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**E-COMMERCE STRATEGIES:
SHAPING THE PROFILES OF E-TAILING & E-SHOPPING BY CYBERMALLS**

An Interactive Qualifying Project Report:
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of the

WORCESTER POLYTECHNIC INSTITUTE

in partial fulfillment of the requirements for the

Degree of Bachelor of Science

by:

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1. Internet
2. e-commerce
3. cybermall



ABSTRACT

This report examines how cybermalls as technology interacts with societal structures and values of the online community. A review of research literature was conducted to study the role of the cybermall as an e-business model and its relationship with and impact on online consumers and businesses. The research hypothesis was that a review of relevant literature would yield a set of advantages that would indicate the popularity of cybermalls among e-shoppers and e-tailers. The survey findings, however, offer a different perspective.

DEDICATION

The author dedicates this paper to his mother Fadwa Y. AL-Said, his father Abed Y. AbuJubarah, his brothers and sisters, and his fiancée, Dareen Majdi. Without their personal sacrifice, unending patience and steadfast support this paper would never have been possible.

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TABLE OF CONTENTS

List of Tables	vi
-----------------------	----

List of Charts	vii
-----------------------	-----

1 INTRODUCTION

1.1	Introduction	8
1.2	Objectives	10

2 BACKGROUND: INTERNET

2.1	Defining the Internet	11
2.2	A Brief History of the Internet	12
2.3	Internet and Society	16
2.3.1	The Internet's Impact on Society.....	16
2.3.2	The Changes.....	17
2.4	Internet Today: Current Statistics	20

3 BACKGROUND: E-COMMERCE

3.1	Defining E-Commerce	22
3.1.1	Categories of electronic commerce	22
3.2	Advantages of E-Commerce	23
3.2.1	Opportunities for Suppliers	23
3.2.2	Benefits to Customers	24
3.3	Disadvantages of E-Commerce	25
3.4	The Impact of E-Commerce	26
3.5	E-Commerce Today: Current Statistics	27

4 CYBERMALLS

4.1	The Internet As Cybermall	38
4.2	Defining Cybermalls	39
4.3	Premium Examples: iMall.com, QVC.com, and Spree.com	41
4.4	Advantages and Disadvantages	42
4.4.1	Consumer Perspective	43
4.4.2	Business Perspective	45
4.5	The Future of Cybermalls	49

5	METHODOLOGY	
5.1	Purpose	52
5.2	Questionnaire Design	53
5.3	Collection Method	53
6	SURVEY RESULTS	
6.1	Cybermall-related Questions: Key Findings	55
6.2	Consumer Survey Results Analysis	56
7	DISCUSSIONS AND RECOMMENDATION	
7.1	Conclusion	71
7.2	For Consumers	74
7.3	For Businesses	79
7.4	For Cybermalls	84
	APPENDICES	
A:	Cybermall Consumer Survey	86
A1:	Cybermall Consumer Survey (WEB)	90
A2:	Cybermall Consumer Survey Data	91
B:	Cybermall Business Survey	126
B1:	Cybermall Business Survey (WEB)	127
C:	Internet Timeline by BBN	128
D:	Premium Cybermalls.	132
	GLOSSARY	135
	BIBLIOGRAPHY	155

List of Tables

1	TABLE 1: How Many Online	20
2	TABLE 2: How Many Online in the US	21
3	TABLE 3: Total “Home” Web Users in the US.	21
4	TABLE 4: The Volume of Online Shopping Today	27
5	TABLE 5: Consumer Advantages: Hypothesis vs. Finding	55
6	TABLE 6: Consumer Disadvantages: Hypothesis vs. Finding	67

List of Charts

1	CHART 1: Online Buyers As a % of Total American Aged 14+	21
2	CHART 2: Estimated Consumer Online Shopping Revenues for 1999	28
3	CHART 3: Net User Shopping Projections	28
4	CHART 4: Average Number of Transactions Per Online Household	29
5	CHART 5: Retail Growth Trends Online, 1999-2004	29
6	CHART 6: eCommerce Revenues in the US, 1997-2003	30

1. INTRODUCTION

1.1 Introduction

Since its inception, the Internet has become an integral part of American culture. People use it for personal communication, schools implement it in education, and now companies use it to improve their business. The Internet is currently growing at a rate of 10 percent a month and the commercial sector is growing even faster, now accounting for 75 percent of registered Internet addresses. The World Wide Web now has a strong business focus, allowing businesses to form Web pages that users can access 24 hours a day. Although some feel that the overwhelming presence of businesses on the Internet exploits the tools that the new technology provides, the commercial market also has a right to reap the benefits of this advancing technology because it improves business productivity, strengthens customer relations, and democratizes the commercial market. Ultimately, the integration of marketing techniques with the Internet will benefit both business and consumer.

By using the capabilities of the Internet, businesses can become more efficient and produce higher quality products, improving the commercial market for consumers. The Internet is a magnificent research tool and communications device. By searching through databases and discussion groups, businesses can find information on their competitors, generate new product ideas, solicit the opinions of consumers, and learn new approaches to their business. Research searches online provide faster and more up to date information than traditional research, allowing businesses to find more essential information to integrate into their products. Companies can exchange data with suppliers and test new products easily.

The Internet also improves customer relations because businesses can interact more closely with the public and understand their customers' needs (let it be social needs, psychological needs, economic needs, or even safety needs). By using the Internet resources, businesses can make larger quantities of information available to the public than they could in a traditional print medium. Instead of calling a company and waiting on hold, customers can easily access web pages with lists of commonly asked questions

and answers when they have difficulties with products. Through these web pages they can also send comments and suggestions to the company. Individuals can shop from the privacy of their own homes 24 hours per day 7 days a week without the interference of sales people. By posting important information about their products, businesses allow consumers to educate themselves about the products at their own pace. Customers can instantly access only that information pertinent to their needs.

By implementing Internet technology, businesses are improving the commercial market. They save time and money while increasing customer satisfaction and business profit. Since the Internet spans many countries throughout the world, companies are able to make an international presence for low cost. Consumers can conveniently shop and communicate with companies and businesses can advertise and research for information that would improve their products. The Internet equalizes the marketing process by eliminating the bias of money and prestige. On the Internet every business has an equal opportunity to sell their products and the companies with higher quality products and better customer service will succeed.

There are many business models on the Internet that benefit from Internet and e-commerce technologies. One of those models is cybermalls or Internet shopping malls. More than 650 cybermalls are currently present on the Internet where businesses can sell products and communicate with consumers. Cybermalls initially gained popularity among merchants as an alternative to the high price of building a Web-commerce server, which could cost \$1 million to implement as recently as two years ago. In general, Internet shoppers turn to cybermalls because they offer one of the easiest methods of searching for a particular product, service, or store. However, cybermalls also have their disadvantages. This comprehensive report about cybermalls will look into the pros and cons of participating in a cybermall (from a business perspective) and online shopping through cybermalls (from a consumer perspective). In addition, the report will provide satisfying answers to some of the frequently asked questions (FAQ) about cybermalls

1.2 Objectives

The objectives of this report are to find satisfying answers to the following questions:

- 1) How online consumers and businesses would benefit from e-commerce in general and e-tailing¹ through Internet shopping malls (cybermalls) in particular?

Approach: The report will examine how a cybermall as technology interacts with societal structures and values of the online community.

- 2) What are the advantages and disadvantages of a cybermall from a consumer perspective as well as a business perspective?

Approach: By conducting an extensive and comprehensive literature review I will be able to point out the advantages and disadvantages of a cybermall compared to stand-alone merchant Web sites.

- 3) How real are the advantages and disadvantages of a cybermall? Do consumers and businesses agree with them? Are there any differences in perception between consumers and businesses?

Approach: By investigating the literature review's set of hypothesis through conducting two cybermall surveys one from the consumer perspective and the other from the business perspective, I will be able to report on the pros and cons of a cybermall.

At the end of the report, I will be able to provide some useful commerce related information to the Web community. Such information, in my opinion, would be a great asset to many businesses who are investigating the idea of participating in a cybermall and consumers who have little or no knowledge about cybermalls.

¹ E-tailing (less frequently: *etailing*) is the selling of retail goods on the Internet. Short for "electronic retailing," and used in Internet discussions as early as 1995, the term seems an almost inevitable addition to e-mail, e-business, and e-commerce.

2. BACKGROUND: INTERNET

2.1 Defining The Internet

On October 24, 1995, the FNC unanimously passed a resolution defining the term *Internet*. This definition was developed in consultation with the leadership of the Internet and Intellectual Property Rights (IPR) Communities.

Resolution²:

"The Federal Networking Council (FNC) agrees that the following language reflects our definition of the term "Internet".

"Internet" refers to the global information system that --

- (i) is logically linked together by a globally unique address space based on the Internet Protocol (IP) or its subsequent extensions/follow-ons;
- (ii) is able to support communications using the Transmission Control Protocol/Internet Protocol (TCP/IP) suite or its subsequent extensions/follow-ons, and/or other IP-compatible protocols; and
- (iii) provides, uses or makes accessible, either publicly or privately, high level services layered on the communications and related infrastructure described herein."

In other words, the Internet is a global network of networks enabling computers of all kinds to directly and transparently communicate and share services throughout much of the world. Because the Internet is an enormously valuable, enabling capability for so many people and organizations, it also constitutes a shared global resource of information, knowledge, and means of collaboration, and cooperation among countless diverse communities.

