMO2	PROMO3	PROMO4
PROMO4	.0071 (.31) P= .970	.1371 (.31) P= .462	.2210 (.31) P= .232	.2272 (.31) P= .219	.2190 (.31) P= .236	1.0000 (.31) P= .
PROMO5	-.3654 (.31) P= .043	.0311 (.31) P= .868	.1639 (.31) P= .378	.1001 (.31) P= .592	.1023 (.31) P= .584	-.2616 (.31) P= .155
PROMO6	-.1868 (.31) P= .314	.0431 (.31) P= .818	.1217 (.31) P= .514	.1006 (.31) P= .590	.0454 (.31) P= .808	.1562 (.31) P= .401
PROMO7	-.1196 (.31) P= .521	.1310 (.31) P= .482	.2109 (.31) P= .255	.3179 (.31) P= .081	.3605 (.31) P= .046	-.0011 (.31) P= .995
PROMO8	-.2086 (.31) P= .260	.2539 (.31) P= .168	.1693 (.31) P= .362	.2048 (.31) P= .269	.2569 (.31) P= .163	-.1841 (.31) P= .322
PROMO9	-.2199 (.31) P= .235	.2073 (.31) P= .263	.1780 (.31) P= .338	.2383 (.31) P= .197	.4175 (.31) P= .019	-.0319 (.31) P= .865
SUCPROM	.1580 (.31) P= .396	-.1758 (.31) P= .344	.1913 (.31) P= .302	.2036 (.31) P= .272	.3738 (.31) P= .038	.5103 (.31) P= .003

Coefficient = (Cases) / 2-tailed Significance;

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	PROMO5	PROMO6	PROMO7	PROMO8	PROMO9	SUCPROM
PROMO1	.0490 (.31) P= .793	.1771 (.31) P= .341	.1910 (.31) P= .303	.0930 (.31) P= .619	.2232 (.31) P= .227	.0295 (.31) P= .875
PROMO10	.0652 (.31) P= .727	-.0176 (.31) P= .925	.3203 (.31) P= .079	.1787 (.31) P= .336	.1164 (.31) P= .533	.1662 (.31) P= .372
PROMO11	-.0137 (.31) P= .942	.0717 (.31) P= .701	-.2027 (.31) P= .274	-.3364 (.31) P= .064	-.2150 (.31) P= .245	.2190 (.31) P= .237
PROMO12	-.0912 (.31) P= .626	.2206 (.31) P= .233	.4513 (.31) P= .011	.5169 (.31) P= .003	.5776 (.31) P= .001	-.0295 (.31) P= .875
PROMO13	.1304 (.31) P= .484	.1234 (.31) P= .509	.5828 (.31) P= .001	.2370 (.31) P= .199	.0912 (.31) P= .626	-.0219 (.31) P= .907
PROMO14	.0305 (.31) P= .870	-.0607 (.31) P= .746	.3211 (.31) P= .078	.2309 (.31) P= .211	.1965 (.31) P= .289	.1221 (.31) P= .513
PROMO15	-.3654 (.31) P= .043	-.1868 (.31) P= .314	-.1196 (.31) P= .521	-.2086 (.31) P= .260	-.2199 (.31) P= .235	.1580 (.31) P= .396
PROMO16	.0311 (.31) P= .868	.0431 (.31) P= .818	.1310 (.31) P= .482	.2539 (.31) P= .168	.2073 (.31) P= .263	-.1758 (.31) P= .344
PROMO17	.1639 (.31) P= .378	.1217 (.31) P= .514	.2109 (.31) P= .255	.1693 (.31) P= .362	.1780 (.31) P= .338	.1913 (.31) P= .302
PROMO2	.1001 (.31) P= .592	.1006 (.31) P= .590	.3179 (.31) P= .081	.2048 (.31) P= .269	.2383 (.31) P= .197	.2036 (.31) P= .272
PROMO3	.1023 (.31) P= .584	.0454 (.31) P= .808	.3605 (.31) P= .046	.2569 (.31) P= .163	.4175 (.31) P= .019	.3738 (.31) P= .038

