INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

**Bell & Howell Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600**

UMI[®]

**FACTORS DISTINGUISHING HIGH TRAFFIC ON-LINE STORES FROM LOW
TRAFFIC ON-LINE STORES**

by

Sangeeta Iyer, M.Comm.

M.M.S. THESIS

**A Thesis submitted to the Faculty of Graduate Studies and Research in partial
fulfillment of the requirements for the degree of**

Master of Management Studies

**School of Business
Carleton University
Ottawa, Ontario**

February, 2000

© Copyright

2000, Sangeeta Iyer

**National Library
of Canada**

**Acquisitions and
Bibliographic Services**

**395 Wellington Street
Ottawa ON K1A 0N4
Canada**

**Bibliothèque nationale
du Canada**

**Acquisitions et
services bibliographiques**

**395, rue Wellington
Ottawa ON K1A 0N4
Canada**

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-52399-3

The undersigned recommend to the Faculty of Graduate Studies
and Research acceptance of the thesis

**FACTORS DISTINGUISHING HIGH TRAFFIC ON-LINE STORES FROM LOW
TRAFFIC ON-LINE STORES**

submitted by Sangeeta Iyer, M.Comm,
in partial fulfillment of the requirements for the degree of
Master of Management Studies

Thesis Supervisor

Director, School of Business

Carleton University

Dedicated to my father Shri. P.V. Iyer....

FACTORS DISTINGUISHING HIGH TRAFFIC ON-LINE STORES FROM LOW TRAFFIC ON-LINE STORES

by

Sangeeta Iyer

ABSTRACT

The objective of this research is to identify the factors that distinguish high traffic from low traffic on-line stores. Data was collected from 200 on-line stores. High traffic on-line stores were identified from the website 100hot.com. The 100 low traffic on-line stores were selected at random from shopguide.com.

Twelve variables (security, privacy, affiliate networks, reciprocal links, banner advertising, breadth of products, chat, customer participation, e-mail marketing, newsletter, on-line distribution and order tracking) were considered as distinguishing factors. These variables were hypothesized and tested using Multiple Logistic Regression Analysis. The analysis reveals security, privacy, reciprocal links, chat, customer participation, and order tracking as distinguishing factors between high traffic and low traffic on-line stores.

The results of the study suggest that high traffic in on-line stores is due to the interactivity and connectivity that the on-line stores establish with their customers. The features of interactivity and connectivity have been highlighted in the Marketspace model developed by Dutta et al (1997). The Marketspace model analyzes how organizations can transform their business models in the electronic marketplace created by the Internet and the World Wide Web. The model has been used in this research to recognize the key features of on-line stores that attract high traffic.

ACKNOWLEDGEMENTS

I would like to thank a number of people for the completion of my thesis. It was Professor George Haines who guided me in the approach towards the thesis, and I am grateful to him for that. My thesis supervisor, Professor Tony Bailetti assisted me in selecting a current and interesting topic, and has been very helpful with resources for the research. Professor Uma Kumar and Professor Ian Lee have constantly guided me with their valuable comments and suggestions for improvement. Professor Shirley Mills' special guidance with respect to the analysis of this research, is highly appreciated. I would also like to thank my husband, Muthu Nagarajan and the rest of my family for their support and patience throughout this period.

Table of Contents

ABSTRACT	i
ACKNOWLEDGEMENTS	ii
LIST OF FIGURES.....	vi
LIST OF TABLES.....	vii
CHAPTER 1.....	1
<i>INTRODUCTION.....</i>	<i>1</i>
1.1 <i>Research Question.....</i>	<i>3</i>
1.2 <i>Contribution of Research.....</i>	<i>3</i>
1.2.1 <i>To Academic Literature</i>	<i>3</i>
1.2.2 <i>To Management Practice.....</i>	<i>3</i>
1.3 <i>Organization of the Thesis.....</i>	<i>4</i>
CHAPTER 2.....	5
<i>LITERATURE REVIEW.....</i>	<i>5</i>
2.1 <i>Types of products sold on the Internet.....</i>	<i>5</i>
2.2 <i>Benefits of on-line stores.....</i>	<i>8</i>
2.3 <i>The Business Model for On-line Stores</i>	<i>12</i>
2.3.1 <i>The variables derived from the Marketspace Model.....</i>	<i>14</i>
CHAPTER 3.....	19
<i>TESTABLE HYPOTHESES.....</i>	<i>19</i>
3.1 <i>Security.....</i>	<i>19</i>
3.2 <i>Privacy.....</i>	<i>20</i>
3.3 <i>Affiliate Networks</i>	<i>21</i>
3.4 <i>Reciprocal Links</i>	<i>22</i>
3.5 <i>Banner Advertising.....</i>	<i>22</i>
3.6 <i>Customer Participation</i>	<i>23</i>
3.7 <i>Chat</i>	<i>24</i>
3.8 <i>E-mail Marketing.....</i>	<i>24</i>
3.9 <i>Newsletter</i>	<i>25</i>
3.10 <i>On-line Distribution of Products</i>	<i>26</i>
3.11 <i>Breadth of products</i>	<i>27</i>
3.12 <i>Order Tracking.....</i>	<i>28</i>
3.13 <i>Summary of Hypotheses.....</i>	<i>29</i>
CHAPTER 4.....	31
<i>RESEARCH DESIGN</i>	<i>31</i>

4.1 Unit of Analysis.....	31
4.2 Sample	31
4.3 On-line Store Selection.....	31
4.4 Time of Data Collection.....	32
4.5 Research Sources.....	32
4.6 Measures.....	32
4.6.1 Security	32
4.6.2 Privacy.....	33
4.6.3 Affiliate Networks	33
4.6.4 Reciprocal Links	33
4.6.5 Banner Advertising	34
4.6.6 Customer Participation	34
4.6.7 Chat	34
4.6.8 E-mail Marketing.....	34
4.6.9 Newsletter	34
4.6.10 On-line Distribution of products.....	35
4.6.11 Breadth of products	35
4.6.12 Order Tracking	35
4.7 Data Analysis.....	36
CHAPTER 5.....	37
RESULTS.....	37
5.1 Data Collected.....	37
5.1.1 Frequency Table	38
5.2 Model Fit	39
5.3 Research Model.....	41
5.3.1 Variables in the Equation	41
5.3.2 Variables not in the equation.....	48
CHAPTER 6.....	49
6.1 Discussion of Results.....	49
6.2 Limitations of the Study	51
REFERENCES	52
APPENDICES.....	55
Appendix A - Customer Participation.....	55
Appendix B - Banner Advertising.....	56
Appendix C - Reciprocal Links (a)	57
Appendix D - Reciprocal Links (b)	58
Appendix E - Security	59
Appendix F - On-line Distribution of Products	60
Appendix G - Affiliate Networks	61
Appendix H - Privacy.....	62

<i>Appendix I - E-mail Marketing.....</i>	<i>63</i>
<i>Appendix J - Newsletter</i>	<i>64</i>
<i>Appendix K - Chat</i>	<i>65</i>
<i>Appendix L - Breadth of Products</i>	<i>66</i>
<i>Appendix M - Order Tracking</i>	<i>67</i>
<i>Appendix N - Checklist of Variables Measured.....</i>	<i>68</i>
<i>Appendix O - List of 100 hot On-line Stores.....</i>	<i>70</i>
<i>Appendix P - List of Non-100 hot On-line Stores</i>	<i>73</i>
<i>Appendix Q - Verification of data collected</i>	<i>76</i>
<i>Appendix R - Frequency Tables for Continuous Data.....</i>	<i>80</i>

LIST OF FIGURES

<i>Figure 1 - Marketspace Model</i>	12
---	----

LIST OF TABLES

<i>Table 1 - Projected On-line Shopping Revenue (In Million Dollars) by Category, 1996-2000.....</i>	<i>5</i>
<i>Table 2(a) - Frequency Table for binary data.....</i>	<i>38</i>
<i>Table 2(b) - Frequency Table for continuous data.....</i>	<i>38</i>
<i>Table 3 - Hosmer and Lemeshow Goodness-of-Fit Test.....</i>	<i>39</i>
<i>Table 4(a) - Variables in the Equation.....</i>	<i>41</i>
<i>Table 4(b) - Variables in the equation with the odds ratio.....</i>	<i>46</i>
<i>Table 5 - Variables not in the equation.....</i>	<i>48</i>

CHAPTER 1

INTRODUCTION

On-line stores are stores that sell products and services over the Internet. On-line stores operate directly with customers without layers of middle men, and have the ability to reach a global audience, operate 24 hours a day, 7 days a week, and provide customers with a broad selection of products and services. The products and services being sold by on-line stores range from consumer products like appliances and apparel to services like banking and trading services.

The need to attract, acquire, leverage and retain customers is of primary concern to most on-line stores. Revenue growth through customer acquisition and retention remains a major competitive requirement. Each time a customer visits an on-line store, an opportunity to provide the customer with the respective products or services arises. In the event of planning for success, an on-line store must possess certain features and perform certain activities in order to attract traffic to their website (Shikar Ghosh, 1997). Traffic is defined as the number of first time and repeat visitors to an on-line store. High traffic increases the likelihood of profits for on-line stores (<http://www.cyberm.com/ecsd.htm>).

Successful on-line stores understand that traditional business designs and organizational models are insufficient to meet the challenges of doing business on-line. On-line stores with high traffic, like Dell, Cisco and Amazon, have adopted a new business design, one that emphasizes a finely tuned integration of business technology and process that lays stress on interactivity and connectivity with the customers. Many

traditionally successful companies that have opened on-line stores without adopting the new paradigm have not been attracting high traffic.

Research in the field of on-line stores, especially with respect to traffic, is scarce due to its recent nature. The features required for a successful, high traffic on-line store have been mentioned by a number of people, but not much has been proved with empirical research. This research seeks to bring out the factors that will lead to high traffic, and thus to more successful on-line stores.

1.1 Research Question

What are the factors that distinguish high traffic from low traffic on-line stores ?

1.2 Contribution of Research

1.2.1 To Academic Literature

This research is the first empirical study on the distinguishing factors between high traffic and low traffic on-line stores.

1.2.2 To Management Practice

New entrants to on-line business and low traffic on-line stores can identify important features to be possessed and functions to be performed in order to attract traffic. They can also prioritize their budgets, by concentrating on the important features proved to attract traffic, develop business skills to design an on-line store, and establish partnerships with other on-line stores by means of affiliate networks and reciprocal links.

1.3 Organization of the Thesis

There are six chapters. The Introduction is included in chapter 1. Chapter 2 comprises the Literature Review, where all the concepts pertaining to this research are explained. In chapter 3, the various factors responsible for attracting on-line traffic are explained, and the relevant hypotheses are developed. Chapter 4 describes the research design employed in the thesis. This chapter includes the sample selected, the method of data collection, the measures of the hypotheses developed, and the data analysis. Chapter 5 explains the results obtained from the analysis performed. Chapter 6 discusses the results obtained from the research, and the limitations of the research.

CHAPTER 2

LITERATURE REVIEW

This chapter comprises :

Section 2.1 reviews types of products sold on the Internet. Section 2.2 describes the benefits of on-line stores. Section 2.3 introduces a business model for on-line stores developed by Dutta et al., and evaluates the application of the model with this research.