² Source: http://www.fnc.gov/Internet_res.html

2.2 A Brief History of the Internet³

The Internet was started in 1969 under a contract let by the Advanced Research Projects Agency (ARPA) which connected four major computers at universities in the southwestern US (UCLA, Stanford Research Institute, UCSB, and the University of Utah). The contract was carried out by BBN of Cambridge, MA and went online in December 1969. By June 1970, MIT, Harvard, BBN, and Systems Development Corp (SDC) in Santa Monica, Cal. were added. By January 1971, Stanford, MIT's Lincoln Labs, Carnegie Mellon, and Case-Western Reserve University were added. In months to come, NASA/Ames, Mitre, Burroughs, RAND, and the University of Illinois plugged in. After that, there were far too many to keep listing here.

The Internet was designed in part to provide a communications network that would work even if some of the sites were destroyed by nuclear attack. If the most direct route was not available, routers would direct traffic around the network via alternate routes. The early Internet was used by computer experts, engineers, and scientists. There was nothing friendly about it. There were no home or office personal computers in those days, and anyone who used it, whether a computer professional or an engineer or scientist, had to learn to use a very complex system.

The Internet matured in the 70's as a result of the TCP/IP architecture first proposed by Bob Kahn at BBN and further developed by Kahn and Vint Cerf at Stanford and others throughout the 70's. It was adopted by the Defense Department in 1980 and universally adopted by 1983. The Unix to Unix Copy Protocol (UUCP) was invented in 1978 at Bell Labs. Usenet was started in 1979 based on UUCP. Newsgroups, which are discussion groups focusing on a topic, followed, providing a means of exchanging information throughout the world. While Usenet is not considered as part of the Internet, since it does not share the use of TCP/IP, it linked Unix systems around the world, and many Internet sites took advantage of the availability of newsgroups. It was a significant part of the community building that took place on the networks.

³ See **APPENDIX C** for an Internet Timeline by BBN (www.bbn.com)

Similarly, BITNET (Because It's Time Network) connected IBM mainframes around the educational community and the world to provide mail services beginning in 1981. Listserv software was developed for this network and later others. Gateways were developed to connect BITNET with the Internet and allowed exchange of e-mail, particularly for e-mail discussion lists. These listservs and other forms of e-mail discussion lists formed another major element in the community building that was taking place.

In 1986, the National Science Foundation funded NSFNet as a cross-country 56 Kbps backbone for the Internet. They maintained their sponsorship for nearly a decade, setting rules for its non-commercial government and research uses. As the commands for e-mail, FTP, and telnet were standardized, it became a lot easier for non-technical people to learn to use the nets. It was not easy by today's standards by any means, but it did open up use of the Internet to many more people in universities, in particular. Other departments besides the computer, physics, and engineering departments found ways to make good use of the nets--to communicate with colleagues around the world and to share files and resources. Libraries, which had been automating their catalogs went a step further and made their automated catalogs available to the world.

While the number of sites on the Internet was small, it was fairly easy to keep track of the resources of interest that were available. But as more and more universities and organizations connected, the Internet became harder and harder to track. There was more and more need for tools to index the resources that were available. The first effort to index the Internet was created in 1989, as Peter Deutsch and his crew at McGill University in Montreal, created an archiver for ftp sites, which they named Archie. This software would periodically reach out to all known openly available ftp sites, list their files, and build a searchable index of the software. The commands to search Archie were Unix commands, and it took some knowledge of Unix to use it to its full capability.

In 1991, the first friendly interface to the Internet was developed at the University of Minnesota. The University wanted to develop a simple menu system to access files and information on campus through their local network. A debate followed between

mainframe adherents and those who believed in smaller systems with client-server architecture. The mainframe adherents "won" the debate initially, but since the client-server advocates said they could put up a prototype very quickly, they were given the go-ahead to do a demonstration system. The demonstration system was called a gopher after the University of Minnesota mascot--the golden gopher. The gopher proved to be very prolific, and within a few years there were over 10,000 gophers around the world. It takes no knowledge of Unix or computer architecture to use. In a gopher system, you type or click on a number to select the menu selection you want. You can use the University of Minnesota gopher today to pick gophers from all over the World

In 1989 another significant event took place in making the nets easier to use. Tim Berners-Lee and others at the European Laboratory for Particle Physics, more popularly known as CERN, proposed a new protocol for information distribution. This protocol, which became the World Wide Web in 1991, was based on hypertext--a system of embedding links in text to link to other text. The development in 1993 of the graphical browser Mosaic by Marc Andreessen and his team at the National Center For Supercomputing Applications (NCSA) gave the protocol its big boost. Later, Andreessen moved to become the brains behind Netscape Corporation, which produced the most successful graphical type of browser and server until Microsoft declared war and developed its Microsoft Internet Explorer.

Since the Internet was initially funded by the government, it was originally limited to research, education, and government uses. Commercial uses were prohibited unless they directly served the goals of research and education. This policy continued until the early 90's, when independent commercial networks began to grow. It then became possible to route traffic across the country from one commercial site to another without passing through the government funded NSFNet Internet backbone.

Delphi was the first national commercial online service to offer Internet access to its subscribers. It opened up an email connection in July 1992 and full Internet service in November 1992. All pretenses of limitations on commercial use disappeared in May 1995 when the National Science Foundation ended its sponsorship of the Internet

backbone, and all traffic relied on commercial networks. AOL, Prodigy, and CompuServe came online. Since commercial usage was so widespread by this time and educational institutions had been paying their own way for some time, the loss of NSF funding had no appreciable effect on costs. Today, NSF funding has moved beyond supporting the backbone and higher educational institutions to building the K-12 and local public library accesses on the one hand, and the research on the massive high volume connections on the other.

Microsoft's full-scale entry into the browser, server, and Internet Service Provider market completed the major shift over to a commercially based Internet. The release of Windows 98 in June 1998 with the Microsoft browser well integrated into the desktop shows Bill Gates' determination to capitalize on the enormous growth of the Internet. Microsoft's success over the past few years has brought court challenges to their dominance.

A current trend with major implications for the future is the growth of high-speed connections. 56K modems and the providers who support them are spreading widely, but this is just a small step compared to what will follow. 56K is not fast enough to carry multimedia, such as sound and video except in low quality. But new technologies many times faster, such as cable modems, digital subscriber lines (DSL), and satellite broadcast are available in limited locations now, and will become widely available in the next few years. These technologies present problems, not just in the user's connection, but in maintaining high speed data flow reliably from source to the user. Those problems are being worked on, too.

During this period of enormous growth, businesses entering the Internet arena are scrambling to find economic models that work. Free services supported by advertising have shifted some of the direct costs away from the consumer. Many services are now offering free web pages, chat rooms, and message boards. Online sales are growing rapidly for such products as books and music CDs and computers, but the profit margins are slim when price comparisons are so easy and public trust in online security is still shaky. New business models that have worked well are portal sites that try to provide everything for everybody, and live auctions.

2.3 Internet and Society

American society's fascination with the Internet is rapidly increasing. Use of online services such as America Online, CompuServe, and many small Internet providers is growing 10% every month. From its humble origins as a simple defense computer network⁴, the Internet now approaches the forefront of technology and societal interest. Its widespread use (100+ million users by 2000) suggests that the Internet must be considered a force that will significantly impact the development of society. The media hype surrounding it suggests the "Information Superhighway" will drastically improve American lives, by serving as an electronic link between individuals, and a vast repository of instantly available information.

Many critics hold the opposing belief that the Internet will only further degrade the American lifestyle. The Internet's true effect on American society is unknown. However, the sheer size of the network, and the possibilities offered by it are sure to eventually infiltrate American society and change the way we live.

To better understand the full impact of the Internet on American society and vice versa, we must first understand the conditions that created the network. By understanding its growth from a single point, the effect society had on this technology can be examined. Furthermore, by understanding current trends in its development, the present impact of the Internet on American society can be estimated, as well as its future effects.

2.3.1 The Internet's Impact on Society

Through time, the Internet advanced from a simple 56,000 bits/sec (BPS) line speed rate to transfer rates in the millions of BPS. However, far more important in the Internet's development is its expanding number of users. Growing from just 1,000 users when ARPANET began, to over 100 million today, the Internet must be considered a serious technological force that can and will change American society. The "net" has already changed a small portion of society through the users that depend on it daily. By considering the changes that the Internet has already made, from the "virtual

⁴ See previous section.

communities" already in place, to online services available today on the web, the Internet clearly has the capability to change society. It may do so in the following ways.

2.3.2 The Changes

Individual:

First, the Internet will change society on the individual level, by changing the way we think and talk. As Neil Postman describes in *Technopoly*, the medium of communication has the power to change the way we understand information from the world around us. Through the medium the basic concepts truths and knowledge can be altered. For example, American society is becoming more and more information oriented. However, the primary source of this information, television, is constructed to give the viewer quick bursts of visual and stimulating images. While television was first hailed as a tool to surpass all other teaching tools, the information provided by television is strictly decontextualized. This decontextualization, a separation between a specific bit of information and the larger body that ties into it and makes it applicable and understandable, drastically changed the American society into one that is more focused on instantaneous gratification.

In addition, Postman makes the argument that the decontextualization of knowledge is responsible for much of the societal problems today, because an overabundance of information overwhelms and demolishes the moral codes and traditional values traditionally used by society to structure information. With a larger percentage of citizens "logged on" the medium of email and visual web pages could initiate a similar large-scale change in society. While electronic mail (e-mail) serves as an improvement in contacting individuals, there is evidence that it is being overused. For example, Stephen Talbott speaks of people boasting of how many messages they can delete from their mailboxes in a session. This overuse threatens the development of writing habits with little forethought, and of a society more focused on deleting and processing information than pondering its nuances and relevance. Similarly, the hypertext links that join web pages together and make the World Wide Web an interesting faucet of the Internet, can also make the presentation of a focused argument impossible. With several links throughout a

web page, it is very tempting to simply "surf" the web rather than analyze and focus thought on a single page.