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	PROMO5	PROMO6	PROMO7	PROMO8	PROMO9	SUCPROM
PROMO4	-.2616 (.31) P= .155	.1562 (.31) P= .401	-.0011 (.31) P= .995	-.1841 (.31) P= .322	-.0319 (.31) P= .865	.5103 (.31) P= .003
PROMO5	1.0000 (.31) P= .	.2884 (.31) P= .116	.3515 (.31) P= .053	.2143 (.31) P= .247	-.0432 (.31) P= .818	-.2429 (.31) P= .188
PROMO6	.2884 (.31) P= .116	1.0000 (.31) P= .	.2131 (.31) P= .250	.1659 (.31) P= .372	.0744 (.31) P= .691	-.1262 (.31) P= .499
PROMO7	.3515 (.31) P= .053	.2131 (.31) P= .250	1.0000 (.31) P= .	.7910 (.31) P= .000	.5565 (.31) P= .001	-.0539 (.31) P= .773
PROMO8	.2143 (.31) P= .247	.1659 (.31) P= .372	.7910 (.31) P= .000	1.0000 (.31) P= .	.7515 (.31) P= .000	-.0538 (.31) P= .774
PROMO9	-.0432 (.31) P= .818	.0744 (.31) P= .691	.5565 (.31) P= .001	.7515 (.31) P= .000	1.0000 (.31) P= .	-.0163 (.31) P= .931
SUCPROM	-.2429 (.31) P= .188	-.1262 (.31) P= .499	-.0539 (.31) P= .773	-.0538 (.31) P= .774	-.0163 (.31) P= .931	1.0000 (.31) P= .

Coefficient / (Cases) / 2-tailed Significance)

". ." is printed if a coefficient cannot be computed

ANALYSIS

- - Correlation Coefficients - -

	ANAL1	ANAL10	ANAL11	ANAL12	ANAL13	ANAL14
ANAL1	1.0000 (31) P= .	.1049 (31) P= .574	.0755 (31) P= .686	-.0719 (31) P= .701	.1104 (31) P= .554	.2572 (31) P= .162
ANAL10	.1049 (31) P= .574	1.0000 (31) P= .	.3038 (31) P= .097	.3219 (31) P= .077	.2725 (31) P= .138	.2647 (31) P= .150
ANAL11	.0755 (31) P= .686	.3038 (31) P= .097	1.0000 (31) P= .	.0909 (31) P= .627	-.0345 (31) P= .854	-.1514 (31) P= .416
ANAL12	-.0719 (31) P= .701	.3219 (31) P= .077	.0909 (31) P= .627	1.0000 (31) P= .	.5025 (31) P= .004	.3471 (31) P= .056
ANAL13	.1104 (31) P= .554	.2725 (31) P= .138	-.0345 (31) P= .854	.5025 (31) P= .004	1.0000 (31) P= .	.4976 (31) P= .004
ANAL14	.2572 (31) P= .162	.2647 (31) P= .150	-.1514 (31) P= .416	.3471 (31) P= .056	.4976 (31) P= .004	1.0000 (31) P= .
ANAL15	.3600 (31) P= .047	.2292 (31) P= .215	-.0189 (31) P= .920	.1233 (31) P= .509	.1457 (31) P= .434	.4675 (31) P= .008
ANAL16	.1005 (30) P= .597	-.0337 (30) P= .860	-.0865 (30) P= .650	.1080 (30) P= .570	.3857 (30) P= .035	.5159 (30) P= .004
ANAL17	.2929 (31) P= .110	.2916 (31) P= .111	-.1437 (31) P= .440	.3428 (31) P= .059	.4510 (31) P= .011	.2521 (31) P= .171
ANAL18	.2094 (31) P= .258	.3498 (31) P= .054	-.0246 (31) P= .896	.2920 (31) P= .111	.2270 (31) P= .219	.3034 (31) P= .097
ANAL2	.3785 (31) P= .036	.3945 (31) P= .028	.2730 (31) P= .137	.3155 (31) P= .084	.5162 (31) P= .003	.1806 (31) P= .331

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	ANAL1	ANAL10	ANAL11	ANAL12	ANAL13	ANAL14
ANAL3	.4915 (31) P= .005	.3361 (31) P= .065	.3258 (31) P= .074	.2154 (31) P= .245	.3771 (31) P= .036	-.0129 (31) P= .945
ANAL4	.2203 (31) P= .234	.3940 (31) P= .028	.5588 (31) P= .001	.1564 (31) P= .401	-.0082 (31) P= .965	.1079 (31) P= .564
ANAL5	.1134 (31) P= .543	.2815 (31) P= .125	.5318 (31) P= .002	.0372 (31) P= .842	-.1656 (31) P= .373	.0244 (31) P= .897
ANAL6	.1086 (31) P= .561	.1049 (31) P= .574	-.2918 (31) P= .111	.1307 (31) P= .483	-.1775 (31) P= .339	-.0405 (31) P= .829
ANAL7	.2665 (31) P= .147	.1959 (31) P= .291	.3026 (31) P= .098	.3579 (31) P= .048	-.0703 (31) P= .707	-.2323 (31) P= .208
ANAL8	.3693 (31) P= .041	.2198 (31) P= .235	-.0820 (31) P= .661	.3443 (31) P= .058	.5698 (31) P= .001	.1577 (31) P= .397
ANAL9	.1566 (31) P= .400	.2087 (31) P= .260	-.1162 (31) P= .534	.4807 (31) P= .006	.8142 (31) P= .000	.5118 (31) P= .003
SUCANT	-.0759 (29) P= .696	.4664 (29) P= .011	-.0211 (29) P= .914	.3446 (29) P= .067	.1905 (29) P= .322	.0187 (29) P= .935