2.1 Types of products sold on the Internet

As more consumers go on-line, growth will be explosive for many product areas and companies. In general, the more difficult and time-consuming a purchase category is, the more likely consumers will prefer to use the Internet versus standard physical means. The most popular selling categories according to e-marketer (http://www.emarketer.com/estats/ec_sell_3.html) are given in the following table :

Table 1 - Projected On-line Shopping Revenue (In Million Dollars) by Category, 1996-2000

Category	1996	1997	1998	1999	2000
Computer Products	140	323	701	1,228	2,105
Travel	126	276	572	961	1,579
Entertainment	85	194	420	733	1,250
Apparel	46	89	163	234	322
Gifts and Flowers	45	103	222	386	658
Food and Drink	39	78	149	227	336
Other	37	75	144	221	329
TOTAL	518	1,138	2,371	3,990	6,579

Source : Forrester Research

- a. **Computer Products** - Computer products include hardware and software. Some on-line stores like Dell offer computer products where the configuration is entirely left to the customer to choose. The customer can choose the memory, speed etc. Software is offered to customers by regular mail and electronically. When delivered electronically, customers can download the software soon after payment. Delivery of such products is instantaneous. Lately, customers can also rent software, where they use the software for the job required, and return the software with a particular fee.
- b. **Travel** - More than in any other area of electronic commerce, consumers and business travelers feel totally comfortable placing orders on-line to purchase airline tickets, hotel reservations, and other travel-related services. According to surveys conducted by Forrester Research, travel services are among the most popular activities on the Internet. Travel services have always been popular on the commercial on-line services. Many travel agencies offer free information and pictures of exotic destinations. Hotel chains, too, have gone on-line to post information and pictures about their rooms and rates.
- c. **Entertainment** - Entertainment, which includes music, and activities such as adult entertainment, on-line games, on-line gambling, and video is the largest on-line business. Many areas of the music world are gaining or serving clients on-line. Sellers of CDs, records, tapes and musical equipment, and publishers of musical magazines are on-line.

- d. **Apparel** - This is a popular product sold on-line. On-line apparel stores offer clothing for any age group, and present the colors and sizes available. On-line stores like Lands' end also offer measuring instructions to assist their customers chose the right size.
- e. **Gifts and Flowers** - Gifts and flowers sold on-line are probably the most useful when customer wish to send gifts or flowers to someone living in another city. Customers can chose from a variety of gifts, and the same is delivered to the person receiving the gift. Flowers can be sent in a similar fashion. These days, people can even send electronic flowers like an electronic greeting card.
- f. **Food and Dining** - on-line food vendors sell almost any kind of food. Caterers, consultants, cooking schools, and cookbooks are racking up sales on-line. Restaurants are a natural business for the Internet. They market on the Web because travelers and vacationers always ask for recommendations, while making travel plans.
- g. **Other** - The other categories include :
 - **Books** - On-line bookstores do not necessarily have a physical bookstore. They can function as a front end for a drop-shipping business. In other words, they place information on-line about the book, such as title, topic, overview, and price, and then wait for the orders. When a customer is interested, they process the order information and then call their supplier, who ships the book(s) directly to the customer. In either case, an on-line bookstore can offer collections of books that appeal to specialized audiences, such as business books, comic books, romance novels, art books, or any form of literature.
 - **Housing and Real Estate** - Realtors can show property without leaving the office by listing properties on Web sites. Customers can select properties by location, price

and amenities. Consumers can see traditional house pictures; new software programs allow views from specific locations, such as the view of the master bedroom from the hallway. Mortgage brokers are available on-line as well. Customers are given the option of analyzing the competitive bids from different lending sources.

- Job Seeking On-line - The Internet is becoming a resource center for employers seeking new workers and employees seeking jobs. Businesses that match the employers and employees are successful. The various services provided are career counseling, job banks, newsletters, newspapers, and resume services.

2.2 Benefits of on-line stores

The following are some of the main reasons for businesses to conduct transactions on-line:

- a. Communication - On-line communications offer merchants benefits of interacting with consumers that cannot exist in one-way print or television communications. Using e-mail, infobots (automated e-mail, similar to fax-back system), and other on-line tools, merchants can create a dialog with consumers that leads to long-term relationships and sales (Ellsworth, J & M : 1996; Janal : 1997).
- b. Reach a Worldwide Audience in an " *any time, any place, no matter economy*" - People in virtually every country have access to the Internet and can place orders for products across the globe. *Reach*, as defined by Evans and Wurster (1997), is one of the dimensions of navigation used by on-line stores to offer products and compete with one another. It means the number of customers a business can access or how

many products it can offer. On-line stores can access millions of people, unconstrained by physical limitations.

In 1987, Davis introduced the concept of "*any time, any place, no matter economy*". With respect to *any time*, he said that, consumers can order products and services at any time. They are not restricted by store hours. The concept of real time was also brought out. Producers deliver their products and services in *real time*, which means no lag-time between identification and fulfillment of the need. Banking services, for example, can be utilized by customers any time, and in real time. With respect to *any place*, according to Davis, making products and services less fixed in space increases their competitive edge. This means that products and services can be accessed from any place.

With respect to *no matter*, Davis emphasized the importance of 'intangibles' in the economy. Money, for example, is a medium of exchange, that is changing its tangible paper form into an intangible form, as in electronic funds transfer and Smart Cards. For traditional retailers, the industry is based on physical aspects like location, buildings, physical logistics involving warehouses and trucks. Such assets become largely redundant in the electronic world. Intangibles like knowledge capture, information management and brand equities become new core competencies and drivers of value (de Kare-Silver, 1999).

- c. **Cost Containment** - Many businesses are using the Internet to contain telephone and mailing costs. With first-class letters costing \$0.45 each, a mailing of 1,000 pieces to customers would cost \$450 for postage alone, whereas the same information sent by e-mail would cost \$2 to \$3 and the messages would arrive in seconds as opposed to

days or weeks. Overnight mail (which typically costs \$8 to \$12 for each delivery) cannot compete with e-mail for speed or cost (Ellsworth, J & M : 1996; Janal : 1997).

- d. Reduce or eliminate inventory, warehouse, and money costs - Internet-based businesses can rely on drop-shipping their products to meet their customers' orders. They don't have to stock large supplies or products in expensive warehouses. Instead, they can offer the product for sale in their on-line catalog and order the products from their suppliers only when they receive payment from their on-line customers. Because the product is not bought until required, the on-line merchant doesn't have to tie up money in goods or pay interest on that money. Instead, the money earned can generate interest or be invested on other profitable ventures (Ellsworth, J & M : 1996; Janal : 1997).
- e. Information Retrieval and Utilization - The key aspect of the Internet is information. Businesses can offer information (like a newsletter, report, or on-line research) about their products. According to Evans and Wurster (1997), *richness*, is another dimension of navigation, and it is defined by three aspects of information itself. The first is *bandwidth*, or the amount of information that can be moved from sender to receiver in a given time. The second aspect is the degree to which the information can be *customized*. For example, an advertisement on television is far less customized than a personal sales pitch. The third aspect is *interactivity*. Richness holds enormous potential for building close relationships with customers in a future dominated by e-commerce. Traditional businesses have always had to make a trade-off between richness and reach. Getting highly detailed, customized information to and from a large number of consumers is extremely expensive. On-line stores can exploit the

displacement of the trade-off permitted by electronic connectivity and information standards.

- f. **Affiliation** - According to Evans and Wurster (1997), *affiliation*, which is the third dimension of navigation, is directed towards the customer. Affiliation is about whose interest the business represents. Customers become 'prosumers' according to Alvin Toffler (1990). The *Prosumer*, has been defined to describe the breakdown of the distinction between producer and consumer. According to Toffler, the consumer not only buys the product or service, but also participates in its production and delivery. By allowing customers to take part in the transaction process, affiliation is directed to the customer and on-line stores are able to enhance customer relationships.

2.3 The Business Model for On-line Stores

A business model, known as the Marketplace model, has been developed by Dutta et al.(1997) for on-line stores, and is referred to as the *Theory of Cyber Transformation*.

Figure 1 The Marketplace Model

The Marketplace model is built on two dimensions, namely, a technological capability dimension, and, a strategic business dimension. The **technological capability** dimension comprises of the following :

- a. *Interactivity* : due to the real-time, on-line nature of the Internet, relationships between organizations and customers are becoming more interactive in the Marketplace. This is enhancing the richness of customer relationships and creating new paradigms of product design and customer service.

- b. **Connectivity** : the open and global nature of the Internet is fostering the creation of a shared global Marketplace. The radical increase in connectivity enabled by the Internet is giving rise to new communication and co-ordination mechanisms both across organizations and customers, and also within groups of customers themselves.

The **strategic business** dimension comprises of the classical strategic marketing model of 4Ps - Product (refers to tangible and intangible products and services), Price, Promotion and Placement (or Distribution). This model has the dual advantages of simplicity and time-tested acceptance. The authors have augmented the 4Ps with one C - the additional dimension of Customer relationships, as this aspect is not captured adequately by the 4Ps.

The Marketplace model was used to design a questionnaire that probed into the following question : "to what degree are the '4Ps+C' getting transformed due to the real time interactivity and global connectivity of the Internet ?" The overall evaluation for each dimension was obtained by aggregating a number of items related to the degree and extent to which specific features/aspects have been transformed/achieved. The transformations of the "4Ps+C" are as follows :

Technological Sophistication

- The ease of navigation of the site;
- The degree of customization possible of the web interface;
- Speed and ease of access to site features; and
- Advanced capabilities (such as video)

Transformation of Products

- The availability of product related information on-line;
- The customization of products for individual or groups of customers; and

- The participation of customers in the specification and design of products.

Transformation of Promotion

- The use of on-line advertising;
- The use of on-line promotions such as sales and discounts;
- The customization of on-line promotions;
- The participation of customers in on-line promotions; and
- Links with other organizations in organizing on-line promotions.

Transformation of Pricing

- The availability of pricing information on-line;
- The dynamic customization of prices;
- The availability of on-line price negotiation; and
- The possibility to charge customers for only proportions of products consumed.

Transformation of Place

- The availability of on-line ordering;
- The availability of secured on-line payment;
- Distribution of products on-line; and
- The involvement of partner organizations in on-line distribution.

Transformation of Customer Relationships

- The on-line identification and tracking of customers to provide customized services;
- The provision of on-line communications to customers;
- The creation of on-line communities for customers; and
- The solicitation of on-line feedback from customers.

2.3.1 The variables derived from the Marketspace Model

Given that on-line stores are a recent method of doing business in the market, there is no specific model developed to attract or increase traffic to these on-line stores. The field of electronic commerce is relatively new, and as such little statistical data or empirical research is available. Therefore, we formulate the framework presented in

chapter 3, as a set of propositions, which are based on examples from pioneers in the field and our intuition. The Marketspace model explained above has been analyzed, and recognized as the closest fit to the current research.

The Marketspace Model indicates clearly, the features of on-line stores, and the functions that can be performed with the help of on-line stores, and this research attempts to identify the important functions and features of on-line stores in order to distinguish the high traffic from low traffic on-line stores. It is however, in the capacity of this research to choose only those features and activities that are available on the website of the on-line store and those that can be measurable.

The features (variables) derived from the Marketspace Model are given below, and the hypotheses developed with the respective rationale are explained in chapter 3.

Technological Sophistication

- The ease of navigation of the site
- The degree of customization possible of the web interface
- Speed and ease of access to site features
- Advanced capabilities (such as video)

The aspect of technological sophistication has not been taken into consideration because it is not explicitly stated in the marketspace model. Also, most of the dimensions of technological sophistication depend on the hardware and software used by the customer. Since the focus of this research is from the store point of view, these dimensions are not being measured.

Transformation of Products

- The availability of product related information on-line : This variable has not been

taken due to non-measurability. It is not measurable, because there are various levels of product related information, and these are not clearly defined. In other words, what is adequate information for one on-line store might not be adequate for another on-line store.

- The participation of customers in the specification and design of products : Customer participation (Appendix A).
- The customization of products for individual or groups of customers : Customer participation. This dimension is included in the same variable (customer participation), because customization can take place only if the customers participate in the specification and design of products.

Transformation of Promotion

- The use of on-line advertising : Banner advertising (Appendix B).
- The use of on-line promotions such as sales and discounts : This dimension is not being measured because sales and discounts are not consistently present in any on-line store.
- The customization of on-line promotions : This dimension is not being measured because sales and discounts are not consistent in any on-line store, and hence even the customization might not be consistent.
- The participation of customers in on-line promotions : If customization might not be consistent, participation will not be possible.
- Links with other organizations in organizing on-line promotions : Reciprocal Links (Appendices C and D).