Relationships:

Second, the Internet will change the relationships between individuals in society. Already virtual communities have drastically changed the way human beings interact. The Internet is a medium in which people can exchange thoughts, ideas, and feelings in real time through IRC or through specific newsgroups. The net result is that people online form a closely-knit society that functions very much like a real one. For example, there are many circumstances of marriages between people that met "online" as well as thousands of new acquaintances and close friends. The net result of this spiritually close, yet geographically separated community is that it satisfies all the basic qualifications of a community. A community may be considered feasible if it provides collective goods (gains) for all its members. Anyone who has been active in such a virtual community realizes that it fits the requirement. A virtual community (such as the net in Tokyo) provides a social network for its members. Through the Internet members make contacts and use these contacts to raise their social position. The virtual community also provides a vast storehouse of knowledge, because the group of users possesses diverse and in-depth knowledge of the world, since many are doctors, engineers, and scientists in "real" life (IRL).

Finally, the communities online also provide empathy and support for their members in times of need. These virtual communities will change the large-scale society of today because they offer a new way to interact and meet people. Since these communities are made up of individuals geographically separated, their discussions can be far more varied in their content and members can become more informed (than members in IRL) about the world in general. Also because users are geographically separated, many virtual communities are continuously active, ready to provide support or knowledge much faster than traditional means. The communities online differ from physical communities because each virtual member has an equal voice, and access to the same bandwidth as all others. In addition, the ability to hold discussions between hundreds of people daily is unknown in present day "real life" society. Such discussions were only common in the

town meetings of the past, and never were they continually sustained. Therefore, the virtual community represents a completely new entity to social science. Since all members of the community can post messages which all others can read, the group functions as a "group mind" (Rheingold). The advantages of this type of communication is obvious and certainly more democratic than the "one to many" broadcast messages of today. These advantages could easily change the way large-scale society is organized: politics.

2.4 Internet Today: Current Statistics

Where advances in telecommunications and computing largely occurred side-by-side in the past, today, they converge in the Internet. Soon, virtually all information technology investment will be part of interlinked communications systems, whether internal to a business, between businesses, between individuals and businesses, or individual to individual. However measured, the Internet is expanding at a very rapid pace.

The art of estimating how many are online throughout the world is an inexact one at best. Surveys abound, using all sorts of measurement parameters. However, from observing many of the published surveys over the last two years, here is 'an educated guess'⁵ as how many are online worldwide as of August 1999. And the number is 195 million.

Table 1: How Many Online*

World Total	195 million
Africa	1.72 million
Asia/Pacific	33.61 million
Europe	46.39 million
Middle East	0.88 million
USA/Canada	107.3 million
Latin America	5.29 million

Source: Various
Compiled by NUA Internet Surveys

* Methodology:

- Figures in Table 1 represents both adults and children who have accessed the Internet at least once during the 3 months prior to being surveyed.
- An Internet User represents a person with access to the Internet and is not specific to Internet Account holders. When the figure for Internet Account holders is the only information available, this figure is multiplied by a factor of 3 to give the number of Internet Users.
- The figure for 'Asia/Pacific' includes Australia and New Zealand.
- When more than one survey is available on a country's demographics, NUA will take the mean of the surveys or, in the case NUA feels that one study may be more comprehensive/reliable than the others, NUA will quote this figure over the others.

⁵ Done by NUA Internet Surveys @ <http://www.nua.ie/surveys/index.cgi>

Table 2: How Many Online in the U.S.

Date	Figures (in millions)	% Total Population	Source
July 99	106.3	39.37	**NielsenNetRatings ⁶
May 99	101	37.4	**NielsenNetRatings
April 99	95.8	35.4	**NielsenNetRatings
April 99	92	34.00	*CommerceNet/Nielsen
March 99	83	30.70	*IntelliQuest ⁷
January 99	79.4	29.30	*IntelliQuest
October 99	73	28.80	*IntelliQuest
August 98	79	29	*CommerceNet/Nielsen
February 98	62	23	*IntelliQuest
November 97	56	21	*IntelliQuest
June 97	51	19.17	*IntelliQuest
April 97	40-45	16.16	*FIND/SVP ⁸
1995	18	6.7	*CommerceNet/Nielsen

* Figure quoted are for Adult Population only (Age 16 and over). They do not include number of children online.

** The Nielsen/NetRatings Internet universe is defined as all members (2 years of age or older) of U.S. households which currently have access to the Internet.

Table 3: Total "Home" Web Users in the U.S.

Growing market

The growing number of online consumers – and the increasing percentage of those who are shopping over the Web – is a tempting market for many retailers. Internet service providers are betting that their commerce-enabled portals are the key to reaching that market.

Total home Web users in the United States		Percent who are online buyers	
1996	19,189,031	33%	
1997	30,196,581	36%	
1998	40,579,009	39%	
1999*	52,630,469	42%	
2000*	67,048,873	45%	
2001*	83,048,858	46%	

*Projections

SOURCE: INTERNATIONAL DATA CORP.

⁶ <http://www.nielsen-netratings.com>

⁷ <http://www.intelliquest.com>

⁸ <http://www.findsvp.com>

3. BACKGROUND: E-COMMERCE

3.1 Defining E-Commerce

Electronic commerce is usefully defined as:

The conduct of commerce in goods and services, with the assistance of telecommunications and telecommunications-based tools

'Electronic commerce' (EC) is an integrative concept, designed to draw together a wide range of business support services, including inter-organizational e-mail; directories; trading support systems for commodities, products, customized products and custom-built goods and services; ordering and logistic support systems; settlement support systems; and management information and statistical reporting systems.

Some people use the more restrictive terms 'electronic trading' and 'electronic markets', and others use broader terms such as 'electronic business'. Some people also restrict the scope of EC to procurement; but it's more usefully conceived much more broadly, to include any kind of business-related transaction conducted with the assistance of electronic tools.

3.1.1 Categories of electronic commerce

E-commerce will comprise transactions between parties in four different relationship settings:

- **Business-business**

Transactions include ordering, invoicing and making payments and are already being used in Just-In-Time (JIT) inventory systems and EDI.

- **Business-consumer**

This is a booming category with the increasing popularity of online shopping and electronic retailing (e-tailing).

- **Business-administration**

This category is relatively underdeveloped but has great potential for tax and custom duty, and government tender and procurement purposes.

- **Consumer-administration**

This has yet to be established but transactions may include welfare payment and personal income tax assessments.

E-tailing and e-shopping through cybermalls, as examples for the “business-consumer” model, are the focus of this report and therefore the next chapter (chapter 4) will be devoted to cybermalls.

3.2 Advantages of E-Commerce

E-commerce offers many, many opportunities for suppliers and many more benefits for customers.

3.2.1 Opportunities for suppliers

- **Worldwide presence**

Any business concern will be able to address not only a local audience but a global one at the same time, and market its products globally without cost or capital restraints. The option of selling to the world now comes without having to leave home soil.

- **Increased competitiveness**

Besides the obvious cost advantage of using the electronic media, businesses will also be able to better identify and satisfy its customers' needs as well as be able to provide customers with closer pre- and post-sales support, more product information, prompter response to customer inquiries, and better guidance on how to use its products.

- **Customization and customer-responsiveness**

E-commerce allows a business to cater for the differing needs of each individual customer. Businesses will be able to offer exact, customized products to each of its customers at regular prices. On-line magazines are an example where customized content is delivered to each of its subscribers.

- **Shorter value chains**

E-commerce supports and facilitates the running of whole businesses and their

respective value chains electronically. Since transactions are done electronically, unnecessary and redundant members of the value chain may be eliminated which will drive down lead times, ordering costs and response time.

- **Cost savings**

The usage of cost-effective electronic media in e-commerce reduces transaction costs. Other opportunities such as shorter value chains that result from the use of e-commerce contribute to further cost reductions and increase profitability.

- **Business opportunities**

E-commerce creates the opportunity for new products and services such as network supply and support services, directory services, contact services and other on-line information services.

3.2.2 Benefits to customers

- **Worldwide choice**

Through e-commerce a customer can search for products and services, or browse through the offerings of any supplier anywhere in the world who has also adopted e-commerce. Besides the unprecedented choice available to a customer, an added convenience is that such shopping can occur, without leaving the home or office, and at anytime.

- **Improved quality of service**

E-commerce draws the supplier closer to the customer and allows him to better understand each customer's need. Therefore a customer making a purchase or seeking for services through e-commerce can expect to receive better quality service.

- **Personalized products and services**

A customer can ask for and receive a product or service customized to his or her liking every time.

- **Prompt response**

Since transactions are done over electronic media therefore a customer can expect faster response from the supplier involved. Delivery snags and delays can be

reduced tremendously. With lead time being shortened, uncertainty over demand will be reduced together with the need to hold precautionary levels of inventory.

- **Lower prices**

E-commerce tends to streamline organizations or value chains so that there is greater efficiency, prompter responsiveness and no redundancy. These benefits translate to a broad reduction of costs, which will in turn lead to lower prices for customers.

- **New products and services**

A new way of doing business brings with it a whole new range of products and services that were previously not available. Customers can now obtain, among others, information, music, virtual cards and flowers on-line..

3.3 Disadvantages of E-Commerce

It's not as easy to see the disadvantages of e-commerce, except the most obvious one: the time and expense of setting up and maintaining an e-commerce venture can suck away resources that otherwise might go towards more lucrative endeavors. After all, there is no guarantee that a cyberstore will offer a net return.