Coefficient / (Cases) / 2-tailed Significance)

" ." is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	ANAL15	ANAL16	ANAL17	ANAL18	ANAL2	ANAL3
ANAL1	.3600 (31) P= .047	.1005 (30) P= .597	.2929 (31) P= .110	.2094 (31) P= .258	.3785 (31) P= .036	.4915 (31) P= .005
ANAL10	.2292 (31) P= .215	-.0337 (30) P= .860	.2916 (31) P= .111	.3498 (31) P= .054	.3945 (31) P= .028	.3361 (31) P= .065
ANAL11	-.0189 (31) P= .920	-.0865 (30) P= .650	-.1437 (31) P= .440	-.0246 (31) P= .896	.2730 (31) P= .137	.3258 (31) P= .074
ANAL12	.1233 (31) P= .509	.1080 (30) P= .570	.3428 (31) P= .059	.2920 (31) P= .111	.3155 (31) P= .084	.2154 (31) P= .245
ANAL13	.1457 (31) P= .434	.3857 (30) P= .035	.4510 (31) P= .011	.2270 (31) P= .219	.5162 (31) P= .003	.3771 (31) P= .036
ANAL14	.4675 (31) P= .008	.5159 (30) P= .004	.2521 (31) P= .171	.3034 (31) P= .097	.1806 (31) P= .331	-.0129 (31) P= .945
ANAL15	1.0000 (31) P= .	.1182 (30) P= .534	.0268 (31) P= .886	.1623 (31) P= .383	-.0643 (31) P= .731	-.0232 (31) P= .901
ANAL16	.1182 (30) P= .534	1.0000 (30) P= .	.1267 (30) P= .505	.0440 (30) P= .817	.1171 (30) P= .538	.0564 (30) P= .767
ANAL17	.0268 (31) P= .886	.1267 (30) P= .505	1.0000 (31) P= .	.6953 (31) P= .000	.4118 (31) P= .021	.3435 (31) P= .059
ANAL18	.1623 (31) P= .383	.0440 (30) P= .817	.6953 (31) P= .000	1.0000 (31) P= .	.2993 (31) P= .102	.2011 (31) P= .278
ANAL2	-.0643 (31) P= .731	.1171 (30) P= .538	.4118 (31) P= .021	.2993 (31) P= .102	1.0000 (31) P= .	.7026 (31) P= .000

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	ANAL15	ANAL16	ANAL17	ANAL18	ANAL2	ANAL3
ANAL3	-.0232 (31) P= .901	.0564 (30) P= .767	.3435 (31) P= .059	.2011 (31) P= .278	.7026 (31) P= .000	1.0000 (31) P= .
ANAL4	.2265 (31) P= .221	-.0906 (30) P= .634	.0089 (31) P= .962	.0982 (31) P= .599	.3834 (31) P= .033	.1913 (31) P= .302
ANAL5	.0439 (31) P= .815	.0756 (30) P= .691	-.1561 (31) P= .402	-.1869 (31) P= .314	.2212 (31) P= .232	.0146 (31) P= .938
ANAL6	.2338 (31) P= .206	.0743 (30) P= .697	.2709 (31) P= .140	.3268 (31) P= .073	-.1262 (31) P= .499	.0434 (31) P= .817
ANAL7	.0880 (31) P= .638	-.0520 (30) P= .785	.1029 (31) P= .582	.0387 (31) P= .836	.3938 (31) P= .028	.3843 (31) P= .033
ANAL8	.1683 (31) P= .366	.0324 (30) P= .865	.3279 (31) P= .072	.2423 (31) P= .189	.6723 (31) P= .000	.7384 (31) P= .000
ANAL9	.2424 (31) P= .189	.3702 (30) P= .044	.3461 (31) P= .056	.2256 (31) P= .222	.4366 (31) P= .014	.2713 (31) P= .140
SUCANL	.1190 (29) P= .539	-.4666 (29) P= .011	.0381 (29) P= .844	.1381 (29) P= .475	.0826 (29) P= .670	.0468 (29) P= .809

Coefficient (Cases) / 2-tailed Significance)

" " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	ANAL4	ANAL5	ANAL6	ANAL7	ANAL8	ANAL9
ANAL1	.2203 (31) P= .234	.1134 (31) P= .543	.1086 (31) P= .561	.2665 (31) P= .147	.3693 (31) P= .041	.1566 (31) P= .400
ANAL10	.3940 (31) P= .028	.2815 (31) P= .125	.1049 (31) P= .574	.1959 (31) P= .291	.2198 (31) P= .235	.2087 (31) P= .260
ANAL11	.5588 (31) P= .001	.5318 (31) P= .002	-.2918 (31) P= .111	.3026 (31) P= .098	-.0820 (31) P= .661	-.1162 (31) P= .534
ANAL12	.1564 (31) P= .401	.0372 (31) P= .842	.1307 (31) P= .483	.3579 (31) P= .048	.3443 (31) P= .058	.4807 (31) P= .006
ANAL13	-.0082 (31) P= .965	-.1656 (31) P= .373	-.1775 (31) P= .339	-.0703 (31) P= .707	.5698 (31) P= .001	.8142 (31) P= .000
ANAL14	.1079 (31) P= .564	.0244 (31) P= .897	-.0405 (31) P= .829	-.2323 (31) P= .208	.1577 (31) P= .397	.5118 (31) P= .003
ANAL15	.2265 (31) P= .221	.0439 (31) P= .815	.2338 (31) P= .206	.0880 (31) P= .638	.1683 (31) P= .366	.2424 (31) P= .189
ANAL16	-.0906 (30) P= .634	.0756 (30) P= .691	.0743 (30) P= .697	-.0520 (30) P= .785	.0324 (30) P= .865	.3702 (30) P= .044
ANAL17	.0089 (31) P= .962	-.1561 (31) P= .402	.2709 (31) P= .140	.1029 (31) P= .582	.3279 (31) P= .072	.3461 (31) P= .056
ANAL18	.0982 (31) P= .599	-.1869 (31) P= .314	.3268 (31) P= .073	.0387 (31) P= .836	.2423 (31) P= .189	.2256 (31) P= .222
ANAL2	.3834 (31) P= .033	.2212 (31) P= .232	-.1262 (31) P= .499	.3938 (31) P= .028	.6723 (31) P= .000	.4366 (31) P= .014

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	ANAL4	ANAL5	ANAL6	ANAL7	ANAL8	ANAL9
ANAL3	.1913 (31) P= .302	.0146 (31) P= .938	.0434 (31) P= .817	.3843 (31) P= .033	.7384 (31) P= .000	.2713 (31) P= .140
ANAL4	1.0000 (31) P= .	.6775 (31) P= .000	-.1748 (31) P= .347	.4246 (31) P= .017	.1366 (31) P= .464	.0084 (31) P= .964
ANAL5	.6775 (31) P= .000	1.0000 (31) P= .	-.0819 (31) P= .661	.4381 (31) P= .014	-.1137 (31) P= .543	-.0618 (31) P= .741
ANAL6	-.1748 (31) P= .347	-.0819 (31) P= .661	1.0000 (31) P= .	.3087 (31) P= .091	.0039 (31) P= .983	-.1004 (31) P= .591
ANAL7	.4246 (31) P= .017	.4381 (31) P= .014	.3087 (31) P= .091	1.0000 (31) P= .	.2993 (31) P= .102	.1412 (31) P= .449
ANAL8	.1366 (31) P= .464	-.1137 (31) P= .543	.0039 (31) P= .983	.2993 (31) P= .102	1.0000 (31) P= .	.5325 (31) P= .002
ANAL9	.0084 (31) P= .964	-.0618 (31) P= .741	-.1004 (31) P= .591	.1412 (31) P= .449	.5325 (31) P= .002	1.0000 (31) P= .
SUCANL	-.0190 (29) P= .922	-.0783 (29) P= .686	.0704 (29) P= .717	-.0659 (29) P= .734	.2227 (29) P= .246	.0313 (29) P= .872

(Coefficient / (Cases) / 2-tailed Significance)

" ." is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	SUCANL
ANAL1	-.0759 (29) P= .696
ANAL10	.4664 (29) P= .011
ANAL11	-.0211 (29) P= .914
ANAL12	.3446 (29) P= .067
ANAL13	.1905 (29) P= .322
ANAL14	.0157 (29) P= .935
ANAL15	.1190 (29) P= .539
ANAL16	-.4666 (29) P= .011
ANAL17	.0381 (29) P= .844
ANAL18	.1381 (29) P= .475
ANAL2	.0826 (29) P= .670

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

- - Correlation Coefficients - -

	SUCANL
ANAL3	.0468 (29) P= .809
ANAL4	-.0190 (29) P= .922
ANAL5	-.0783 (29) P= .686
ANAL6	.0704 (29) P= .717
ANAL7	-.0659 (29) P= .734
ANAL8	.2227 (29) P= .246
ANAL9	.0313 (29) P= .872
SUCANL	1.0000 (29) P= .

Coefficient (Cases) / 2-tailed Significance)

" ." is printed if a coefficient cannot be computed

APPENDIX 11: DEFINITION OF SUCCESS FOR EACH STAGE OF THE LIFE CYCLE.