Transformation of Pricing

- The availability of pricing information on-line : This dimension is not being considered as a distinguishing factor. Price availability is necessary for any store, and is a common factor for all on-line stores.
- The dynamic customization of prices : It has been found from the data, that this dimension and the following two dimensions of the pricing aspect are not available in the on-line stores analyzed, and hence are considered redundant for this research.

- The availability of on-line price negotiation; and
- The possibility to charge customers for only proportions of products consumed.

Transformation of Place

- The availability of on-line ordering : This dimension is not being considered as a distinguishing factor. On-line ordering is necessary for any store, and is a common factor for all on-line stores.
- The availability of secured on-line payment : Security (Appendix E).
- Distribution of products on-line : On-line distribution of products (Appendix F).
- The involvement of partner organizations in on-line distribution : Affiliate Networks (Appendix G).

Transformation of Customer Relationships

- The on-line identification and tracking of customers to provide customized services : Privacy (Appendix H);
- The solicitation of on-line feedback from customers : Privacy (Appendix H).
- The provision of on-line communications to customers : E-mail marketing, Newsletter (Appendices I and J).
- The creation of on-line communities for customers : Chat (Appendix K).

Two factors (variables) that have been hypothesized in this research, but not present in the Marketspace Model are *breadth of products*, and *order tracking*. These features are based on examples from pioneers in the field of electronic commerce, and intuition.

Breadth of products (Appendix L) - When an on-line store offers products or services related to their core offering, process integration is said to take place. This typically answers the question : "What other things do customers need or do when they buy from us (E-Commerce Guide : <http://www.quidnunc.com/banner/ecommerce.asp>) ?" Customers can shop conveniently at one stop, rather than spend more time and visit other websites.

Order Tracking (Appendix M) - On-line stores also allow customers to keep track of their products while in transit, and when an item is being transferred from one place to another, customers can make sure that the item has reached its destination.

CHAPTER 3

TESTABLE HYPOTHESES

3.1 Security

A robust security scheme is an absolute requirement and the leading barrier to widespread commerce on the Internet (C.Agres et al., 1998). A security threat is defined as " a circumstance, condition, or event with the potential to cause economic hardship to data or network resources in the form of destruction, disclosure, modification of data, denial of service, and/or fraud, waste and abuse" (R.Nath et al.,1998).

Secure Socket Layer, or SSL, is an Internet standard developed to ensure private and authenticated communication by encrypting all data between two parties (customer and Web site). SSL also provides the added benefit for customers on the Internet to be assured by a Third Party (The Certificate Issuing Authority) that the website they are purchasing from is indeed a real company (<http://www.infodial.net/features/secureserver/index.htm>).

Encryption is the process of transforming information so it can't be decrypted or read by anyone except the intended recipient. This encrypted information is called ciphertext. It is the ciphertext that is sent across the network. For example, if a financial report is stored at a particular web site and SSL is enabled on that server, the server encrypts the report and sends the ciphertext to a client, who then decrypts the ciphertext back into the financial report. Decryption reverses the process, turning the ciphertext back into the original message. The recipient is the only one who can do this because only the recipient has a key to "unlock" a message.

SSL provides:

- server authentication, which allows any SSL-compatible client to verify the identity of the server using a certificate and a digital signature;
- data encryption, which ensures the privacy of client-server communications by encrypting the data stream between the two entities; and
- data integrity, which verifies that the contents of a message arrive at their destination in the same form as they were sent.

H1 *SSL encryption is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

3.2 Privacy

Information privacy refers to the claims of individuals that data about themselves should generally not be available to other individuals and organizations, and that, where data is possessed by another party, the individual must be able to exercise a substantial degree of control over that data and its use (www.anu.edu.au/people/Roger.Clarke/DV/Intro.html)

Internet users are concerned about the privacy of information they supply to websites, not only in terms of personal data, but information that websites may derive by tracking their on-line activities (Wang et al., 1998). Information privacy is regulated by agencies such as the Federal Trade Commission (FTC) of the United States that proposed a legislative model, which is built around *four* basic fair information practices: Give consumers notice of what information is collected and how it is used; let consumers choose whether to allow secondary uses of information (for example, to decide whether their name can be used for follow-up marketing from the company or be sold to a third party); give

consumers "reasonable access" to their information and let them correct any errors; and ensure the information's security (Source : October 1, 1998 CIO Web Business Magazine titled " Saving Private Data" by Sari Kalin).

H2 *The privacy of customers is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

3.3 Affiliate Networks

Affiliate programs (also known as affiliate networks) are emerging as a major force in Internet retail economics, with most major Internet stores offering them and participants numbering in the tens of thousands ("Partners in Affiliate Marketing Struggle With Branding Issues" by Whit Andrews April 13, 1998; Internet World). Using an Affiliate Network is a practice that combines the principal of direct marketing and franchising with the Internet technologies. The resulting business model has been drawing significant attention among large and small Internet commerce entities (CanadaOne Technologies, by Jeff Molander at www.canadaone.com/technology/estrat070198.html).

Affiliate networks allow commerce sites to embed their product offerings into other Websites on the Internet that have specific content related to the products. From a pre-existing on-line business or any set of products or services that have a price, description, and a picture, an affiliate program is created. Affiliate programs usually allow website owners to integrate a product or link with other websites to drive traffic back through their store generating sales and earning the affiliate site a commission based upon a percentage of the sale. For example, www.art.com possesses affiliate programs on the Internet at art.com&trade. Some of the linking options offered to other on-line retailers

are: Linking to their home page or specific galleries, utilizing their banners which will automatically update the affiliate's website.

H3 *Affiliate Networks are more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

3.4 Reciprocal Links

A reciprocal link means that an on-line store agrees to list another site, and gets listed in the other site in return. These simple links can lead to new customers. Links with related sites are likely to attract more customers than links with non-related sites. Related links reflect the free and open nature of the Internet. They are a goodwill gesture, a user-oriented public service ("Why Having a Large Set of Related Links Makes Sense" by Andrew Marlatt, Internet World, August 18, 1997 at <http://www.internetworld.com/print/1997/08/18/undercon/19970818-links.html>). The more link exchanges an on-line business acquires, the better are the chances to win more customers ("Creating Stores on the Web" by Sawyer et al., 1998).

H4 *Reciprocal links are more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

3.5 Banner Advertising

Banner ads are the most popular form of advertising on the Internet ("Creating Stores on the Web" by Sawyer et al., 1998). A banner ad can basically be described as a piece of visual communication (either animated or still image, with no "set" size standards) that is placed within a web site. Its goal is to attract the netizen (citizen on the Net) long enough to compel a "click-through." The term click-through comes from the

act of clicking on a link, thereby taking the user "through" to another location (in the case of banner ads, to the advertiser's site). Banner advertising serves two major purposes:

- Promoting a positive brand image, reinforced through repetition.
- Compelling users to click in order to take them away to the sponsor's site.

(Banner Secrets: How to Run a Successful Campaign by Raymond Pirouz in <http://www.searchz.com/clickz/011398.shtml>)

H5 *Banner advertising is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

3.6 Customer Participation

In order to give customers the feeling of power and convenience, on-line stores are allowing them to participate in the specification and design of products. Products are designed according to the customers' demands. For example, Dell Computers configures computers according to the customers' preferences, which include some specifications like memory and speed of a computer required. Other examples include customized PC banking, and customized travel bookings where customers can book the required flight, rent a car, and make a reservation for accommodation for the travel period. Although this might seem like an impersonal way to do business, a growing number of companies are coming to realize that self-service provides for the highest level of customer comfort ("Webonomics: Nine Essential Principles for Growing Your Business on The World Wide Web" by Schwartz, Evan I; 1997).

H6 *Customer participation is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

3.7 Chat

Chat has long been a popular recreational activity on the Internet. Chat is considered a valuable communication and collaboration tool. Two areas where chat can be particularly useful are customer service and group communication (internet.com). Chat is a text-based, real-time conversation between two or more people typing into a window on computer screens. Other people can see what is being typed, and responses can be seen instantly. While real-time chat on the web is estimated to generate between 30% and 70% of total revenue for commercial on-line services, the category is just starting to take off. By the year 2000, chat is expected to generate about 7.9 billion hours of on-line use, leading to \$1 billion in advertising revenues, according to Montgomery Securities (http://www.emarketer.com/estats/ec_hot_10.html , March 1999).

H7 Chat is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.

3.8 E-mail Marketing

On-line retailers are increasingly using e-mail to build customer relationships (More sites use E-mail for marketing" by Roberta Fusaro, Computer World, 1998). Stamford, Conn.-based Meta Group Inc. predicts that in the next two years, e-mail list management will become more sophisticated and a core part of sales and marketing campaigns for companies that sell over the Internet. That's because direct e-mail based on Hypertext Markup Language (HTML), the Web programming language, provides a more dynamic way to present marketing information, is infinitely cheaper than printing and delivering marketing materials and is easier to mine for customer data and response rates, according to the research firm. "Instead of spending \$3 to \$4 per call by a tele-marketer, companies

are realizing they can send e-mail messages at a penny a piece and eliminate the likelihood of a hang-up," said Forrester analyst David Cooperstein. And marketers are waking up to the value of having one-on-one, continuous relations with customers via personalized e-mail, a user said ("E-mail marketing goes mainstream Expected to be \$1B business in 2002" by Roberta Fusaro, ComputerWorld, 1999).

H8 *E-mail marketing is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

3.9 Newsletter

On-line newsletters allow marketers to "push" information to prospects and customers who want to receive it. By establishing a periodic electronic newsletter and distributing it to an "approved e-mail list" (individuals who ask for it), a real need can be fulfilled —especially if the newsletter contains helpful, objective information. E-mail newsletters and "e-zines" are also ideal for keeping in periodic touch with customers, partners and others who are important. They can build loyalty and promote products and services on an on-going basis (<http://www.emergemarketing.com/newslet.htm>). Businesses are finding that increase in on-line traffic is from on-line newsletters. Many newsletters include briefs on the latest news in the field. 'How-to' articles are also popular. As the newsletter is published regularly, stronger ties can be established with customers, which will in turn build the on-line business substantially over a period of time (<http://www.webmarketingtoday.com/articles/newsletter.htm>).

H9 *Newsletters are more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

3.10 On-line Distribution of Products

In the case of "soft" products, the electronic commerce medium actually becomes the delivery medium. In some cases (for instance, ZDNet at www.zdnet.com, a service reporting on the computer industry), there is actually no paper version of the service. By sharing a digital infrastructure such as the Internet compared to owning a physical one, marketing, distribution and customer service costs can be drastically reduced. This is especially important in service industries, where the cost of customer service usually exceeds the product costs (e.g. for banks, credit card or telecommunications companies). In some markets or for some products, the ability to distribute or receive a product as soon as it's been created is of primary importance. This is obviously the case of information distribution. A company such as Newspage (<http://www.newspage.com/>), for instance, distributes information on hundreds of topics using electronic mail or the Web, to make sure it reaches its targets as soon as it is available.

Electronic commerce has also had a profound impact on the traditional retail securities brokerage industry as the rapid growth of the Internet has taken personal investing to the next level via on-line broker dealers. Investors can use the vast amount of information available on-line to make investment decisions and actually enter into transactions without traditional broker assistance. The increase of on-line trading is phenomenal as evidenced by 27% of all individual investor trades being completed on-line during 1998, indicating a 65% increase over the previous year. Another staggering number is the 250,000 trades that occur each day through on-line trading. This growth is expected to continue as can be seen by the number of on-line accounts estimated to be over 10 million in 1999. Electronic commerce has acted as a catalyst to expedite the

efficiency of this process and has become a serious threat to the traditional and discount brokerage firms, as the consumer now possesses greater power (<http://www2.cob.ohio-state.edu/~mimnaugh/838.html>). Increasingly, software buyers also are turning to the Internet as the most efficient way to evaluate and purchase software products. According to IDC (International Data Corporation), estimated worldwide revenue from Electronic Software Distribution (ESD), defined as software that is both purchased and transmitted on-line, will reach \$5.9 billion by 2001 (<http://www.comtexnews.com/siia2/indnews.htm>).