Also, the simple act of putting a store on the Web can create competition with a retailer's own distribution channels unless he carefully integrates his efforts with an overall business strategy. In fact, once a retailer starts thinking about developing his business using e-commerce as a medium, he may need to reconsider his entire business plan, reinventing his organization as an e-centric endeavor. This "disadvantage," however, might turn out to be an advantage.

It is essential to remember, too, that once a retailer's store is on the Internet, his competitors will have access to everything he offers to his customers. That's not necessarily a reason to staying away from e-commerce, but it is something to think about. One important point to keep in mind is that if a business is not doing well, it won't necessarily be saved by setting up a store on the Internet. Starting a cyberstore and hoping that the orders will roll in is like opening a store on any street and hoping

customers will wander in. Creating visibility is required no matter where a store is located

3.4 The Impact of E-Commerce

E-commerce is already in existence and will further increase with the use of the Internet, the World Wide Web and EDI.

As such, its impact on corporations and society will be increasingly felt and seen:

- **Corporations**

The possibility that customer expectations may be changed resulting in redefined or altogether new markets means that e-commerce represents a strategic inflection point for corporations. For early adopters it will be seen as an opportunity, for lagers it is a threat. E-commerce has the potential to redistribute both market share and corporate wealth, and make or break fortunes.

- **Society**

Society will benefit from the increased scope and ease of access to information, products and services, and the means of acquiring them. Previous hindrances such as time and geographical limitations will cease to be and society will have unprecedented choice over these commodities.

3.5 E-Commerce Today: Current Statistics⁹

What's the volume of online shopping today?

eStats¹⁰ estimates that 65% of current net users have used the web to "shop around" online. They define "shopping" here as checking out products and services and comparing prices, prior to a purchase decision. However, only 14% of net users have actually purchased anything online. Fewer still have used their credit card.

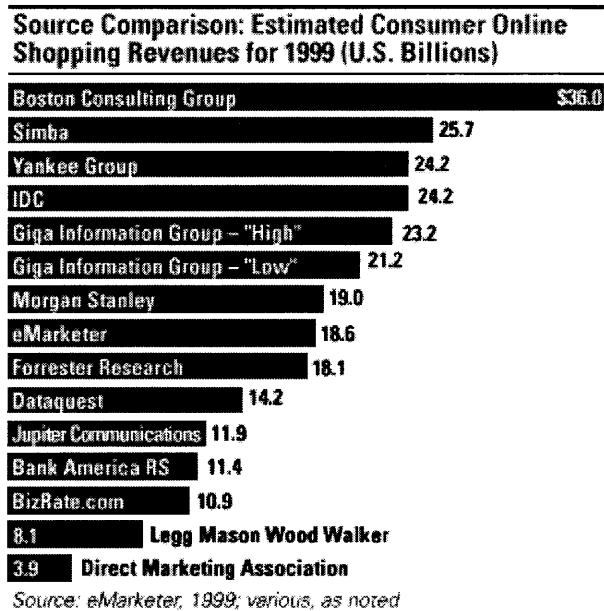
Table 4

Source	Percentage and Definition of "Shopping"
CommerceNet/Nielsen	<ul style="list-style-type: none"> • 73% of net users have used the web for shopping • 53% have used the net to reach a decision about a particular purchase • Only 15% (2.5 mil) of net users have actually carried out a final transaction on the web
AT&T & Odyssey	<ul style="list-style-type: none"> • 7% of consumers have purchased anything online
Computer Intelligence Survey	<ul style="list-style-type: none"> • 21% of total web users (2.7 million) have used the net to shop
Ad Age/Market Facts	<ul style="list-style-type: none"> • 14.9% of online users have shopped online
Yankelovich Partners, Inc.	<ul style="list-style-type: none"> • 44% of online users say they have shopped for products on the web • Only 39% of online "shoppers" actually ordered something • Only 23% actually provided credit card numbers online
Deloitte & Touche	<ul style="list-style-type: none"> • Only 3% of U.S. consumers make purchases on the net

source: eStats

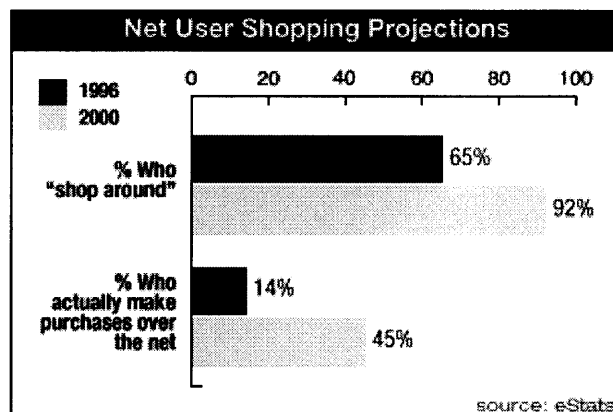
⁹ Sources: www.idg.net; www.techweb.com; www.netguide.com; www.brint.com; www.nbn.com;

¹⁰ www.eStats.com

Chart 2

How Many Consumers Will Shop Online Tomorrow?

By the year 2000, eStats projects that 92% of net users will do some "shopping around" online and another 45% will actually make purchases. This growth will result from increased security as well as a psychological boost in trust, familiarity and overall ease with online technology.

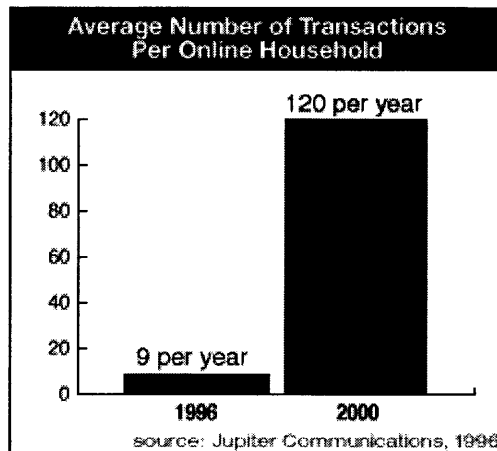
Chart 3

International Data Corp

- By the year 2000, 46 million consumers in America will be buying online

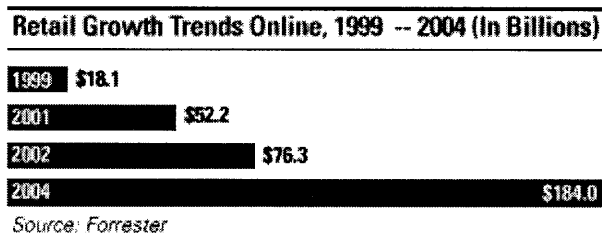
Microsoft (John Neilson, Interactive Services Division)

- "It will take 30 years before 30% of consumer activity takes place online"

Chart 4

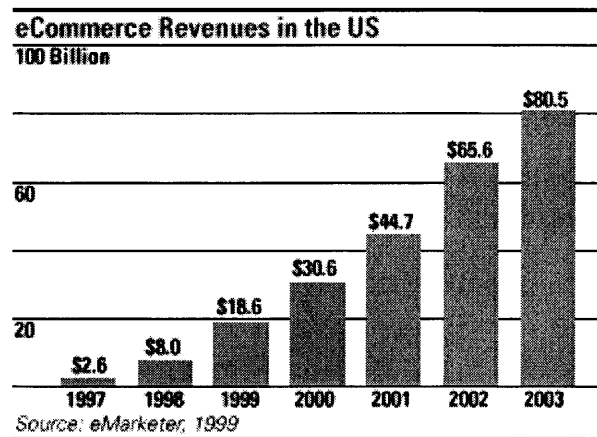
Forrester Research expects U.S. online retail sales will hit \$184 billion by 2004 (**Chart 5**). This represents near astronomical growth from their current year estimate of \$20.2 billion. During this period Forrester expects the current 17 million U.S. households online will grow to 49 million by 2004. More than simple user growth, however, will be responsible for generating new levels of online retail revenue. By 2004, retailers will be making the most out of consumer information gleaned from their customers.

Forrester sees this as a "post-web era" in which retailers will aggressively target customer segments, selling all relevant products and services through both online and offline channels. As the chart of Forrester's estimate demonstrates, this rapid growth won't kick in until after 2002. At that point, revenues more than double in a two year period.

Chart 5

eMarketer notes that its own estimates (**Chart 6**) for the current year's online revenues of \$18.6 billion is very close to Forrester's and stays fairly close through 2002.

Chart 6



What are the factors likely to impact the growth of online shopping?

Major factors driving consumers online include:

- Strong, clearly recognizable brands beginning to sell their products online
- A feeling on the part of consumers of wanting to be "in on the action"
- Improved, more compelling content, often backed with aggressive, "guerrilla" off-line marketing campaigns that drive traffic to online offerings
- The exponential growth of online communities, including chat rooms, where users are able to interact with one another on topics of specific interest to them

Plus, there are a number of factors directly related to dissatisfaction with current shopping channels, including:

- Unattractive stores
- Indifferent, even rude, sales help
- Insufficient product knowledge of inexperienced staff
- Stores that lack clear market differentiation
- A feeling that limited leisure time could be better spent elsewhere.

What are the current best sellers online?

According to Forrester, the current best sellers online are computer hardware and software, followed by books and music/CDs, information, and flowers. Rounding out the list are gifts, travel services, and movie and event tickets. More and more varied merchandise is also starting to be sold through online auctions.

What are the hot categories to watch?

Hot consumer products sold online include office supplies, sporting goods, personal care products for women, toys and games, electronics, supermarket goods, home improvement products, products for hobbyists, and home furnishings.