DESCRIPTIVE SCORES

DEFANAL1

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	9	29.0	100.0	100.0
	.	22	71.0	Missing	
Total		31	100.0	100.0	
Valid cases	9	Missing cases	22		

DEFANAL2

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	8	25.8	100.0	100.0
	.	23	74.2	Missing	
Total		31	100.0	100.0	
Valid cases	8	Missing cases	23		

DEFANAL3

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	6	19.4	100.0	100.0
	.	25	80.6	Missing	
Total		31	100.0	100.0	
Valid cases	6	Missing cases	25		

DEFANAL4

Value Label			Valid	Cum		
	Value	Frequency	Percent	Percent	Percent	Percent
	1	2	6.5	100.0	100.0	
	.	29	93.5	Missing		
	Total	31	100.0	100.0		

Valid cases 2 Missing cases 29

DEFANAL5

Value Label			Valid	Cum		
	Value	Frequency	Percent	Percent	Percent	Percent
	1	2	6.5	100.0	100.0	
	.	29	93.5	Missing		
	Total	31	100.0	100.0		

Valid cases 2 Missing cases 29

DEFANAL6

Value Label			Valid	Cum		
	Value	Frequency	Percent	Percent	Percent	Percent
	1	8	25.8	100.0	100.0	
	.	23	74.2	Missing		
	Total	31	100.0	100.0		

Valid cases 8 Missing cases 23

DEFDES11

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	18	58.1	100.0	100.0
	.	13	41.9	Missing	
Total		31	100.0	100.0	

Valid cases 18 Missing cases 13

DEFDES12

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	7	22.6	100.0	100.0
	.	24	77.4	Missing	
Total		31	100.0	100.0	

Valid cases 7 Missing cases 24

DEFDES13

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	5	16.1	100.0	100.0
	.	26	83.9	Missing	
Total		31	100.0	100.0	

Valid cases 5 Missing cases 26

DEFDESI4

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	9	29.0	100.0	100.0
	.	22	71.0	Missing	

	Total	31	100.0	100.0	
Valid cases	9	Missing cases	22		

DEFDESI5

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	1	3.2	100.0	100.0
	.	30	96.8	Missing	

	Total	31	100.0	100.0	
Valid cases	1	Missing cases	30		

DEFDESI6

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	13	41.9	100.0	100.0
	.	18	58.1	Missing	

	Total	31	100.0	100.0	
Valid cases	13	Missing cases	18		

DEFIMPL1

Value Label	Value	Frequency	Valid Percent	Cum Percent
	1	7	22.6	100.0
	.	24	77.4	Missing
Total	31	100.0	100.0	

Valid cases 7 Missing cases 24

DEFIMPL2

Value Label	Value	Frequency	Valid Percent	Cum Percent
	1	2	6.5	100.0
	.	29	93.5	Missing
Total	31	100.0	100.0	

Valid cases 2 Missing cases 29

DEFIMPL3

Value Label	Value	Frequency	Valid Percent	Cum Percent
	1	3	9.7	100.0
	.	28	90.3	Missing
Total	31	100.0	100.0	

Valid cases 3 Missing cases 28

DEFIMPL4

Value Label	Value	Frequency	Valid Percent	Cum Percent	Percent
	1	7	22.6	100.0	100.0
	.	24	77.4	Missing	
	Total	31	100.0	100.0	
Valid cases	7	Missing cases	24		

DEFIMPL5

Value Label	Value	Frequency	Valid Percent	Cum Percent	Percent
	1	1	3.2	100.0	100.0
	.	30	96.8	Missing	
	Total	31	100.0	100.0	
Valid cases	1	Missing cases	30		

DEFIMPL6

Value Label	Value	Frequency	Valid Percent	Cum Percent	Percent
	1	3	9.7	100.0	100.0
	.	28	90.3	Missing	
	Total	31	100.0	100.0	
Valid cases	3	Missing cases	28		

DEFIMPL7

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	11	35.5	100.0	100.0
	.	20	64.5	Missing	

Total		31	100.0	100.0	

Valid cases 11 Missing cases 20

DEFMAIN1

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	9	29.0	100.0	100.0
	.	22	71.0	Missing	

Total		31	100.0	100.0	

Valid cases 9 Missing cases 22

DEFMAIN2

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	18	58.1	100.0	100.0
	.	13	41.9	Missing	

Total		31	100.0	100.0	

Valid cases 18 Missing cases 13

DEFMAIN3

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	3	9.7	100.0	100.0
	.	28	90.3	Missing	
		-----	-----	-----	
	Total	31	100.0	100.0	
Valid cases	3	Missing cases	28		

DEFMAIN4

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	1	3.2	100.0	100.0
	.	30	96.8	Missing	
		-----	-----	-----	
	Total	31	100.0	100.0	
Valid cases	1	Missing cases	30		

DEFMAIN5

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	4	12.9	100.0	100.0
	.	27	87.1	Missing	
		-----	-----	-----	
	Total	31	100.0	100.0	
Valid cases	4	Missing cases	27		