H10 *On-line distribution of products and services is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

3.11 Breadth of products

Selling similar products is referred to as bundling : a combination of products that are needed for a common task or related in the way we consume. These products may be vertically related. Products combined in this manner are often personalized and constitute a distinct product or service that takes on an enhanced value from the sum of its components. A combination may be a collection of goods and services. For example, airline tickets, hotel rooms, a rental car, meals, and amusement park admission tickets can be bundled as a packaged leisure product. In physical markets, finding, assembling, and personalizing various products for an individual customer would be extremely costly and pose an enormous challenge in pricing and management. On the other hand, computing and networking technologies make bundling and integrating different products and services much easier (Choi and Whinston, 1999).

H11 *A larger variety of products is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

3.12 Order Tracking

One of the most popular strategies with customers, is outsourcing to them. WISMO or 'Where Is My Order?' is considered one of the best features offered by an on-line store or service. At any point in time, customers can find out where their order is (E-Commerce Guide : <http://www.guidnunc.com/banner/ecommerce.asp>). Customers are comfortable doing things themselves because it provides them with control and convenience. They don't have to rely on someone else to enter and read the correct information. The first company to offer this service, FedEx, claims to save millions of dollars by allowing customers to find out information by themselves. Surveys have shown that it actually enhances customer satisfaction.

H12 *Order tracking is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

3.13 Summary of Hypotheses

The following hypotheses have been examined to distinguish between high traffic and low traffic on-line stores :

1. SSL encryption is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.
2. The privacy of customers is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.
3. Affiliate Networks are more likely to be associated with high traffic on-line stores than with low traffic on-line stores.
4. Reciprocal links are more likely to be associated with high traffic on-line stores than with low traffic on-line stores.
5. Banner advertising is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.
6. Customer participation is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.
7. Chat is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.
8. E-mail marketing is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.
9. Newsletters are more likely to be associated with high traffic on-line stores than with low traffic on-line stores.
10. On-line distribution of products and services is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.

- 11. A larger variety of products is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.**
- 12. Order tracking is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.**
- 13. All the twelve factors mentioned above, namely, security, privacy, affiliate networks, reciprocal links, banners, customer participation, chat, e-mail marketing, newsletter, on-line distribution of products, breadth of products and order tracking are more likely to be associated with high traffic on-line stores than with low traffic on-line stores.**

CHAPTER 4

RESEARCH DESIGN

4.1 Unit of Analysis

The unit of analysis is the on-line store.

4.2 Sample

The sample comprises of two groups: 100 on-line stores ranked in the 'shop' category of the website 100hot.com and 100 on-line stores present in the website shopguide.com.

4.3 On-line Store Selection

Two types of on-line stores were selected. High traffic on-line stores and low traffic on-line stores. High traffic on-line stores are those that are ranked in the website 100hot.com. The website 100hot.com is a directory that ranks websites objectively by web traffic, providing consumers with a listing of the top websites in a variety of categories. The high traffic on-line stores were selected directly from the website 100hot.com. Low traffic on-line stores are those that are not listed in the website 100hot.com and were selected from the website shopguide.com. Shopguide.com is a directory that lists, but not ranks on-line stores. The low traffic on-line stores were selected by matching the types of products sold in 100hot.com. For example, if a book store was present in 100hot.com, a book store was chosen from shopguide.com. Among these stores selected, random sampling was implemented to choose the stores for the research.

4.4 Time of Data Collection

Data was collected between July - October 1999.

4.5 Research Sources

The research for this study utilized the following sources :

- a. The website of each on-line business selected for the sample - All the features will be tested according to the hypotheses mentioned in Chapter 3, and the measures mentioned in sub section 4.6 of this chapter.
- b. A review of the existing literature, e-magazines and on-line resources like Internet.com's E-Commerce Guide at <http://e-comm.internet.com/>

4.6 Measures

The data was collected with the help of the following measures (Appendix N) :

4.6.1 Security

An on-line store is considered to have adequate security measures only if it uses SSL encryption. The security measures implemented by the on-line stores are mentioned in their websites. A score of 1 is given to indicate the usage of SSL and a score of 0 is given to indicate the absence of SSL.

4.6.2 Privacy

The model proposed by the FTC comprises of four measures¹. If any one of the measures are complied with, a score of 1 is given. If any two of the measures are complied with, a score of 2 is given. Similarly, if any three conditions are complied with, a score of 3 is given. If all four measures are complied with, a score of 4 is given. If none of the measures are complied with, a score of 0 is given.

4.6.3 Affiliate Networks

This will be measured by giving a score of 1 if the on-line store is connected to an affiliate network, and a score of 0 is given if the on-line store is not connected to an affiliate network. If on-line stores are connected to affiliate networks, they mention the same in their websites.

4.6.4 Reciprocal Links

This will be measured by counting the number of other websites the current website is linked to, and vice-versa. The links in the website of each on-line store are analyzed and if they take the user to another on-line store, and the second on-line store has a similar link to the current on-line store, a reciprocal link exists.

¹ The FTC measures are : (a) Give consumers notice of what information is collected and how it is used; (b) let consumers choose whether to allow secondary uses of information (for example, to decide whether their name can be used for follow-up marketing from the company or be sold to a third party); (c) give consumers "reasonable access" to their information and let them correct any errors; and (d) ensure the information's security.

4.6.5 Banner Advertising

This will be measured by counting the number of banners in the home page of the website of the on-line store.

4.6.6 Customer Participation

On-line stores inform customers that they can participate in the specification and design of products and services in their websites. Any form of customer participation in the transaction is given a score of 1, and the absence of any form of participation is given a score of 0.

4.6.7 Chat

A score of 1 is given if the facility of chat is available in the on-line store, and a score of 0 is given if it is not available. The availability of chat is mentioned in the websites of the on-line stores.

4.6.8 E-mail Marketing

If the on-line store performs e-mail marketing, a score of 1 is given. If the on-line store does not perform e-mail marketing, a score of 0 is given. When on-line stores ask for the customer's e-mail address and offer to send customers information on products, special offers etc., this is considered as e-mail marketing.

4.6.9 Newsletter

If a newsletter is provided, a score of 1 is given, and if the same is not offered, a score of 0 is given. On-line stores mention the offer of a newsletter in their websites.

4.6.10 On-line Distribution of products

If any product or service offered by the on-line store can be delivered electronically, a score of 1 will be given. If the product or service cannot be delivered electronically, a score of 0 will be given. When on-line stores offer products or services electronically, they inform the customer of the same. For example, when software can be transmitted electronically, on-line stores mention "downloadable".

4.6.11 Breadth of products

This will be measured by counting the categories of products offered by the on-line store. The categories were counted as per those classified by Yahoo. Yahoo is ranked #1 search engine by 100hot.com.

4.6.12 Order Tracking

If on-line stores allows customers to track the purchased goods or services, a score of 1 is given. If the same is not offered, a score of 0 is given. When on-line stores allow their customers to track their products, the same is mentioned in their websites.

4.7 Data Analysis

Statistical Technique : Multiple Logistic Regression

Method : Stepwise Logistic Regression

Model : $E(Y) = \frac{1}{1 + \exp[- (\beta_0 + \beta_1 X_1 + + \beta_{12} X_{12})]}$

The above model describes the relationship of several predictor variables X_1 , $X_1, \dots, X_{12}$ to a dichotomous dependent variable Y , where Y is typically coded as 1 or 0 for its two possible categories.

In the above model :

$E(Y)$ - is the expected value of Y , which is analogous to the probability that $Y = 1$.

X_j - represents the independent variables, where X is the independent variable, and j is the variable number. The independent variables are : Security (X_1), Privacy (X_2), Affiliate Networks (X_3), Reciprocal Links (X_4), Breadth of products (X_5), Banner advertising (X_6), E-mail marketing (X_7), Newsletter (X_8), Chat (X_9), Customer Participation (X_{10}), Tracking (X_{11}), On-line distribution of products (X_{12}).

β_0 - is the constant term

β_1 to β_{12} - are the regression coefficients associated with $X_1, \dots, X_{12}$

CHAPTER 5

RESULTS

Section 5.1 provides the breakdown of the data collected. Section 5.2 describes the procedure followed in order to choose the best model, and also explains how well the model represents the data. Section 5.3 explains the Research model with the coefficients and the respective hypotheses. Section 5.4 explains the variables not in the model.

5.1 Data Collected

The data was collected directly from each of the 200 on-line stores. 100 on-line stores (Appendix O) were analyzed from the website 100hot.com. These represent the high traffic on-line stores. The other sample of 100 on-line stores (Appendix P) was analyzed from the website shopguide.com. These represent the low traffic on-line stores. Each on-line store was visited by the researcher, and the proposed distinguishing factors (security, privacy, affiliate networks, reciprocal links, banner advertising, breadth of products, chat, e-mail marketing, newsletter, on-line distribution of products and order tracking) were examined in each on-line store. After a thorough examination, the factors were measured according to the procedures mentioned in section 4.6.

Since the data was collected by the researcher, a third party was requested to verify the data. 25% of the sample (i.e. 200 on-line stores), or 50 on-line stores were verified, and the verification results are indicated in Appendix Q.

5.1.1 Frequency Table

Table 2(a) - Frequency Table for binary data

VARIABLE	HIGH TRAFFIC			LOW TRAFFIC		
	1	0	Total	1	0	Total
Security	82	17	99	42	55	97
Affiliate Networks	61	38	99	29	68	97
Customer Participation	78	21	99	16	81	97
Chat	40	59	99	7	90	97
E-mail marketing	83	16	99	44	53	97
Newsletter	52	47	99	21	76	97
Order Tracking	73	26	99	20	77	97
On-line Distribution	50	49	99	13	84	97

In the frequency table above :

1 - indicates the presence of the respective variable in the on-line store.

0 - indicates the absence of the respective variable in the on-line store.

Total - indicates the number of valid cases in each group.

The above frequency table comprises of only those variables that have a binary measure.

It can be seen that for all the variables, high traffic on-line stores have a greater frequency than the low traffic on-line stores.

Table 2(b) - Frequency Table for continuous data

VARIABLE	HIGH TRAFFIC - AVERAGE	LOW TRAFFIC - AVERAGE
Privacy	3.3333	1.1340
Reciprocal Links	1.1313	0.0909
Breadth of Products	5.1111	2.8041
Banner Advertising	18.8081	10.8557

The above frequency table comprises of those variables that are measured by counting. It can be seen that for all the variables, high traffic on-line stores have a greater average

than low traffic on-line stores. For a more detailed description of the frequencies, please refer to Appendix R.

5.2 Model Fit

Selecting predictor variables - In logistic regression, as in other multivariate statistical techniques, it would be necessary to identify those independent variables that are good predictors of the dependent variable. There are six methods of model selection : Forward Conditional, Forward LR (likelihood ratio), Forward Wald, Backward LR, Backward Wald, and Backward conditional.

All the six methods of model selection were implemented, and the model with the Forward conditional method was chosen. Also, it was found that the other methods of model selection provided results that were not very different from those provided by the Forward conditional method. The model fit was determined by the Hosmer and Lemeshow Goodness-of-fit test, the classification table and the significance (p value) of the variables in the model.

Table 3 - Hosmer and Lemeshow Goodness-of-Fit Test

Group	GROUP = 0.00		GROUP = 1.00		Total
	Observed	Expected	Observed	Expected	
1.	23.000	22.955	.000	.045	23.000
2.	21.000	20.690	.000	.310	21.000
3.	20.000	20.739	2.000	1.261	22.000
4.	17.000	16.302	3.000	3.698	20.000
5.	11.000	11.694	9.000	8.306	20.000
6.	3.000	3.427	17.000	16.573	20.000
7.	2.000	.764	12.000	13.236	14.000
8.	.000	.362	19.000	18.638	19.000
9.	.000	.062	20.000	19.938	20.000
10.	.000	.005	17.000	16.995	17.000

The Hosmer and Lemeshow goodness-of-fit index is useful for assessing overall model fit. This test utilizes a grouping strategy based on the percentiles of the estimated probabilities. The methods of Hosmer and Lemeshow (1980, 1982), according to Ryan (1997) , specify that 10 groups (g) be used to indicate the probabilities. A comparison of the observed and expected frequencies in each of the cells in the above table shows that the model fits the data well.