How much does the average online shopper spend?

The average online shopper spends approximately \$350 annually online, with most of this spending going for items in the under \$50 classification, and much of this even under the \$10 mark (IDC). However, some fluctuation--most likely in an upward direction--can be expected as online merchandising classifications expand and price points show more variation.

How many truly transactional retail sites exist today and are they profitable?

Only about 9 percent of the sites that claim to offer online shopping are truly transactional today (IDC). Overall, according to e-commerce researcher ActivMedia, less than 30 percent of online retailers are currently making money--with the lack of a full transactional capability likely being one of the deterrents.

What is the level of commitment of traditional retailers to online retailing?

Of the 182 general merchandise retailers researched by the e-tailing group, inc., only 36 percent have established a Web site presence or online image and just 15 percent are actually transacting commerce (Forrester). However, the recent launch of e-commerce efforts by Macy's and The Gap, to name just two examples, along with the continuing expansion of both the Wal-Mart and JC Penney sites, are helping to legitimize online as a credible shopping channel.

Why are retailers moving so slowly toward e-commerce?

Reasons for retailers' hesitancy include:

- A stubborn belief that their customers will not shop online
- Lack of knowledge about and belief in the present and potential buying power of the online consumer
- Fears that the technology demands of selling online will become overwhelming, and especially in relation to integration with legacy systems
- Insufficient or no fulfillment structure in place to handle online orders
- Other management priorities that push the world of interactivity far down on the "to do" list
- Perceived lack of confidence by their customers in the security of making financial transactions online
- Realization that a long-term outlook is needed when it comes to projecting profitability (hard to achieve in most companies), coupled with fears that building and maintenance costs required may not be the company's wisest investment option
- Perception that transformation from a traditional retailer to an e-commerce ready company (ECR) can be a long, involved, and expensive process
- Lack of understanding of the customer service requirements of being a direct merchant

Are catalogers using the Internet mainly for selling products or for varying functions?

Over 54 percent of the top 100 catalogers (as ranked by Catalog Age) remain leery of committing to a true e-tailing initiative--and that's despite a number of obvious benefits of being online such as:

- The ability to establish ongoing interactive relationships with customers

- Real-time merchandising that allows hot items to be offered immediately and out-of-stock merchandise to be deleted, without the hold-up of long catalog production times
- Unlimited pages with the costs of adding items becoming negligible once the site is up and running
- Pricing and promotion flexibility, including being able to act quickly to spur sales of slow moving merchandise
- Generation of incremental business by reaching customers who previously may not have been exposed to the catalog

A little under 50 percent of the catalogers are finding the Web to be an ideal place for garnering catalog requests (Catalog Age). Many are converting their leads at a more rapid rate, often finding a customer with a higher average order down the road. Quick shop functionality offered by 5 percent of these catalogers is starting to be used by direct marketers who are hoping to convert some of their phone and mail business to online to save money and time.

Are virtual retailers--the real pioneers in e-commerce-starting to lose their edge?

So far, despite the onslaught of competition from traditional retailers and already-recognizable brands in some of their category strongholds such as books, music, and travel, virtual retailers seem to be more than holding their own. However, the biggest challenges facing them are how to create and maintain a distinctive online brand and how to reassure customers that there is indeed a real company standing behind that cyber-storefront.

Which of the branded manufacturers are starting to build an online presence?

In general, more branded manufacturers are looking at the Web as an important marketing medium, but few have as yet committed to selling their products online (Forrester). This is especially true among the top 100 apparel brands (as ranked by Women's Wear Daily). One of the major challenges these manufacturers face in deciding whether or not to go customer direct is whether they can do so without disrupting their

relationships with traditional channels of distribution. Eventually, though, they may have no choice, as companies with sites already up are finding that their customers are becoming vociferous in their demands for online commerce.

Some of the Top 100 apparel brands (as ranked by Fairchild Publications) who have already taken the plunge are Dooney & Bourke, L'eggs, Hanes, Teva Sport, Fossil, and Timex all of whom are actually selling merchandise on their sites. More typical, though, is the tactic of a company like Levi's which, having already established several strong Web outposts, has yet to commit to online selling.

Making that commitment is obviously easier for vertical, branded operations like The Gap which just launched its shopping site, or companies like J.C. Penney which sells its own popular private labels such as Arizona Jean Co., Worthington, St. John's Bay, and Hunt Club online.

What role are the online services, such as AOL and Microsoft Network, playing in the e-tailing arena?

The online services are continuing to play a major role in the growth of e-tailing, acting aggressively to persuade more would-be merchants of the worth of selling online, while helping already committed merchants to turn this into a viable business. In particular, AOL's recent re-positioning of its "Marketplace" into the "Shopping Channel" has helped focus attention on online shopping, as are the continuing efforts by MSN, Prodigy, and the new C from CompuServe to make content more compelling and shopping more integral to the entire online experience. However, it remains to be seen whether more of these online providers will be serving primarily as a conduit for merchants to draw customers into their own Internet sites, and how financial arrangements will have to be redone accordingly.

AOL continues to hold the dominant position among online services, garnering up to \$350,000 per merchant for those that sign up for anchor tenant positions on its Shopping Channel while asking \$1 million for their aol.com offering.

What can merchants do to win online?

Along with the development and execution of a strong plan, merchants can improve their chances for online success if they:

- Create a homepage that conveys a clear, consistent message regarding the company, its merchandise, and its "in-store" activities.
- Promote ease of navigation, making it simple for customers to shop the store and find the items they want.
- Understand what point-and-click technology is all about -- and make it work.
- Offer sharp pricing--although it doesn't have to be rock bottom.
- Schedule regular sales promotions.
- Invest in "displays" of impulse merchandise and change them as often as budgets will permit.
- Incorporate "value-added" services, like gift reminders and address finders to stimulate repeat purchases.
- Make the entire shopping experience fun and fast.
- Narrowcast and target specific market niches in sync with online demographics.
- Provide superior customer service that exceeds the customers' expectations.
- Make "need to know" information readily accessible.
- Clearly articulate return policies and other product guarantees.
- Facilitate rapid checkout through storing of customer profiles and buying histories and include features such as wallets that add to ease of purchasing.
- Drive traffic to the site through online advertising, testing the placement of embedded products within banner advertising on targeted sites that drive shoppers directly to the product rather than to the homepage.

Will community be a driving force behind successful e-commerce ventures?

Communities are increasing their online populations and e-commerce is slowly, but surely, starting to be integrated onto those sites. Shopping can often be an enhancement to the total community experience, particularly in locations where consumers gather to share similar interests. In these cases, it's less likely that shopping will be seen as an intrusion, but more as a value-added benefit of being a cyber-citizen (IDC).

What are the essential features of an online store?

According to ZDNet.com, at the very least, an effective Web store needs to include:

- Merchant-oriented point of view that mirrors or enhances the retailer's already established image
- Product showcase
- Retail store locator
- Company mission or philosophy statement, plus company contact information
- Relevant, compelling content for community building purposes
- Information about specific merchandise category trends
- Communication capabilities with users either via bulletin boards or two-way e-mail customer service

What are the future online best sellers?

According to Forrester, hot categories to watch include:

- Personal care products, which particularly appeal to an aging population
- Sports and music-related theme merchandise that changes often and is only available for a "limited time"
- Lingerie and daywear
- Health and nutrition-related products

- Men's furnishings
- China, glass, silverware, and other patterned set products where there is an opportunity to develop an ongoing relationship with consumers
- Self-designed home furnishing products such as bedding ensembles and window treatments
- Auto repair and home repair products

Which types of retailers will be most impacted by the growth of online shopping?

Retailers who are likely to be impacted most are those selling products in the "middle range." Consumers will continue to go to brick and mortar stores that sell higher-end merchandise (especially apparel) and unique or unusual products. They will also continue to seek out stores like membership warehouse clubs where the appeal isn't only low prices but also the fact that they never know exactly what they are going to find there.

Is there any rush in getting a store online?

E-tailing requires operational shifts as well as new approaches to marketing, and these take time to implement. But strategic alliances and partnerships are also critically important components of success, and these will be forged by those who get there first.

4. CYBERMALLS

4.1 The Internet As Cybermall

The very qualities that once attracted shoppers to malls -- climate-controlled comfort, lack of parking problems, and lots of choices under one roof -- are now luring them away from the malls and onto the Internet.

A growing cadre of consumers are now letting their fingers do the shopping, via mouse and keyboard. Scores of stores have taken heed, posting on-line shopping sites, but for malls, the rise of shopping on the World Wide Web poses a different challenge: While individual stores can sell merchandise either on-line or at their store, malls that don't draw shoppers into their vast lots are missing out. Moreover, some large malls such as Mall of America¹¹ realize the potential threats as well as the opportunities that the Web has. Therefore, those malls, too, start having their own websites on the Internet to generate more revenues.

Internet shopping permits both buyer and seller to conduct detailed research -- the customer on products, the retailer on the customer. Many Internet analysts believe that the Web is a way to get products -- and good quality products -- without having to walk into a store.

The Internet can be a way to reclaim the "I-hate-shopping shoppers," said Lauren Freedman, president of the e-tailing group, a Chicago consulting company that helps retailers launch on-line shopping sites (Source: ZDNet.com). "Mall traffic is down," she said. "To me, it's a way to probably bring back some traffic."

Many people won't actually use the Internet to make purchases. "Over half the people on-line are going to preview products," she said. "People are still going to need to go into a store, they're still going to want to go into a store, to look, to see, to feel what they're buying," Rucker said.