DEFMAIN6

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	7	22.6	100.0	100.0
	.	24	77.4	Missing	
		-----	-----	-----	
Total	31	100.0	100.0		
Valid cases	7	Missing cases	24		

DEFPLAN1

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	0	1	3.2	20.0	20.0
	1	4	12.9	80.0	100.0
	.	26	83.9	Missing	
		-----	-----	-----	
Total	31	100.0	100.0		
Valid cases	5	Missing cases	26		

DEFPLAN2

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	7	22.6	100.0	100.0
	.	24	77.4	Missing	
		-----	-----	-----	
Total	31	100.0	100.0		
Valid cases	7	Missing cases	24		

DEFPLAN3

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	1	3.2	100.0	100.0
	.	30	96.8	Missing	

Total	31	100.0	100.0		

Valid cases 1 Missing cases 30

DEFPLAN4

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	4	12.9	100.0	100.0
	.	27	87.1	Missing	

Total	31	100.0	100.0		

Valid cases 4 Missing cases 27

DEFPLAN5

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	5	16.1	100.0	100.0
	.	26	83.9	Missing	

Total	31	100.0	100.0		

Valid cases 5 Missing cases 26

DEFPLAN6

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	3	9.7	100.0	100.0
	.	28	90.3	Missing	

Total	31	100.0	100.0		
Valid cases	3	Missing cases	28		

DEFPLAN7

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	13	41.9	100.0	100.0
	.	18	58.1	Missing	

Total	31	100.0	100.0		
Valid cases	13	Missing cases	18		

DEFPROM1

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	4	12.9	100.0	100.0
	.	27	87.1	Missing	

Total	31	100.0	100.0		
Valid cases	4	Missing cases	27		

DEFFROM2

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	7	22.6	100.0	100.0
	.	24	77.4	Missing	
Total		31	100.0	100.0	
Valid cases	7	Missing cases	24		

DEFFROM3

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	4	12.9	100.0	100.0
	.	27	87.1	Missing	
Total		31	100.0	100.0	
Valid cases	4	Missing cases	27		

DEFFROM4

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	1	3.2	100.0	100.0
	.	30	96.8	Missing	
Total		31	100.0	100.0	
Valid cases	1	Missing cases	30		

DEFROM5

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	4	12.9	100.0	100.0
	.	27	87.1	Missing	
	Total	31	100.0	100.0	
Valid cases	4	Missing cases	27		

DEFROM6

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	2	6.5	100.0	100.0
	.	29	93.5	Missing	
	Total	31	100.0	100.0	
Valid cases	2	Missing cases	29		

DEFROM7

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	4	12.9	100.0	100.0
	.	27	87.1	Missing	
	Total	31	100.0	100.0	
Valid cases	4	Missing cases	27		

DEFROM8

Value Label	Value	Valid		Cum	
		Frequency	Percent	Percent	Percent
	1	7	22.6	100.0	100.0
	.	24	77.4	Missing	

	Total	31	100.0	100.0	
Valid cases	7	Missing cases	24		

Appendix 12: Web Site planning and Development Process. Final Methodology Described.

STAGE 1: PLANNING

- The champion or project manager who is assigned to the corporate Web site must be familiar with the firms overall goals and strategic direction. The company business or marketing plan should be revisited and the firms direction should be clear to the development team. This will help in establishing target markets, objectives and audience but also will guide the team towards an analysis of competing businesses on the Web (i.e.: What does the competitors site look like).
- Define the purpose of the Web site in detail and put this on paper. A web site essentially disseminates information and invites audience feedback. From a marketing point of view, this can translate into several goals. The first task in web planning is to list what the company hopes to achieve with its site. Possible site goals can include:
  - ⇒ Customer service improvement (24hr, immediate and global)
  - ⇒ Promotion of products and services
  - ⇒ Customer Database Creation
  - ⇒ Feedback on current offering
  - ⇒ Expanding into new markets (possibly global).
  - ⇒ Product demonstrations
- Establish the site goals and prioritize them. A formal assessment of resources available, returns and learning curves is at the heart of this exercise: There must be a political will to support the evolution of the company in cyberspace.
- A formal feasibility analysis and a payback schedule may help the champion gain upper management support. This exercise may also shed light on priorities and timing issues.
- If the company is going to build the Web site in-house then it will have to acquire staff who is competent in communication, HTML, graphics and other Web technologies.
- Schedule socializing and team-building time early in the process.
- Particular emphasis should be placed on the human element. Demographic profiles should be noted by the development team and carefully studied. Questions regarding level of Web awareness, sophistication, information needs and possible behavior should be answered. For example: Where would these users

navigate on the Web and which words would they type in a search engine in order to look up similar types of offerings.