Table 3 contd.

	Chi-Square	df	Significance
Goodness-of-fit test	3.6981	8	.8833

The Hosmer and Lemeshow Goodness-of-fit statistic C, is obtained by calculating the Pearson chi-square statistic from the table of observed and estimated expected frequencies. As can be seen, the significance level of the goodness-of-fit statistic is quite high, thus indicating that the model fits the data well.

Classification Table for GROUP

		Predicted			Percent Correct
		.00	1.00		
		0	1	1	
Observed	.00	0	90	7	92.78%
	1.00	1	13	86	86.87%
		Overall			89.80%

The classification table indicates that 90 low traffic on-line stores have been correctly predicted by the model as low traffic on-line stores. Similarly, 86 high traffic on-line stores have been correctly predicted by the model as high traffic on-line stores. A total of 20 on-line stores have been misclassified. Overall, 89.90% of the 196 on-line stores have been correctly classified.

5.3 Research Model

5.3.1 Variables in the Equation

Table 4(a) - Variables in the Equation

Variable	B	S.E.	Wald	df	Sig	R
SECURITY	2.0583	.6864	8.9917	1	.0027	.1604
PRIVACY	.9082	.2041	19.8051	1	.0000	.2560
RECLNK	1.0898	.5171	4.4408	1	.0351	.0948
CUSTPN	2.4925	.6018	17.1527	1	.0000	.2362
CHAT	2.4113	.8778	7.5453	1	.0060	.1429
TRACK	1.8972	.5779	10.7772	1	.0010	.1797
CONSTANT	-6.2380	1.0161	37.6863	1	.0000	--

Sig p < 0.05

Table 4(a) shown above comprises of those variables that have been selected with the Forward conditional method of model selection. For each variable in the equation: coefficient (B), standard error of B, Wald statistic, the significance of the Wald statistic (Sig) and the value of *R* are given. The significance of the Wald statistic indicates that all the variables are significant at the significance value of $p < 0.05$. The *R* statistic is used to look at the partial correlation between the dependent variable and each of the independent variables. A positive value indicates that as the variable increases in value, so does the likelihood of the event occurring.

The probability of being high traffic is calculated as follows :

$$\frac{\hat{p}_{\text{new}}}{\hat{p}_{\text{old}}} : \text{The relative change in pold that is caused by a one unit increase in the variable under study.}$$

$\hat{p}_{\text{new}}$: the new probability, given a one unit increase in the variable under study.

$\hat{p}_{\text{old}}$: the original probability.

$$\frac{\hat{p}_{\text{new}}}{\hat{p}_{\text{old}}} = \frac{1 / 1 + e^{-(b_0 + b_1 X_1 + \dots + b_k (X_k + 1))}}{1 / 1 + e^{-(b_0 + b_1 X_1 + \dots + b_k X_k)}}$$

In the above equation, the variable X_k is the variable that is being increased by one unit, while other variables are held constant.

The probability of being high traffic, calculated with the regression co-efficient of each independent variable is given below :

1. SECURITY

Hypotheses : *SSL encryption is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

$$\begin{aligned} \frac{\hat{p}_{\text{new}}}{\hat{p}_{\text{old}}} &= \frac{1 / 1 + e^{-(-6.2380 + 2.0583(1))}}{1 / 1 + e^{-(-6.2380)}} \\ &= \frac{1 + e^{-(-6.2380)}}{1 + e^{-(-6.2380 + 2.0583(1))}} \\ &= 7.7297 \end{aligned}$$

Hence, it can be concluded that, the probability of being high traffic increases by approx. 7.7 times when Security exists.

2. PRIVACY

Hypotheses : *The privacy of customers is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

$$\begin{aligned}
 \frac{\hat{p}_{\text{new}}}{\hat{p}_{\text{old}}} &= \frac{1 / 1 + e^{-(6.2380 + 0.9082(1))}}{1 / 1 + e^{-6.2380}} \\
 &= \frac{1 + e^{-6.2380}}{1 + e^{-(6.2380 + 0.9082(1))}} \\
 &= 2.4727
 \end{aligned}$$

Hence, it can be concluded that, the probability of being high traffic increases by approx. 2.4 times when **Privacy** increases by one unit.

3. RECLNK

Hypotheses : *Reciprocal links are more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

$$\begin{aligned}
 \frac{\hat{p}_{\text{new}}}{\hat{p}_{\text{old}}} &= \frac{1 / 1 + e^{-(6.2380 + 1.0898(1))}}{1 / 1 + e^{-6.2380}} \\
 &= \frac{1 + e^{-6.2380}}{1 + e^{-(6.2380 + 1.0898(1))}} \\
 &= 2.9623
 \end{aligned}$$

Hence, it can be concluded that, the probability of being high traffic increases by approx. 2.9 times when **Reciprocal Links** increases by one unit.

4. CUSTPN

Hypotheses : *Customer participation is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

$$\begin{aligned}
 \frac{\hat{p}_{\text{new}}}{\hat{p}_{\text{old}}} &= \frac{1 / 1 + e^{-(6.2380 + 2.4925(1))}}{1 / 1 + e^{-(6.2380)}} \\
 &= \frac{1 + e^{-(6.2380)}}{1 + e^{-(6.2380 + 2.4925(1))}} \\
 &= 11.8355
 \end{aligned}$$

Hence, it can be concluded that, the probability of being high traffic increases by approx. 11.8 times when Customer Participation exists.

5. CHAT

Hypotheses : *Chat is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

$$\begin{aligned}
 \frac{\hat{p}_{\text{new}}}{\hat{p}_{\text{old}}} &= \frac{1 / 1 + e^{-(6.2380 + 2.4113(1))}}{1 / 1 + e^{-(6.2380)}} \\
 &= \frac{1 + e^{-(6.2380)}}{1 + e^{-(6.2380 + 2.4113(1))}} \\
 &= 10.9321
 \end{aligned}$$

Hence, it can be concluded that, the probability of being high traffic increases by approx. 10.9321 times when Chat exists.

6. TRACK

Hypotheses : *Order tracking is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.*

$$\begin{aligned}
 \frac{\hat{p}_{\text{new}}}{\hat{p}_{\text{old}}} &= \frac{1 / 1 + e^{-(6.2380 + 1.8972(1))}}{1 / 1 + e^{-6.2380}} \\
 &= \frac{1 + e^{-6.2380}}{1 + e^{-(6.2380 + 1.8972(1))}} \\
 &= 6.5943
 \end{aligned}$$

*Hence, it can be concluded that, the probability of being high traffic increases by approx. 6.5 times when **Order Tracking** exists.*

Table 4(b) - Variables in the equation with the odds ratio

Variable	Exp(B)	95% CI Exp(B)	
		Lower	Upper
SECURITY	7.8327	2.0400	30.0739
PRIVACY	2.4798	1.6623	3.6993
RECLNK	2.9737	1.0792	8.1938
CUSTPN	12.0911	3.7171	39.3306
CHAT	11.1482	1.9953	62.2891
TRACK	6.6671	2.1479	20.6944

Table 4(b) comprises of the variables in the equation, and for each variable in the equation : estimated odds ratio ($\exp(B)$), confidence interval for $\exp(B)$. $\exp(B)$ is the value by which the odds of the event change when the i th independent variable increases by one unit. If the value is greater than 1, the odds are increased; if the value is less than 1, the odds are decreased. A value of 1 leaves the odds unchanged. The confidence interval at 95% for $\exp(B)$ indicates the range in which the average estimated odds ratio can exist.

Other Statistics

Correlation Matrix

	SECURITY	PRIVACY	RECLNK	CUSTPN	CHAT	TRACK
SECURITY	1.00000	.08601	.22965	.28357	.28502	.04573
PRIVACY	.08601	1.00000	.16577	.16663	.23123	.16067
RECLNK	.22965	.16577	1.00000	-.03286	-.19453	-.03537
CUSTPN	.28357	.16663	-.03286	1.00000	.13794	.08603
CHAT	.28502	.23123	-.19453	.13794	1.00000	.25418
TRACK	.04573	.16067	-.03537	.08603	.25418	1.00000

From the correlation matrix above, it can be seen that correlation among the independent variables is very low, thus confirming the absence of multicollinearity in the current model.

5.3.2 Variables not in the equation

Table 5 - Variables not in the equation

Variable	Score	df	Sig	R
AFFNET	.0738	1	.7858	.0000
BRPR	.1110	1	.7390	.0000
BANAD	2.9379	1	.0865	.0588
EMMK	1.3203	1	.2505	.0000
NEWSL	.6986	1	.4032	.0000
ONDISTR	1.7318	1	.1882	.0000

Table 5 comprises of those variables that were removed from the model during the model selection process. This means that these independent variables are not significant in this research. Even though the variables are not significant, the *R* statistic is positive for all the variables. The *R* statistic is used to look at the partial correlation between the dependent variable and each of the independent variables. A positive value indicates that as the variable increases in value, so does the likelihood of the event occurring.

CHAPTER 6

Section 6.1 discusses the results obtained in this research. Section 6.2 expresses the limitations of this research.

6.1 Discussion of Results

The results of the analysis indicate six distinguishing factors (customer participation, chat, security, order tracking, reciprocal links and privacy) between high traffic and low traffic on-line stores. The results also convey the role and importance of the interactivity and connectivity features of the Internet and the World Wide Web, developed in the Marketspace model.

From the results obtained, it is observed that Customer Participation is the most significant distinguishing factor. This brings out the importance of customers in the transaction process. The 'prosumer' has emerged as a successful element of high traffic on-line stores. By allowing their customers to participate in the specification and design of their products and services, on-line stores develop a good interaction with the customers. On-line stores are not only able to interact with their customers, but also able to connect with them, thus enhancing customer relationships and customer service.

The next significant distinguishing factor is Chat. By providing a forum for customers to *Chat* with one another, on-line stores develop a community's interactive space. Customers tend to attract and retain others like themselves to participate in conversations, whether for entertainment or education, thus enhancing connectivity. Since the conversations are inclined to revolve around a particular interest, common task

or hobby, they can be sources for sharing information, and become deep reservoirs of information.

Security and Privacy are also significant factors that distinguish high traffic and low traffic on-line stores. When on-line stores provide security and privacy in the transactions, connectivity is enhanced by attracting more people to confidently use the on-line stores and provide information like credit card numbers and other confidential information. Statement of privacy in on-line stores gives customers the confidence to give their information which enhances interactivity and thus customer relationship is enriched.

Order Tracking stems partially from customer participation, in the sense that the customer has the capacity and convenience to find out where the purchased product is while in transit, at any desired time. The customer does not have to entirely depend on, and wait for a third party to provide the required information. This is another way for on-line stores to connect with their customers.

Having Reciprocal Links is another distinguishing factor, and is advantageous to on-line stores. They provide their customers with the opportunity to shop for more products and services with ease. Reciprocal links help on-line stores to develop connectivity not only with their customers, but also amongst themselves.

On-line stores must introduce the factors proven to be responsible for high traffic in order to gain a competitive edge over their counterparts.

6.2 Limitations of the Study

The following are the limitations of this study:

- The sample of high traffic on-line stores is selected from an existing database. While it is unlikely, there may be a few high traffic on-line stores that are not included in the selected list. It is not in the capacity of this research to measure traffic in on-line stores.
- Differentiating factors are only those that can be seen on the website of the on-line store. The distinguishing factors identified are mainly external features. There are probably internal distinguishing features as well. The scope of this research is limited to the external features.
- Since the variables have been measured by the researcher, there is a possibility of error in the analysis of the variables.