¹¹ <http://www.mallofamerica.com>

In the next sections of this chapter, I will be looking into and exploring the Internet as a colossal cybermall that consists of many individual cyberstores as well as cybermalls. For the purpose of this report, only cybermalls, not individual cyberstores, will be defined and investigated in order to point out the pros and cons of a cybermall. The following section 4.2 of this chapter will give a definition for cybermalls and identify their purpose as an application of e-commerce. Section 4.3 will give us some premium examples of cybermalls and the way they conduct their businesses on the Web. Later, in section 4.4, I will point out the advantages and disadvantages for shopping (from a consumer perspective) and e-tailing (from a business perspective) through cybermalls. Finally, section 4.5 will provide both consumers and businesses with some initial observations and recommendations that I hope they find useful and efficient.

4.2 Defining Cybermalls

One way that users of the World Wide Web find sites they like is by browsing cybermalls. Like regular malls, these cybermalls are large Web sites where several online shops are gathered together. Usually the sites have something in common (a standardized environment)--the same type of product or service or the same geographic location. Visitors to the online version of a mall will find either lists of the shops in the mall or icons representing each shop. Clicking on the name of the store or the icon links immediately to the shop. Other terms for cybermalls are virtual malls, Internet shopping malls/centers, Web malls, and online malls.

Cybermalls have some similarities to search indexes or utilities, in that you can easily search for other websites. The major difference is that cybermalls only have selected types of listings. Usually, they are only businesses that supply products or services. Some serve regional areas, but most are nation or worldwide listings.

In general there are three types of Internet malls. The first type of Internet malls simply links to outside websites at no cost or for a small fee. If you are going to be affiliated with a mall, this is the best type.

The second type of Internet malls acts like a landlord and a construction company. They take your information, create a website (storefront), and host it on their servers. You pay

a substantial fee up front and a monthly fee for each page you have. This can become expensive over a long period of time.

The third type of Internet malls does not even sell websites directly. Such malls sell business opportunities. The owner(s) of the mall or some representatives travel the country putting on seminars that teach you how to be a representative for the mall. These representatives buy into the program for a few thousand dollars and are trained for one weekend to sell Internet mall sites.

The first two types of malls are cybermalls that are not in the business of selling Internet services or websites. They are landlords. They are simply renting you a space. They make their money by producing 'canned' websites, selling seminars and selling advertising. They attract you to their mall by telling you how much traffic they get or how many "hits" they receive. They use contests and advertisements to bring traffic to their mall. Other times, they will tell you about how you will be getting your message to more than 50 million people, but none of that does any good if people don't know you exist.

In Europe the classification of the cybermalls only contains two different types. First of all there are the stores, comparable with the department stores we know, where different products are shown to the customer, mostly with an elaborated description and drawings or pictures. By clicking the products of your choice, they are automatically added to your order. Obviously you can delete these products afterwards if you change your mind, or when you see the account. This point can be very dangerous, because clicking away the order-form can cost you a little fortune.

A second form is the "shopping center" where the customers visit several shops. These websites are properly speaking only service hatches for other websites (shops). Sometimes the customer can get an E-mail-or an FTP-address to order or to download a catalogue.

4.3 Premium Examples: iMall.com, iQVC.com, and Spree.com

iMall.com¹²: iMALL, Inc. (Nasdaq: IMAL), a leader in electronic commerce services provides businesses with the fastest, most complete process to build a virtual store on the web. iMALL's e-commerce tools and services allow customers to create web sites or enhance existing ones, establish a merchant bank account online, deliver shopping services to customers, drive traffic to their business and process customer orders. iMALL also offers merchants sophisticated electronic payment gateway services through its recent acquisition of Pure Payments, Inc.

iQVC.com¹³: QVC, Inc. was founded in 1986 by Joseph Segel, founder of The Franklin Mint, and the company established a new record in American business history for first full-fiscal-year sales by a new public company, with revenues of over \$112 million. By 1993, QVC had become the number one televised shopping service in sales, profits, and reputation in the United States, reaching over 80% of all U.S. cable homes and 3 million satellite dishes. In 1997, more than 56 million packages were shipped to customers as a result of some 84 million phone calls, leading to over \$2.0 billion in sales. QVC is the world's preeminent electronic retailer. A virtual shopping mall that never closes--QVC is a place where customers can, and do, shop at any hour--at the rate of two customers per second. Themed programs are telecast live 24 hours a day, seven days a week, to over 64 million households in the United States.

Spree.com¹⁴: Spree.com offers what's called SIP Program, which offers cash commissions, special promotions, and a free website for members, special discounts, plus tons of products and services.

Note: Additional information on premium cybermalls can be found in Appendix D at the end of this report

¹² <http://www.imallinc.com>

¹³ <http://www.iqvc.com>

¹⁴ <http://www.spree.com>

4.4 Advantages and Disadvantages

Cybermalls offer advantages to a new on-line merchant:

- A standard environment for setting up the catalogue and arranging payment.
- Someone else is arranging for promotion of the mall as a whole.
- For countries where the payment processing has historically been a problem, it has meant a trouble-free credit card collection mechanism.

However these benefits have not generally materialized. Malls work in the real world because there is something that attracts visitors, generally a large department store. Once visitors arrive, park their cars and start shopping, it is convenient for them to shop at other merchants in that same locality. The Internet is not like this. It is as easy to visit another shop anywhere in the world as the 'next' shop in a virtual/cybermall. People shopping for books are going to search for book sites. If they browse, it is the list of matches to their requirements from a search engine, not an on-line shopping mall.

From the infrastructure point of view, catalogue software and payment processing is now more widely available. Many merchants who started out in a shopping mall have graduated to a stand-alone site.

4.4.1 Consumer Perspective

ADVANTAGES

Real-time Interactivity:

Shoppers can search, browse, and compare products and services from different stores simultaneously.

More Convenience:

Shoppers follow a series of category links to narrow down their browsing. For example, a shopper looking for a bookcase selects the "Home & Family" department, then follows the "Furniture & Accessories" heading and clicks "Bookcases" to see all bookcases offered for sale.

More Security; Secure Payment Processing

Most cybermalls run on a web server that supports the Secure Socket Layer (SSL) encryption protocol¹⁵. This protects credit card transaction information between a seller and his customers. Shoppers who use a browser supporting the SSL protocol can shop with confidence.

Faster Customer Service.

Since a cybermall takes care of the Internet operations, sellers are able to respond and meet customers' needs and expectations faster in a more reliable fashion.

Personalization

Some cybermalls tailor their Web sites' content, including advertising, to a specific individual, usually based on demographic information that they have supplied to the site. A shopper could find such 'tailoring' or personalization useful and friendly.

¹⁵ Visit <http://www2.inforamp.net/iramp/inforamp/business/money.html> to discover the Web payment mechanisms that are currently in place and judge their pros and cons for yourself

More Discounts and Better Deals.

Shoppers could find low-priced products or services since a cybermall is a highly competitive environment.

DISADVANTAGES**Uncertainty and Hesitance**

More time to decide on a product or a service. A cybermall's experience is more suitable for a savvy shopper.

Feeling of Insecurity

Some shoppers might feel insecure during the transmission of their credit card data.

More Purchasing and Spending

Shoppers can spend more money by browsing different categories and finding unnecessary but attractive deals.

Registration

Some cybermalls could ask shoppers/users to enter their credentials into their databases for subsequent authentication.

Search Engines, Web Directories, and Portals

Internet search engines¹⁶ such as AltaVista.com, WebCrawler.com and Web directories¹⁷ such as Yahoo.com, Infoseek.com, Excite.com, and Lycos.com and Portal Sites (Portals)¹⁸ are better tools to find, locate, and search for a product or service on the Web.

¹⁶ A "robot" or "crawler" that goes to every page or representative pages on a Web site, or the whole Web, and creates an index; or, a program that receives your search request, compares it to the entries in the index, and returns results to you

¹⁷ On the World Wide Web, a directory is a subject guide, typically organized by major topics and subtopics. The best-known directory is the one at Yahoo (<http://www.yahoo.com>).

¹⁸ *Portal* is a new term, generally synonymous with *gateway*, for a World Wide Web site that is or proposes to be a major starting site for users when they get connected to the Web or that users tend to visit as an anchor site. In July 1998, leading portals included Yahoo, Excite, Netscape, Lycos, CNet, and Microsoft Network (MSN). With its own private array of sites when you dial in, America Online (AOL) could be thought of as a portal to its own Web portal at AOL.com. A number of large access providers offer portals to the Web for their own users. Most portals have adopted the Yahoo style of content categories with a text-intensive, faster loading page that visitors will find easy to use and to return to. Companies with portal sites have attracted much stock market investor interest because portals are viewed as able to command large audiences and numbers of advertising viewers.

Such tools are more effective than cybermalls because they enable Web browsers to find whatever they are looking for by keyword. However, this is not the main reason since virtually all cybermalls have their own search engines and merchant directories. Stand-alone search engines, web directories, and portals are better choices for consumers because they have much bigger databases and are updated much more frequently.

4.4.2 Business Perspective

ADVANTAGES

More Exposure and Traffic

Most cybermalls have an "anchor site," just as in a real mall, so other shops benefit from the traffic the anchor site attracts. The online malls advertise to draw visitors, which boosts traffic for small shops with limited advertising budgets. In addition, cybermalls can draw customers to any one of the many products at the sites, and then customers might find a retailer! If the mall is well designed and easy to use, customers will return to that site when they are looking for similar products.

More Efficient and Effective Customer Service

A cybermall could help a business deliver information more quickly and efficiently and make ordering and purchasing more convenient and cost-effective.