- Competitive analysis should be followed by an analysis of other sites with similar goals but not necessarily from the same Industry. A review of sites which are known for excellence (i.e.: top 5% of the Web) can help in evaluating various types of interesting functionality.
- Define desired functionality types. Here it is important to specify that 2 categories of functionality exist. The first type is functional, meaning that the item helps the site function properly based on what objectives are set. The second type is what Hoffman and Novack (1997) classify as “Web traffic control”. There are several types of incentives that will attract users:
  - ⇒ Financial: A chance to win something of monetary value.
  - ⇒ Intellectual: Free information that can be used by the target.
  - ⇒ functional: Search engine, directory or a useful applications related to the industry.
  - ⇒ Entertaining: Daily cartoons, jokes or quizzes about the industry.
- Brainstorming on paper the various elements that the company would like to start presenting and organizing this into site structure. It is important to do this in the early stages of the process in order to set a framework where marketing implications of navigation barriers can be confronted before the design stage. For example what will the overall structure of the site look like? Will each product, department division, office have it's own Web site and domain name? Who will be responsible of administration?
- Based on some of the answers that come out of brainstorming the firm can start Researching and reserving a set of domain names that will identify and reinforce brand identity. The firm can also prepare to acquire particular resources including outsourcing needs.
- Investigating future technological innovations and trends that may play a role in the development of the Web site.
- Preparing a final feasibility document and outlining all of the information gained from the brainstorming exercise. The document should at the very least include:
  - ⇒ Time line
  - ⇒ Budget
  - ⇒ Information/Navigation Analysis
  - ⇒ Hardware Requirements

- ⇒ Training requirements
- ⇒ Bandwidth utilization projections

GATE 1
1. Get upper management approval and commitment for the project.   2. Approval to begin the design stage.
DELIVERABLES
1. Production plan and/or proposal to design the Web site.

STAGE 2 : DESIGN

Design is a very iterative process that involves a lot of human interaction. This step remains an art form rather than a science and personal relations skills is as important as talent and skills.

- Design starts with tools that aid in nailing down the specifics of the build or site structure. This defers from the general drawings in planning where the goal was to help decide objectives in the big picture. analogous with Garzoto et al.(1993) call "authoring in the large". Firms can use many types of modeling tools including:
  - ⇒ Data flow or E-R diagram
  - ⇒ Site Maps
  - ⇒ Thumbnails
  - ⇒ Storyboards
- While this research did not focus on a particular modeling device, a variance from HDM (Garzoto et al. 1993) is a recommended.
- Helping users find information will be a critical challenge. There are different types of navigation tools to consider:
  - ⇒ Page navigation aids: Consistent tools to help people travel through Web-space
  - ⇒ Navigation metaphors: One that reinforces brand identity.
  - ⇒ Site Maps
  - ⇒ Search engines
- A formal image research should be conducted in order to better evaluate the graphics needed for inclusion in the Web site.

- It is important that the project leader or Webmaster supervise the creation of graphics and illustration. Many graphic designers are not accustomed to bandwidth limitations that should be imposed on their work. The Webmaster must play the role of “bandwidth police”.
- Designing style sheet templates, logos, illustration, navigation graphics and start to get approval. While most of these components will be used over and over again through the development life cycle, it is important to recognize that approval for each individual component is tentative. A second approval needs to be obtained when different elements are put together and presented in end user perspective (downloaded from the server).
- A critical point in the development is attained when all parties come together to discuss the site design. Different parties means that upper representative from upper management, communication or PR personnel and the development team all come together to spend quality time on deciding the key elements of the company outlook in cyberspace. It is often necessary to use tools like Microsoft Frontpage and Netscape Gold to rapidly prototype and manipulate many versions of a layout during presentation. It helps to do real time prototyping and rework the template until all parties agree. The latter is not an easy achievement because there are strong differences of opinion when it comes to graphical user interface (GUI). Still the team must prototype several pages from the site and keep reworking to make sure it is:
  - ⇒ Intuitive
  - ⇒ Easy to understand
  - ⇒ Visually Interesting and fun
  - ⇒ Balanced (text or graphics are not overwhelming)
  - ⇒ Downloading fast from server
- Several brainstorming sessions may produce different designs which can be tested with a focus group.
- Make necessary modifications
- Test to make sure it is intuitive, uncluttered and meets the need of different user types.
- A proposal to implement the first or next phase of the Web site

GATE 2
1. Confirm that Web site design reinforces brand identity. 2. Determine if the design is consistent, self-evident and intuitive. 3. Approval of templates, logos, images by the whole team.