REFERENCES

- Agres, C., Edberg,D., Igbaria, M., 1998. Transformation to Virtual Societies: Forces and Issues. The Information Society, 14:71-82.
- Armstrong, A., Hagel III, J., 1996. The Real Value of On-Line Communities. Harvard Business Review, May-June: 134-141.
- Asimov, I., 1977. The Supermarket 2077 A.D. Progressive Grocer,56 (June) : 52-53.
- Bakos, J.Y., 1991. A Strategic Analysis of Electronic Marketplaces. MIS Quarterly, 15(September) : 295-310.
- Bloch, M., Pigneur, Y., Segev, A., March 1996. On the Road of Electronic Commerce-a Business Value Framework, Gaining Competitive Advantage and Some Research Issues. <http://www.haas.berkeley.edu/~citm/research/>
- Choi , S.Y., Whniston,A.B., 1999. The Future of E-Commerce: Integrate and Customize. Internet Watch, January: 133-138.
- Covin , J.G., Slevin , D.P., Covin , T.J., 1990. Content and Performance of Growth Seeking Strategies: A Comparison of Small Firms in High- and low-Technology Industries. Journal of Business Venturing, 5: 391-412.
- Davis , Stanley M., " Future Perfect", 1987.
- Doody , A.F., Davidson , W.R., 1967. Next Revolution on Retailing. Harvard Business Review,45 (May-June): 4-16,20,188.
- Dutta , S. and Segev A., 1999. Business Transformation on the Internet. <http://www.haas.berkeley.edu/~citm/research/>
- Dutta, S., S. Kwan and A. Segev, 97/53/TM, 1997. Transforming Business in the Marketspace: Strategic Marketing and Customer Relationships. INSEAD, Fontainebleau, France. <http://risex.insead.fr/rise/index.htm>
- Ellsworth, Jill and Matthew; " The New Internet Business Book"; 1996.
- Evans, Philip and Wurster, Thomas S., 1997. Strategy and The New Economics of Information. Harvard Business Review, September-October : 71-82.

Evans, Philip and Wurster, Thomas S., 1999. Getting Real About Virtual Commerce. Harvard Business Review, November-December : 85-94.

Freiser, H.R., Gary, E.W., 1990. Founding Strategy and performance : A Comparison of High and Low Growth High Tech Firms. Strategic Management Journal, 11:87-98.

Janal, Daniel S.; "101 Successful stores you can start on the Internet"; 1997.

Ghosh, S., 1997. Selling on the Internet: Achieving Competitive Advantage and Market Lead. Strategy and Leadership, May/June : 53-55.

Ghosh, S., 1998. Making Business Sense of the Internet. Harvard Business Review, March-April : 126-135.

Grenier, R., Metes, G., 1995. Going Virtual, moving your organization into the 21st. century. Englewood Cliffs, NJ: Prentice Hall.

Griffin, A. and Page A.L., 1993. An Interim Report on Measuring Product Development Success and Failure. Journal of Product Innovation Management, 10:291-308.

Honeycutt Jr.E.D., Flaherty, T.B., Benassi, K., 1998. Marketing Industrial Products on the Internet. Industrial Marketing Management, 27:63-72.

Kalakota, R., Whinston, A.B., 1996. Frontiers of Electronic Commerce. Addison Wesley Reading, MA.

Malone, T.W., Yates, J., Benjamin, R.I., 1987. Electronic Markets and Electronic Hierarchies. Communications of the ACM, 30(6): 484-497.

Nath, R., Akmanligil, M., Hjelm, K., Sakaguchi, T., Schultz, M., 1998. Electronic Commerce and the Internet: Issues, problems, and Perspectives. International Journal of Information Management, 18(2):91-101.

OECD(Organization for Economic Co-operation and Development) - Measuring Electronic Commerce. Vol. V, 1997.

Peterson, R.A., Balasubramanian, S., Bronnenberg, B.J., 1997. Exploring the Implications of the Internet for Consumer Marketing. Journal of the Academy of Marketing Science, 25(4): 329-346.

Riggins, F.J., Rhee, H.S., 1998. Toward a Unified View of Electronic Commerce, Communications of the ACM, 41(10): 88-95.

Roberts, E.B., 1992. The Success of High-Technology Firms: Early Technological and Marketing Influences. INTERFACES, 22: 4 July-August : 3-12.

Rosenberg, L.J., Hirschman, E.C., 1980. Retailing Without Stores. Harvard Business Review, 58(July-August): 103-112.

Sawyer et al.; "Creating Stores on the Web"; 1998.

Schwartz, Evan I; "Webonomics: Nine Essential Principles for Growing Your Business on The World Wide Web"; 1997.

Toffler, Alvin, " Power Shift", 1990.

West, E.J.W., 1997. Using the Internet for business - Web oriented routes to market and existing IT infrastructures. Computer Networks and ISDN Systems, 29: 1769-1776.

Zwass, V.,1996. Electronic Commerce : Structures and Issues. International Journal of Electronic Communication, Fall : 3-23.

<http://www.infodial.net/features/secureserver/index.htm>

www.anu.edu.au/people/Roger.Clarke/DV/Intro.html

<http://www.canadaone.com/technology/estrat070198.html>

<http://www.internetworld.com/print/1997/08/18/undercon/19970818-links.html>

<http://www.quidnunc.com/banner/ecommerce.asp>

<http://www.searchz.com/clickz/011398.shtml>

http://www.emarketer.com/estats/ec_hot_10.html

<http://www.emergemarketing.com/newslet.htm>

<http://www.webmarketingtoday.com/articles/newsletter.htm>

<http://www.cyberm.com/ecsd.htm>

APPENDICES

Appendix A - Customer Participation

<http://www.dell.com/dellplus/index.htm>

The screenshot shows the Dell Plus Custom Integration Factory website. At the top left is the Dell logo. The main heading is "DELLPLUS-Custom Integration factory". Below this, a paragraph describes the service: "DellPlus is the unique Custom Factory Integration service from Dell, which provides an extensive range of custom built, factory installed solutions. After determining your exact needs, Dell performs the custom configuration during the initial system build." This is followed by the sub-heading "See what DellPlus can offer your business" and a list of services: "DATA STORAGE", "SERVERS", "PERIPHERALS", and "SOFTWARE". A paragraph then states: "Delivered anywhere in the world, ready to plug-in and power-up, the Dell Latitude® notebooks, OptiPlex® desktops, Precision™ workstations, and PowerEdge® servers you require are configured with the hardware and software your business relies on, including proprietary software." To the right, under the heading "Hear what our customers are saying:", there is a quote from Glen Wellcome, a leading research-based pharmaceutical firm, who needed to replace their entire sales force's 3,000 laptops, they called Dell. "And, we made the right choice," says Len Uley, IT Director. Below this is the heading "How can I initiate a DellPlus order?" and a paragraph: "Please talk with one of our sales representatives, who will explain the DellPlus process to you." At the bottom left, there is a footer with the text: "For US, Canadian, and Latin American Customers only. Copyright 1999 Dell Computer Corporation. All rights reserved. (Terms of Use) Online privacy practices".

DELL

DELLPLUS-Custom Integration factory

DellPlus is the unique Custom Factory Integration service from Dell, which provides an extensive range of custom built, factory installed solutions. After determining your exact needs, Dell performs the custom configuration during the initial system build.

See what DellPlus can offer your business

- DATA STORAGE
- SERVERS
- PERIPHERALS
- SOFTWARE

Delivered anywhere in the world, ready to plug-in and power-up, the Dell Latitude® notebooks, OptiPlex® desktops, Precision™ workstations, and PowerEdge® servers you require are configured with the hardware and software your business relies on, including proprietary software.

Hear what our customers are saying:

When Glen Wellcome, a leading research-based pharmaceutical firm, needed to replace their entire sales force's 3,000 laptops, they called Dell. "And, we made the right choice," says Len Uley, IT Director.

How can I initiate a DellPlus order?

Please talk with one of our sales representatives, who will explain the DellPlus process to you.

For US, Canadian, and Latin American Customers only.
Copyright 1999 Dell Computer Corporation. All rights reserved. (Terms of Use)
Online privacy practices

Appendix B - Banner Advertising

<http://www.ticketmaster.com/>

Appendix C - Reciprocal Links (a)

<http://www.circuitcity.com/> and www.carmax.com

Circuit City Online 1 - Netscape

© The New
Info@
Pentium®
II
processors
are here!
© In-store
Build-to-Order PCs!

[Business Services](#)
© [FIC's Web
Guidelines](#)

CDs !

Our Allied Companies

DIVX **CARMAX**

The Divx feature has been discontinued.
Read the company news release announcing Special Pricing, Rebate and Return Procedures for DIVX Customers. Print out and complete the \$100 DivX Rebate Form for customers who purchased a DIVX player before 6/16/99.

CarMax, the Auto Superstore
"The new way to buy cars™"

© 1999-1998 Circuit City Stores, Inc.
3850 Mayland Drive
Richmond, VA 23233

If you have experienced any technical difficulties with this web site, please contact the [support](#).

Support

Appendix D - Reciprocal Links (b)

Appendix E - Security

<http://www.amazon.com/exec/obidos/subst/help/security-guarantee.html/002-1423508-1139019>

Safe Ordering at Amazon.com - Netscape

amazon.com [HELP](#)
[YOUR ACCOUNT](#)

[First Order](#)

Full search: [Books](#),
[Music](#), or [Video](#)

**Safe and easy ordering--
Guaranteed!**
© Amazon.com

The Amazon.com Safe Shopping Guarantee protects you while you shop at Amazon.com, so that you never have to worry about credit card safety. Period.

We guarantee that every transaction you make at Amazon.com will be 100% safe. This means you pay nothing if unauthorized charges are made to your card as a result of shopping at Amazon.com. See [guarantee details](#) below.

Why is Amazon.com so safe?

- **Safety in Numbers:** When you shop at Amazon.com, you'll be one of 10 million customers who have safely shopped with us without credit card fraud.
- **Safe Technology:** Our secure server software (SSL) is the industry standard and among the best software available today for secure commerce transactions. It encrypts all of your personal information, including credit card number, name, and address, so that it cannot be read as the information travels over the Internet.

Still don't want to use your credit card on the Internet?

No problem. Just fill out our order form online. Enter only your card's last five digits and its expiration date. Once you have fully submitted your order, you will be prompted with a phone number that you can use to call in the rest of your card number.

Guarantee Details:

Appendix F - On-line Distribution of Products

Internet Explorer 4.0 (http://www.beyond.com/)

http://www.beyond.com/

Individual Customers | Business Customers | Government Customers

The Place to Buy Software and More...

beyond.com

Search

0 Items in cart.

Order Status Contact Us

Safe Shopping Guarantee

November 15, 1999

Welcome to Beyond.com

SOFTWARE

DOWNLOAD CENTER

Get Organized!

Windows SOFTWARE CATEGORIES

- Games: PC Games, PlayStation, more...
- Kid Zone: Interactive Storybooks, Art & Creativity, more...
- Hobbies: Cooking & Wine, Home Publishing, more...
- Graphics & Multimedia: Clip Art & Fonts, Design & Illustration, more...
- Communications: Voice Recognition, Email, more...

In Our Download Center
Digitally downloading software has never been easier. Try our new Download Pro download manager and get great software like Blackbook 1.1. FREE

Special Holiday Offers
Get great software gifts with the click of a mouse. You're just one click away from finding special prices on this season's best gifts. Click here.

In Features
Starting a home office up and working isn't as hard as you may think. Read our feature story and learn how to Get Organized.

Appendix G - Affiliate Networks

<http://www.beyond.com/affiliates/>

[Affiliate Program](#) [Hotspots](#)

beyond.com
The Software Superstore

Software
and Beyond

[Shopping Cart](#)
[Contact Us](#)
[Order Status](#)

SEARCH

SHOPPING CART
Empty

Affiliate Program

[Affiliates Home](#)

Become an Affiliate
[Join Now!](#)
[Program Overview](#)
[Getting Started](#)
[Operating Agreement](#)
[Store Tips](#)
[Example Affiliates](#)
[FAQ](#)

Member Section
[Welcome Kit](#)
[Linking Methods](#)
[Graphics & Icons](#)
[Sales Report](#)
[Account Info](#)

COMPANY
[About Beyond.com](#)
[Affiliates Program](#)
[Free Newsletter](#)
[Investor Relations](#)
[Publisher Sign-Up](#)

Open your own online software store in minutes!