Lower Sales and Marketing Costs

New Sales Opportunities

A cybermall could help its participating sites create a new sales channel, expand into a new market (if possible), and gain incremental revenue.

More Options and Services

A cybermall can easily add e-commerce functionality to a seller's existing site. Shoppers order products from his web site and never know that the orders are processed on a cybermall's servers. A cybermall's tools simplify the process of adding online credit card transactions to a seller's site because they contain ready-to-use technology that requires no upkeep on his part. In addition, a cybermall takes care of the credit card transaction process so the seller can focus on filling customer orders.

More Product Promotion

A cybermall connects online shoppers with larger online stores and smaller shops at the same time. A cybermall allows sellers to list their individual products in a cybermall's database so that shoppers can find the products they want. When shoppers find a seller's product listed in the database and want more information, they jump to the seller's site.

Equal Opportunity

While the biggest names in retailing are establishing a presence on the Internet, stores of all sizes have nearly equal opportunities to attract customers and expand their business. With a cybermall's fast and easy-to-use store design tools and product-centered searching, all merchants have an opportunity for e-commerce exposure. For example, if a shopper is looking for camping equipment and types "tents" in the product search, ALL stores that offer tents have their products listed in the search results.

Extra Help

If a seller is not ready to maintain a web site, but he wants his company on the web, a cybermall can help him build a web site using a variety of web tools such as shopping cart ordering, product searches or other new web techniques at a low or affordable cost.

More Security

Most cybermalls run on a web server that supports the Secure Socket Layer (SSL) encryption protocol. This protects credit card transaction information between a seller and his customers. Shoppers who use a browser supporting the SSL protocol can shop with confidence.

Tracking

Some cybermalls offer tracking services so a business can see where visitors came from and how much money visitors from each source spent. A cybermall can even show what they were searching for in search engines, and how much people searching for each phrase spent. A participating business can also see statistics including page views, visits, sales volume, and conversion rate, for any time period, in graphs generated on the fly.

Compensation (*Spree.com only*)

A seller is eligible to earn a commission whenever he or someone he referred comes to Spree.com directly or through a seller's Web site and purchases a product (whether it's the first or 4,365th purchase). More benefits for becoming a *Spree Independent Partner (SIP)* are:

- Cash-Back every time you shop
- Cash Commissions on referred purchases
- A Free unlimited-space Web site
- A Free email reminder service
- Great discounts and promotions

DISADVANTAGES**More Monthly Fees and Expenses**

Most cybermalls charge an additional fee for their services and partnership. In addition, some cybermalls take a percentage slice of a participating Web site's monthly income.

More Competition

A cybermall is a very competitive environment with many competitive stores that offer similar products. Lower prices are the main way to cut competition.

Heavy Traffic

A seller sometimes might not be able to handle a lot of traffic or business transactions. His products could run out of stock if the demand on them exceeds the supply.

More Procedures and Obligations

A seller needs an Internet merchant application to process credit card orders. In addition, he might end up having some obligations toward the mall and its policies of operation. Such policies and guidelines could affect the norms of a business and its operations.

No Control over Neighboring Sites

A business participating in a cybermall might not have control over other sites participating in the same mall. It is true that those sites could bring more traffic to the

business and turn out to be very helpful, but it also is true that they could be harmful and might have a negative impact on the sales and business operations of the business.

Less Independence

A company that locates itself in a mall gives up a certain amount of independence: its success depends as much on the popularity of the entire package of stores as it does on its own efforts. In addition, a bad overall layout of a mall could have negative impact on consumers, which would result into bad image for the participating shops, although, some stores might have well designed Web sites and easy-to-use navigation.

Built-in Central Purchasing System

Since purchasing is controlled centrally, a participating business may not even be able to find out his customers' e-mail addresses to contact them later.

Search Engines, Web Directories, and Portals

Although industry analysts at first expected malls to dominate the Web as it became more crowded with sites, this hasn't happened. That's mostly because of the emergence of the search engines, web directories, and portals. A stand-alone search engine, web directory, or a portal is a much better marketing tool than a cybermall since it has larger audiences. In addition, many search engines and web directories are quite famous that many surfers, like myself, prefer to use them more frequently. I even have Yahoo! as my browser's start-up homepage¹⁹.

Restriction on Promoting non-Spree Products (*Spree.com only*)

A seller's free Web site cannot be used to sell or promote products or services that compete with those being offered by Spree.com

¹⁹ To do that, go under *Internet Options* (IE 4.x) or *Preferences* (Netscape Navigator 4.x).

4.5 The Future of Cybermalls

Amazon (Amazon.com) just opened a mini-cybermall (October 1, 1999). Or did it? Amazon's cybermall, called zShops²⁰, is a lot like Yahoo's cybermall, and then some. The difference? According to Amazon CEO Jeff Bezos Amazon will, "under certain circumstances," reimburse customers for purchases made from merchants who participate in the mini-mall.

Many Web analysts and reports predicting that the online mall is dead. As early as July 25, 1997, Forrester published "R.I.P. On-line Malls --Long Live the On-line Shopping Guides." However, just last month Forrester published its report about where to put your Christmas money ("Shop@AOL: The Portal Of Christmas Present"), and the conclusion was that online shopping guides, such as Yahoo!, were almost universally a losing proposition for merchants. America On Line (AOL) was the only online shopping guide worth a business's advertising dollars.

Analog Analogy

Where do you prefer to shop in the analog world (if you're still doing that)? Malls? No. Department stores? More than likely. The difference? Both sell women's clothes, men's clothes, scented soaps, sheets, china, possibly even tires, but in a mall, you have a different interface for each merchant. The ever-important customer service culture at each mall merchant is different: return policies, privacy policies, gift-wrapping services and incentive programs differ from store to store.

The bottom line with malls is that every time you shop from a new merchant, there's mental overhead associated with it. You are experimenting. Taking risks. What if the tennis socks I just bought lose their elasticity in the wash? Will they take them back without question? Should I bother to purchase from a mall merchant, or just pick them up from J.C. Penney's on the way back to my car? I know Penney's will take them, if there's a problem, which I know there won't be, because I am confident of their service.

²⁰ For more story refer to "A Flea Market for Webheads: Amazon opens its doors to all in a bold 'E-tailing' experiment," (1999), *U.S. News & World Report* (October 11), 50-52.

How can merchants take advantage of customers' good will and loyalty towards department stores? Cybermall operators need to become *online department stores* and merchants in the cybermalls need to become *departments*. Cybermall operators need to have more than a vendor relationship with their merchants. Instead of mall operators accepting all comers, selling them some exposure and shopping cart services, department stores need to be selling merchants the right to provide products and services for a given department in their own store.

The consequence: merchants are at the mercy of one return policy, one privacy policy, one shopping cart, one interface, and one 800/online customer-support center.

The benefits to the online consumer are clear: one transaction and one bill, having to divulge personal information only once, and increased confidence in each department based on the trust customers have placed in the department store. Of course, the department store needs to build and foster that trust through a clean, friendly interface, posted security and privacy policies, and those other ever-important intangibles that create the impression that the department store cares about customers. Ultimately, an online department store will only be as successful as the traffic it can generate.

The concept of a department store will require an ego adjustment on the part of some of the merchants that have been "departmentalized." However, they will eventually need to ask themselves which is more important: high traffic and sales, or having their own stores that collect virtual dust. Virtually, all merchants need the traffic that online department stores can provide.

So how does this all tie into Amazon? Amazon has taken the first step away from the mall toward the department store: unified returns policy ("under certain circumstances"--whatever that means). The key to making this work for Amazon and other cybermalls that should be in the department store business is a close relationship with the merchants. The answer isn't 1000 merchants in the cybermall, but 100 who adhere to all the unified policies and have the technology infrastructure to fulfill orders that mall operators take for them online.

One online retailer that has already implemented the department store model successfully is Value America. They have actually taken this model one step further and have integrated the inventory seamlessly into their online department store. Their departments have multiple merchants, all of whose inventory is displayed in the same catalog. The National Retail Federation just named them the #46 online retailer.

It is the wise cybermall operator that makes the transition to this new, but not uncharted space, and the wise merchant that leaves a home of his own for high-traffic accommodations in an online department store.

5. Methodology

5.1 Purpose

While some research exists on the pros and cons of electronic retailing and electronic shopping through cybermalls, none appears to be inclusive. In fact, I believe that this paper is unique in its nature since it provides a comprehensive guide, which consists of lists of recommendations, for both consumers and businesses that would like to know more about the nature of a cybermall as an e-commerce/e-business concept.

In order to better understand how consumers and businesses use the Internet and the WWW, what their opinions are regarding online shopping and online retailing (e-tailing) through cybermalls, and what factors they find most important, primary research in the form of online surveys was conducted. The first survey was a cybermall survey about the advantages and disadvantages of online shopping through cybermalls from the consumer perspective.

The survey required the participants from consumers to answer 14 questions that were composed of 10 general demographic information questions, which contained general background questions about respondents (their online behavior and habits) and their use of the Web. The remaining 4 questions were Cybermall-related questions where participants were asked to rate their experiences with shopping through cybermalls by choosing one of the following choices: very satisfied, satisfied, neutral, unsatisfied, or very unsatisfied.

The second survey was a cybermall survey about the advantages and disadvantages of conducting e-business through/with cybermalls from the business perspective. The survey required participants to answer 10 questions that were composed of 4 general demographic information questions and 6 cybermall-related questions.

5.2 Questionnaire Design

For designing both surveys, I tried to:

1. Bound each question: *by providing possible options*
2. Avoid ambiguity: *by making sure each question is clear and easy to understand.*
3. Be exact: *by asking specific questions related to the surveys.*
4. Avoid bias: *by not providing my opinion or any biased information.*
5. Avoid unwarranted assumptions.
6. Make the alternatives clear.