DELIVERABLES

1. Detailed site map to be used in next phase
2. Proposal to implement next phase

STAGE 3 : IMPLEMENTATION

- Create an extendible directory and file structure to manage the Web's files, images and/or software components.
- Clearly identify and organize different components for reuse: html templates, backgrounds, logos, navigation graphics and scripts.
- Production plan that divides the work into various sections and directories. All team members must understand the whole and have a detailed site map in order to understand how their portion of the work will be linked from other pages within a site.
- Implement the site structure and coordinate various elements so that there is consistent pace of development. The single most difficult factor to control is content acquisition. Since text links are needed to put the site together, development may be hampered by a long lead time. There must be a set procedure in place before implementation.
- One administrative body must insure that all text obtained has approval for publishing.
Make sure that upper management enforces timely processing of content.
- Text write or scan all needed text. Revise and Condense (retraining the idea that less is better).
- Proofread text (many mistakes can occur in OCR scanning).
- Expand for multiple browsers, operating systems and hardware
- Quality assurance
  - ⇒ Alpha test
  - ⇒ Check all links
  - ⇒ Proofread the work again
  - ⇒ Put online (upload Web site)
  - ⇒ Test again
  - ⇒ Check the Web's implementation in various browsers
  - ⇒ Display beta test site and invite users to e-mail feedback
- Make necessary modifications

GATE 3

1. Confirm that Web site design reinforces brand identity.
2. Determine if the design is consistent, self evidence and intuitive.
3. Approval of templates, logos, images by the whole team.
4. Collect feedback from beta test and understand how the site can be improved further in the future.
5. Determine if the site is presently accomplishing objectives that meet the needs of the users.
6. Obtain resources needed to maintain and upkeep the Web site.

DELIVERABLES

1. A fully functional Web site

STAGE 4: MAINTENANCE

- Designating a full time Webmaster as the individual responsible for the upkeep of the site and empower this person with the authority in establishing guidelines for information use and updates. The Webmaster must address critical questions about maintenance.

Publishing standards:

- ⇒ Can anyone publish?
- ⇒ What are publishers' responsibilities?
- ⇒ Who is responsible for content?
- ⇒ Are there standards or guidelines?

Data quality and management

- ⇒ Is this the "right" information?
- ⇒ Is it up to date? accurate?
- ⇒ Who manages Web data quality?

- Training employees to use certain guidelines or adhere to certain standards.
- Establishing a chain of command for the upkeep of a site: Who provides the information, who types the information, which groups validate the information (i.e.: do all documents go to legal department approval?
- Implementing a tracking procedures and generate reports routinely.
- Changing the look of a Web site (without changing the content) from time to time.
- Processing feedback from users to management

GATE 4	
1.	Validate the domain information presented, is accurate, up-to-date, and complete?
2.	Is accomplishing objectives that meet the needs of the users?
DELIVERABLES	
1.	Web site is up to date and is evolving.
2.	Organizational commitment

STAGE 5: PROMOTION

- An ad campaign both on and off the Web can help increase the exposure of the Web site. It is imperative to clearly define the audience, the response sought and the key message to be delivered.
- Offering regularly updated content (story, news, cartoons).
- Participating in mutual pointers (Banner exchange).
- Offering free services to attract users.
- Sending Press releases to online and print publications
- Sending notices about the Web site to mailing lists and newsgroups
- Registering URL of the Web site with search engines, directories and indexes
- Having ongoing contests

GATE 5
1. Is the Web site accessed in a balanced manner, both in terms of its own files and in terms of outside links into it?   2. Is the Web site address being considered for addition in all promotional material?
DELIVERABLES
1. Marketing commitment in integrating Web site promotion in marketing strategy.

STAGE 6: EVALUATION

- A summary of feedback from users to management.
- Investigating if the site reaches its intended audience.
- Evaluating whether the Web site's purpose matches its specifications.
- Analyzing the log statistics to see how files within the site are being accessed.
- Analyzing the log statistics and using search engines to see how other sites are linked towards your Web site.

GATE 6	
DELIVERABLES	
1.	Evaluation Report: A report that highlights how successful each phase of the life cycle was and how to improve this in future builds.
2.	Proposal to start next build

Appendix 13: Box Plots.

Variable	Mean	Kurtosis	S.E.	Kurt	Skewness	S.E.	Skew	N
SCORES	5.37	.77	.21	-1.08	.11			527

Variable	Mean	Kurtosis	S.E. Kurt	Skewness	S.E. Skew	N
SCORES	5.22	-.03	.19	-.76	.10	649

Variable	Mean	Kurtosis	S.E. Kurt	Skewness	S.E. Skew	N
SCORES	5.47	.58	.25	-1.10	.13	371

Variable	Mean	Kurtosis	S.E. Kurt	Skewness	S.E. Skew	N
SCORES	5.32	.17	.23	-.95	.12	434

Variable	Mean	Kurtosis	S.E. Kurt	Skewness	S.E. Skew	N
SCORES	5.32	.25	.19	-.95	.10	647

IMAGE EVALUATION TEST TARGET (QA-3)

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