If you have a website, we have an easy way for you to earn money and increase your site traffic. By becoming a Beyond.com Affiliate, you can open your own online software store in minutes, for free! You'll earn 5-10% for every software title and 2% for every hardware product you sell from Beyond.com (excluding Compaq products).

[Join now](#) and link to Beyond.com from your website -- it's that easy!

Already an Affiliate?

Getting or updating your account information is easy!

- Visit our [Affiliate Account Information](#) update page to edit account information such as your password.
- Get a [real-time sales report](#).
- Forgot your password or Affiliate number? Use our [retriever](#).

[About Beyond.com](#) | [Affiliates Program](#) | [Free Newsletter](#) | [Investor Relations](#) | [Publisher Sign-Up](#)

[Home](#) | [Shopping Cart](#) | [Customer Service](#) | [Order Status](#) | [About Beyond.com](#) | [Contact Us](#) | [Jobs](#)
[Safe Shopping Guarantee](#) | [Privacy Policy](#)

[Terms of Use](#)
Copyright © 1998, 1999 Beyond.com Corporation. All Rights Reserved

Appendix H - Privacy

http://www.egghead.com/about/corp_privacy.html

Appendix I - E-mail Marketing

<http://www.barnesandnoble.com/>

barnesandnoble.com - The World's Largest Bookseller Online - Netpage

Software Magazines Bargain Books

Shopping Cart Your Account Help Desk

IF WE DON'T HAVE YOUR BOOK, NOBODY DOES

bn.com
BARNES & NOBLE

Who is **GIDEON**? In this twisting, turning thriller, answering that question is a project any writer would die for -- and may. Jump into this powerhouse debut for a searing, savvy, sinister read! [More Thrillers and Espionage](#)

As another writer put it, if anybody could make the world of book publishing seem as interesting and lively as show business or the mob, it's Michael Korda. After reading **ANOTHER LIFE**, we agree. [More Biography](#)

Michael Korda
Another Life

Find Us Faster!
Now it's even easier to buy books. Just type [bn.com](#)!

Our Music Store is Coming Soon!
Enter your email address below, and we'll let you know about our grand opening

Remember Your First Book?
Bet you can find it in our millions of [out-of-print](#), used, and rare books.

Now! Check Your Orders Online

TODAY IN FUTURE BESTSELLERS

Coming Soon

• **TRUE AT FIRST LIGHT**, Ernest Hemingway's posthumous fictional memoir of a 1953 safari in Kenya, arrives just in time to celebrate Papa's 100th birthday. Available July 6th.

• **THE OUTLANDISH COMPANION**, Diana Gabaldon

IN OUR SOFTWARE STORE

Keep Your Shirt On
Create it, print it, apply it, wear it! Make your own one-of-a-kind T-shirts right on your PC with **ART EXPLOSION T-SHIRT FACTORY**. Choose from 3,000 designs or create your own -- everything you need is in the box. Save \$10 if you order before June 25th!

Appendix J - Newsletter

<http://www.videoflicks.com/join.html>

Videoflicks Video Sales - Newsletters - Home

Videoflicks **NEWSLETTER**
search over 100,000 titles DVD SPECIALS NEW RELEASES

[Home](#) [Back](#)

[Visit our Help Desk](#)

[Check Order Status](#)
[View Shopping Cart](#)
[100 Greatest Movies](#)
[Widescreen Movies](#)
[Free Newsletter](#)
[Associate Program](#)
[Bennett Marine](#)
[Auntie Stories & More](#)
[Employment](#)

Please select the Newsletter you would like to subscribe or unsubscribe to.

☐ General Newsletter	☐ Hollywood Releases
☐ Family and Kid	☐ Back in Print
☐ Musical	☐ DVD News
☐ Foreign and Independent	☐ POP Culture & Sci-Fi
☐ Recently Priced To Own	☐ Classic Flicks
☐ Special Interest	☐ Press Releases

Please enter your E-mail address:

☐ Subscribe ☐ Unsubscribe

You will receive the newsletters by return e-mail in a few minutes

Please note:
It will take about 20 seconds to process each newsletter you subscribe to. If you subscribe to all of the newsletters, it will take about 2 minutes.

Appendix K - Chat

<http://family.go.com/Chat/>

Appendix L - Breadth of Products

<http://www.wal-mart.com/>

Shop Wal-Mart Online - News & Info

WAL-MART
online

Click Here! For Merchandising

SEARCH PRODUCTS

- ▶ Appliances & Home Accents
- ▶ Baby Shop
- ▶ Books
- ▶ Computers & Software
- ▶ Electronics & Office
- ▶ Gourmet Food & Floral
- ▶ Health and Medical
- ▶ Jewelry & Gifts
- ▶ Music and Video
- ▶ Sporting Goods
- ▶ Toys & Hobby

CUSTOMER SERVICE

- ▶ Security Guarantee
- ▶ Review Shopping Cart
- ▶ View the Help text

Featured Items

- \$12.98**
Black House on the Moon
Jimmy Buffet
- \$8.99**
The 7 Worst Things Parents Do
by John Frest
- \$89.97**
George Foreman's Fusion Grill
- \$188.00**
Sharp 100 Watt Pro Logic™
Shelf System
- Six Language Translator - \$19.97**

More Featured Items

COMPANY

- ▶ Newsroom
- ▶ Career Opportunities
- ▶ Store Locator
- ▶ Wal-Mart Foundation
- ▶ SAM'S Club
- ▶ Realty
- ▶ Pharmacy
- ▶ Tire and Lube Express

GO TO LOCATION

IN-STORES

1999 My Hometown Jr. Photography Contest

Apply Now! Wal-Mart MasterCard from Chase

Copyright © 1996, 1997, 1998, 1999 Wal-Mart Stores, Inc.
Click here to send us your comments, or call 1-800-965-6546 to speak with a Customer Service representative.

Appendix M - Order Tracking

landsend.com

Shop with a friend

Enter Your Lands' End Order Number

Track Your Package

This form lets you track Lands' End packages in the UPS shipping system.

Usually, we fill your order within 24 hours and send it on its way to you. (Monogramming or inseaming adds a day or two to the process.) Your order number will be "trackable" after it leaves our warehouse.

- If you enter your order number and the UPS system tells you it has no record of that package, this only means your package is still with us.
- Tracking information is available for two weeks after your package is shipped.
- Lands' End is not responsible for the maintenance or proper functioning of the UPS site that tracks our packages. That site is solely the responsibility of UPS.

Appendix N - Checklist of Variables Measured

S.No	Variable	Hypotheses	Measure
1.	Security	<i>SSL encryption is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.</i>	SSL present - 1 SSL not present - 0
2.	Privacy	<i>The privacy of customers is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.</i>	One FTC ² measure - 1 Two FTC measures - 2 Three FTC measures - 3 Four FTC measures - 4 No FTC measures - 0
3.	Affiliate Networks	<i>Affiliate Networks are more likely to be associated with high traffic on-line stores than with low traffic on-line stores.</i>	Connected to Affiliate Network - 1 Not connected to Affiliate Network - 0
4.	Reciprocal Links	<i>Reciprocal links are more likely to be associated with high traffic on-line stores than with low traffic on-line stores.</i>	Count the number of links to other on-line stores that are linked back to the evaluated on-line store.
5.	Banner Advertising	<i>Banner advertising is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.</i>	Count the number of banners in the home page of the on-line store.
6.	Customer Participation	<i>Customer participation is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.</i>	Customized products and services offered : 1 Customized products and services not offered : 0
7.	Chat	<i>Chat is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.</i>	Chat is available : 1 Chat is not available : 0
8.	E-mail Marketing	<i>E-mail marketing is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.</i>	E-mail marketing present : 1 E-mail marketing not present : 0
9.	Newsletters	<i>Newsletters are more likely to be</i>	Newsletter offered : 1

² The FTC measures are : (a) Give consumers notice of what information is collected and how it is used; (b) let consumers choose whether to allow secondary uses of information (for example, to decide whether their name can be used for follow-up marketing from the company or be sold to a third party); (c) give consumers "reasonable access" to their information and let them correct any errors; and (d) ensure the information's security.

		<i>associated with high traffic on-line stores than with low traffic on-line stores.</i>	Newsletter not offered : 0
10.	On-line distribution of products	<i>On-line distribution of products and services is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.</i>	If product or service can be transferred to the customer via the electronic medium : 1 If product or service cannot be transferred to the customer via the electronic medium : 0
11.	Breadth of products	<i>A larger variety of products is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.</i>	Count the number of categories of products available in the on-line store.
12.	Order Tracking	<i>Order tracking is more likely to be associated with high traffic on-line stores than with low traffic on-line stores.</i>	Order tracking allowed : 1 Order tracking not allowed : 0

Appendix O - List of 100 hot On-line Stores

S.No.	Name of On-line Store
1.	Amazon.com
2.	Blue Mountain
3.	eBay
4.	Onsale.com
5.	TicketMaster
6.	Macy
7.	3D Animated Greeting Cards
8.	Levi Strauss
9.	Egghead Computers
10.	Autobytel
11.	Beyond.com
12.	Tower Records
13.	BarnesandNoble
14.	Virtual Flowers
15.	MicroWarehouse Inc.
16.	Jcrew
17.	Classifieds 2000
18.	Outpost.com
19.	QVC
20.	IUMA
21.	REI
22.	CDW (Computer Discount Warehouse)
23.	NECX
24.	Tiger Direct.com
25.	Access Micro
26.	Creative Computers
27.	CompUSA
28.	iMall
29.	RandomHouse Inc.
30.	Reel.com
31.	FreeShop
32.	The Sharper Image
33.	Fashion Mall
34.	GORP
35.	Wal-Mart
36.	Trip.com
37.	Airwalk
38.	Circuitcity.com
39.	Auction Universe
40.	Garden Escape

41.	Brooks Brothers
42.	Schwinn Cycling and Fitness
43.	JamTV
44.	VideoFlicks.com
45.	Campmor.com
46.	Swords'n'Stuff
47.	e-greetings
48.	CDNow
49.	Homearts
50.	DVD Express
51.	GoNetwork
52.	e-toys
53.	Shopping.com
54.	LL Bean
55.	Peapod
56.	ColumbiaHouse
57.	Gateway 2000
58.	Electronics Boutique
59.	e-music
60.	Cool Savings.com
61.	Kenneth Cole
62.	CD Universe
63.	Improvenet
64.	DAMARK
65.	Office Max
66.	JC Penney
67.	Access Galaxy Mall
68.	CatalogLink
69.	Avon.com
70.	Shades.com
71.	Kmart
72.	KCWeb
73.	1-800-Flowers
74.	BigDeal.com
75.	Internet Shopping Outlet
76.	Dooney.com
77.	Official Fossil
78.	FTD
79.	Sony Music Store
80.	Lands' End
81.	NetGrocer
82.	<u>www.vr-mall.com</u>
83.	Specialized Systems Consultants Inc.
84.	Choice World
85.	Wig Outlet

86.	The OS/2 Supersite
87.	bloomingdales.com
88.	<u>www.dealdeal.com</u>
89.	iBaby.com
90.	Fingerhut On-line
91.	Classifieds and Auctions
92.	Powell's Bookstore-used
93.	<u>www.juara.com</u>
94.	Cliffs.com
95.	auctions.lycos.com
96.	www.wwcd.com
97.	www.20-20consumer.com
98.	tias.com
99.	ViaMall
100.	Tower Records-@Tower.JP

Appendix P - List of Non-100 hot On-line Stores

S.No.	Name of on-line store
1.	Coldwater Creek
2.	Hanna Anderson
3.	Medsite
4.	BoxLot.com
5.	DVD Empire
6.	ccmusic.com
7.	Kingdom Computers
8.	Decor-accessories.com
9.	Stuff.com
10.	albooks.com
11.	Advanced Electronics
12.	21store.com
13.	Flower Stop
14.	flowerfarm.com
15.	Zirh
16.	1Bookstreet.com
17.	Your Grocer
18.	2Bid.com
19.	Esco
20.	abeam.com
21.	Sierra Trading Post
22.	Braun's.com
23.	Grass Roots
24.	auction-sales.com
25.	World Traveller
26.	Auctionscape.com
27.	BorrowORob
28.	CDSource.com
29.	Shopping-Hawaii.com
30.	Lind Electronics
31.	WinAuction
32.	Blowout Video
33.	Executive Greeting cards
34.	BigE.Hollywood.com
35.	The Clothes Store
36.	Travelocity.com
37.	Bigwords.com
38.	GetMusic
39.	Cybershop.com
40.	eCost.com

41.	First Auction
42.	Boomiso.com
43.	Marketplaza
44.	Ally Office Furniture
45.	Aadvark Cycles
46.	Enchantments
47.	Bluefly
48.	C.Dickens
49.	MusicMachine
50.	DCG Computers
51.	Crate and Barrel
52.	Dynamic Sound Systems
53.	Rafaelloties
54.	Buyiton-line
55.	800.com
56.	Behome.com
57.	Office Base
58.	Pearsall's Garden
59.	Rainbow Ink Jet
60.	Zootsports
61.	Handmade Paradise
62.	Anymountain gear
63.	Bookscloseouts.com
64.	C and D Merchants
65.	Charityville
66.	In Touch Travel
67.	Alphabetstreet Books
68.	Discount CD's
69.	CyberWarehouse
70.	Sutter Tel.Com
71.	Mercata
72.	Gifts Galore
73.	Homeatrium
74.	Efootwear
75.	Anime World
76.	Uauction.com
77.	eoffprice.com
78.	BestFares.com
79.	Top 5.com
80.	Coast to Coast Memory
81.	Nordstorm
82.	Digital and Video.com
83.	1 Click Flowers
84.	Cosmetics.com
85.	Household Products

86.	Ni3D.com
87.	MountainZone.com
88.	World Wide Auctions
89.	Tech Jungle.com
90.	Books.com
91.	CDWorld.com
92.	Computer-Show.com
93.	Ezbid online auction
94.	electronics4sale
95.	Van Ness Water Gardens
96.	Bruder Toys
97.	123greetings.com
98.	Bonus Books
99.	CactusFlower
100.	Buy Music

Appendix Q - Verification of data collected

The sample size in this research is a total of 200 on-line stores. 25% of the data collected was verified, and since there are 200 on-line stores in total, 50 on-line stores were verified. 25 on-line stores were analyzed from the 100hot.com list of on-line stores, and 25 on-line stores were analyzed from the shopguide.com list of on-line stores.

The data collected by the researcher has been verified, and the following has been observed :

1. **SECURITY** - The presence or absence of SSL has been identified correctly in all the on-line stores.
2. **PRIVACY** - There are four FTC measures given to measure this variable, namely, (a) Give consumers notice of what information is collected and how it is used; (b) Let consumers choose whether to allow secondary uses of information (for example, to decide whether their name can be used for follow-up marketing from the company or be sold to a third party); (c) Give consumers "reasonable access" to their information and let them correct any errors; and (d) Ensure the information's security.

The data collected with the help of these measures is precise and accurate.

3. **AFFILIATE NETWORKS** - Whether or not the on-line stores belonged to an affiliate network, was identified easily and accurately.
4. **RECIPROCAL LINKS** - The number of links from and to the on-line stores have been counted, and have been found to be the same when compared to the number of links counted by the researcher.

5. **BREADTH OF PRODUCTS** - The Yahoo listing has been chosen to categorize the products offered by the on-line stores, thus providing a standard for easy classification and counting.
6. **BANNER ADVERTISING** - The number of banners in the home page of each on-line store was counted, and there was no variance in the data that was collected and the data that was verified.
7. **CHAT** - The chat facility provided by the on-line stores has been identified with ease and accuracy. On-line stores either have chat, or they do not.
8. **CUSTOMER PARTICIPATION** - The participation of customers in the transaction process was analyzed, and it was found that the results obtained by the researcher were the same as those found on verification.
9. **E-MAIL MARKETING** - On-line stores offer to provide their customers with discounts and product information via e-mail. This variable like CHAT, has been easy and accurately identified.
10. **NEWSLETTER** - The provision of a newsletter is similar to that of chat, or being part of an affiliate network. The newsletter is either offered, or it is not. This variable has also been identified and measured accurately.
11. **TRACKING** - On-line stores allow customers to track their products while in transit. This procedure has been analyzed and it has been ascertained that the researcher has analyzed the data with precision.
12. **ON-LINE DISTRIBUTION** - The on-line distribution of products and services includes those products and services that can be transmitted electronically. The data collected on this variable is precise in all the on-line stores that were verified.

List of on-line stores verified from the 100hot.com list.

S.No.	Name of on-line store
1.	Amazon.com
2.	Jcrew
3.	eBay
4.	Onsale.com
5.	TicketMaster
6.	Macy
7.	iBaby.com
8.	Levi Strauss
9.	Egghead Computers
10.	Autobytel
11.	Reel.com
12.	Lands' End
13.	The Sharper Image
14.	Fashion Mall
15.	GORP
16.	Wal-Mart
17.	DVD Express
18.	Powell's Bookstore-used
19.	e-toys
20.	bloomingdales.com
21.	LL Bean
22.	Peapod
23.	Sony Music Store
24.	Dooney.com
25.	VideoFlicks.com

List of on-line stores verified from the shopguide.com list.

S.No.	Name of On-line Store
1.	Coldwater Creek
2.	Hanna Anderson
3.	Medsite
4.	BoxLot.com
5.	DVD Empire
6.	ccmusic.com
7.	Kingdom Computers
8.	Decor-accessories.com
9.	CDSource.com
10.	albooks.com
11.	Lind Electronics
12.	WinAuction
13.	Blowout Video
14.	Office Base
15.	BigE.Hollywood.com
16.	The Clothes Store
17.	Zootsports
18.	Handmade Paradise
19.	Anymountain gear
20.	Bookscloseouts.com
21.	C and D Merchants
22.	Bonus Books
23.	CactusFlower
24.	Buy Music
25.	MountainZone.com

Verified by : Ganesh Ramasivan

Appendix R - Frequency Tables for Continuous Data

1. PRIVACY

GROUP			Frequency	Percent	Valid Percent	Cumulative Percent
1.00	Valid	.00	1	1.0	1.0	1.0
		1.00	12	12.0	12.1	13.1
		2.00	9	9.0	9.1	22.2
		3.00	8	8.0	8.1	30.3
		4.00	69	69.0	69.7	100.0
		Total	99	99.0	100.0	
	Missing	System	1	1.0		
	Total		100	100.0		
.00	Valid	.00	50	50.0	51.5	51.5
		1.00	15	15.0	15.5	67.0
		2.00	13	13.0	13.4	80.4
		3.00	7	7.0	7.2	87.6
		4.00	12	12.0	12.4	100.0
		Total	97	97.0	100.0	
	Missing	System	3	3.0		
	Total		100	100.0		

2. RECIPROCAL LINKS

GROUP			Frequency	Percent	Valid Percent	Cumulative Percent
1.00	Valid	.00	58	58.0	58.6	58.6
		1.00	12	12.0	12.1	70.7
		2.00	12	12.0	12.1	82.8
		3.00	4	4.0	4.0	86.9
		4.00	5	5.0	5.1	91.9
		5.00	4	4.0	4.0	96.0
		6.00	4	4.0	4.0	100.0
		Total	99	99.0	100.0	
	Missing	System	1	1.0		
Total			100	100.0		
.00	Valid	.00	89	89.0	91.8	91.8
		1.00	7	7.0	7.2	99.0
		2.00	1	1.0	1.0	100.0
		Total	97	97.0	100.0	
	Missing	System	3	3.0		
	Total		100	100.0		

3. BREADTH OF PRODUCTS

GROUP			Frequency	Percent	Valid Percent	Cumulative Percent
1.00	Valid	1.00	25	25.0	25.3	25.3
		2.00	14	14.0	14.1	39.4
		3.00	12	12.0	12.1	51.5
		4.00	5	5.0	5.1	56.6
		5.00	7	7.0	7.1	63.6
		6.00	10	10.0	10.1	73.7
		8.00	4	4.0	4.0	77.8
		9.00	2	2.0	2.0	79.8
		10.00	5	5.0	5.1	84.8
		11.00	1	1.0	1.0	85.9
		12.00	1	1.0	1.0	86.9
		13.00	3	3.0	3.0	89.9
		14.00	10	10.0	10.1	100.0
		Total	99	99.0	100.0	
	Missing	System	1	1.0		
	Total		100	100.0		
.00	Valid	.00	1	1.0	1.0	1.0
		1.00	48	48.0	49.5	50.5
		2.00	16	16.0	16.5	67.0
		3.00	9	9.0	9.3	76.3
		4.00	7	7.0	7.2	83.5
		5.00	3	3.0	3.1	86.6
		6.00	2	2.0	2.1	88.7
		7.00	3	3.0	3.1	91.8
		8.00	2	2.0	2.1	93.8
		9.00	1	1.0	1.0	94.8
		10.00	1	1.0	1.0	95.9
		12.00	1	1.0	1.0	96.9
		14.00	3	3.0	3.1	100.0
		Total	97	97.0	100.0	
	Missing	System	3	3.0		
	Total		100	100.0		

4. BANNER ADVERTISING

GROUP		Frequency	Percent	Valid Percent	Cumulative Percent
1.00	Valid	3.00	1	1.0	1.0
		5.00	1	1.0	2.0
		7.00	2	2.0	4.0
		8.00	2	2.0	6.1
		9.00	3	3.0	9.1
		10.00	2	2.0	11.1
		11.00	3	3.0	14.1
		12.00	5	5.0	19.2
		13.00	4	4.0	23.2
		14.00	5	5.0	28.3
		15.00	5	5.0	33.3
		16.00	4	4.0	37.4
		17.00	4	4.0	41.4
		18.00	9	9.0	50.5
		19.00	2	2.0	52.5
		20.00	5	5.0	57.6
		21.00	10	10.0	67.7
		22.00	7	7.0	74.7
		23.00	3	3.0	77.8
		24.00	2	2.0	79.8
		25.00	5	5.0	84.8
		26.00	4	4.0	88.9
		27.00	1	1.0	89.9
		28.00	2	2.0	91.9
		31.00	2	2.0	93.9
		32.00	4	4.0	98.0
		36.00	2	2.0	100.0
		Total	99	99.0	100.0
	Missing	System	1	1.0	
	Total		100	100.0	
.00	Valid	2.00	2	2.0	2.1
		3.00	2	2.0	4.1
		4.00	6	6.0	10.3
		5.00	6	6.0	16.5
		6.00	12	12.0	28.9
		7.00	9	9.0	38.1
		8.00	7	7.0	45.4
		9.00	8	8.0	53.6
		10.00	3	3.0	56.7
		11.00	4	4.0	60.8

BANNER ADVERTISING (...Continued)

GROUP		Frequency	Percent	Valid Percent	Cumulative Percent
	12.00	4	4.0	4.1	64.9
	13.00	4	4.0	4.1	69.1
	14.00	6	6.0	6.2	75.3
	15.00	3	3.0	3.1	78.4
	16.00	1	1.0	1.0	79.4
	17.00	2	2.0	2.1	81.4
	18.00	4	4.0	4.1	85.6
	19.00	4	4.0	4.1	89.7
	20.00	2	2.0	2.1	91.8
	21.00	1	1.0	1.0	92.8
	22.00	2	2.0	2.1	94.8
	23.00	3	3.0	3.1	97.9
	25.00	1	1.0	1.0	99.0
	26.00	1	1.0	1.0	100.0
	Total	97	97.0	100.0	
Missing	System	3	3.0		
Total		100	100.0		