5.3 Collection Method

Some participants in both surveys either stumbled upon the web site surveys of their own volition, or were requested to participate via e-mail messages that were sent to 50 random users of America Online (AOL). The web site Uniform Resource Locator (URL) was submitted to five major search engines and web directories: WebCrawler, Lycos, Yahoo!, AltaVista and InfoSeek. Keywords used to identify the site included: Internet, e-commerce, e-business, e-tailing, electronic retailing, electronic shopping, online shopping, cybermalls, Internet malls, virtual malls and marketing. I decided to use Web technologies to conduct the surveys because they help to minimize costs by:

- 1) enabling point-and-click responses,
- 2) providing structured responses,
- 3) using an electronic medium for data transfer and collation,
- 4) presenting the questions visually for re-inspection and review,
- 5) imposing very loose time constraints and finally,
- 6) utilizing adaptive questions to reduce the number and complexity of questions presented to participants.

It was hoped that those users who were looking for some info or resources about e-commerce would find the surveys, thus selecting themselves for inclusion in this research. In addition, participants were solicited in the following manner:

- Announcements on Internet related newsgroups (e.g. comp.infosystems, www.announce, comp.internet.net-happenings, alt.ecommerce, alt.internet.commerce, etc.),
- Announcements made on WPI bulletin boards and the electronic BBS for the WPI community,
- Announcements sent to WPI students via e-mailing lists.

Given the limitations that exist in the data as a result of the methodology, I make the following recommendation to those using the data presented within this report:

- I recommend that the Cybermall Surveys (consumer/business) data be used with the understanding that the data has a bias towards the experienced and more frequent Web users.
- I recommend that users interested in understanding the complete spectrum of the Internet and WWW communities augment the surveys' data within this report with random sample surveys.

In addition, I recommend the following list of Internet and WWW related surveys Web sites:

- GUV's WWW User Surveys @ http://www.cc.gatech.edu/gvu/user_surveys/
- Cyber Dialogue @ <http://www.cyberdialogue.com/>
- CyberAtlas @ <http://cyberatlas.internet.com/>
- Nua Internet Surveys @ <http://www.nua.ie/surveys/>
- Nielsen Media Research's Internet Surveys @ <http://www.nielsenmedia.com/>

6. SURVEY RESULTS

6.1 Cybermall-related questions: Key Findings

Overall, out of seven consumer advantages, six were confirmed and one was found neutral. Such results show that my literature review findings were highly close to consumers' opinions and beliefs regarding cybermalls. However, not all advantages were equally supported as shown in **Table 5** below. In addition, out of four consumer disadvantages, two were supported, one was not supported, and one was neutral. Results are shown in **Table 6**.

Table 5 – Consumer Advantages: Hypothesis vs. Finding

Advantage	Survey Result
Real-time Interactivity	Strongly supported
More Convenience	Weakly supported
More Options	Strongly supported
More Security; Secure Payment Processing	Highly supported
Faster Customer Service.	Not supported
Personalization	Weakly Supported
More Discounts and Better Deals.	Neutral

6.2 Survey Results Analysis

Real-time interactivity was hypothesized to be an advantage. The survey produced the following results:

Option	Total No. of Respondents	%
A. Big Advantage	84	32.1
B. Advantage	162	61.8
C. Neutral	16	6.1
D. Disadvantage	0	0.0
E. Big Disadvantage	0	0.0

Real-time interactivity										
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	41	22.5	3	14.3	15	65.2	17	63.0	8	88.9
B	125	68.7	18	85.7	8	34.8	10	37.0	1	11.1
C	16	8.8	0	0.0	0	0.0	0	0.0	0	0.0
D	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

Such results confirmed my research hypothesis regarding an important feature of a commercial Web site such as real-time interactivity. Possible explanations for the above result might be due to the fact that cybermall shoppers can search, browse, and compare products and services from different stores simultaneously. A typical cybermall would have hundreds, if not thousands, of products that shoppers can choose from. Moreover, many cybermalls, especially large ones, have advanced search engines that are quick in matching a search inquiry with all appropriate products from different stores participating in the cybermall. A quick search engine on a fast server could create the ultimate experience in real-time interactivity for shoppers. In addition, many large cybermalls have a powerful, full-featured server-side scripting language installed on their servers that

allows cybermall operators/webmasters to create powerful database queries, dynamically create custom pages, and maintain their applications in minutes, just by editing text files. Some comments from the respondents suggested that browsing a variety of products from different Web stores simultaneously to be the biggest advantage of all. For example, a user from Claremont, CA said, "...why I like cybermalls: where else can you shop for a variety of products simultaneously in your PJ's, or even naked (if you choose to)? There's never a line to checkout..." Another respondent claimed that, "...with browsing and comparing 10s of products at the same time, you cant go wrong in a cyber-mall."

Convenience was hypothesized to be an advantage. The survey produced the following results:

Option	Total No. of Respondents	%
A. Big Advantage	34	13.0
B. Advantage	142	54.2
C. Neutral	71	27.1
D. Disadvantage	12	4.6
E. Big Disadvantage	3	1.1

Convenience										
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	16	8.8	2	9.5	5	21.7	7	25.9	4	44.4
B	88	48.4	17	90.0	16	69.7	16	59.3	5	55.6
C	67	36.8	2	9.5	1	4.3	1	3.7	0	0.0
D	9	4.9	0	0.0	1	4.3	2	7.4	0	0.0
E	2	1.1	0	0.0	0	0.0	1	3.7	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

As can see from the table above, many respondents believed that shopping through a cybermall was more convenient for them than a stand-alone merchant Web site. Possible explanations for this might be: 1) since online malls are usually bigger than a single independent commercial site, it might be more convenient for shoppers to browse, compare, and shop for their needs from a single place than browsing different independent stores one at a time. For example, the previous comment from the user from California might suggest that browsing a variety of products simultaneously might give some people the freedom to conveniently shop from the comfort of their homes without worrying about other people checking them out. Moreover, saying that a cybermall is a place where an individual might shop “naked” could be the ultimate, most convenient shopping experience for some individuals. Another survey user, Amy of Colorado, expressed her opinion saying, “I like the idea behind fashionmall.com ‘cause it offers

many name brands and designer labels from garments to shoes, with specialized sections like bridal and gen. x...that's convenience for me in my humble opinion.” 2) Some consumers might have found the search engines that some cybermalls use to be convenient so they might have considered the whole experience to be convenient. That might have been quite possible because many commercial Web sites get judged by users according to their biggest feature(s).

Security was hypothesized to be an advantage. The survey produced the following results:

Option	Total No. of Respondents	%
A. Big Advantage	107	40.8
B. Advantage	113	43.2
C. Neutral	36	13.7
D. Disadvantage	6	2.3
E. Big Disadvantage	0	0.0

Security										
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	47	25.8	14	66.7	20	87.0	19	70.4	7	77.8
B	98	53.8	6	28.6	2	8.7	5	18.5	2	22.2
C	32	17.6	1	4.7	0	0.0	3	11.1	0	0.0
D	5	2.8	0	0.0	1	4.3	0	0.0	0	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

According to some comments from the respondents, many of them were very concerned about the security of conducting financial transactions online. However, 40.8% and 43.2% of respondents considered cybermall to be very secure or secure, respectively. Such percents confirmed my research hypothesis but they neither meant that those respondents who agreed with the findings shopped through cybermall nor were they satisfied with their cybermall shopping experiences. It's quite possible that given the fact that many cybermall run on advanced Web servers that support SSL, many users might have believed that cybermall were a safe place for shopping. Making such argument might suggest that many of the survey users were savvy shoppers who knew about SSL servers. The fact that the majority, 59%, had 1 to 3 years of experience might support such an argument since it doesn't take a long time to learn how to use the Web or

understand some of its well-known terms such as SSL servers. On the other hand, the reasons that some respondents thought that cybermalls were not a safe place for shopping could range from the general notion that many people have about the Internet as a non-safe place for shopping (because of hackers, lack of regulation, or the fear that Big Brother or some sophisticated merchants might track a shopper's digital fingerprints) to the respondents' feeling of insecurity or their disbelief in the security of digital cash while making an online transactions.

Customer service was hypothesized to be an advantage. The survey produced the following results:

Option	Total No. of Respondents	%
A. Big Advantage	37	14.1
B. Advantage	19	7.2
C. Neutral	109	41.6
D. Disadvantage	82	31.4
E. Big Disadvantage	15	5.7

Customer Service										
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	5	2.7	13	61.9	10	43.5	7	25.9	2	22.2
B	8	4.4	2	9.5	4	17.4	2	7.4	3	33.3
C	86	47.3	2	9.5	7	30.5	11	40.8	3	33.3
D	72	39.6	3	14.3	1	4.3	5	18.5	1	11.2
E	11	6.0	1	4.8	1	4.3	2	7.4	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

As can be seen from the table above, across the board, more of the respondents were neutral towards customer service from cybermall operators or representatives. However, about 1/3 of the respondents were not satisfied with the customer services that they had received from cybermalls operators

There were many comments from the respondents who claimed that the biggest problem with cybermall customer service was that "...they did not get back to me quickly," as one respondent put it. In addition, many users complained about technical difficulties that they faced while shopping through cybermalls. For example, a corespondent from France said, "Every time I tried to fill out the customer service form for Viamall.com I got the following stupid message: "Sorry for the Inconvenience. We are experiencing technical difficulties that are not the fault of your computer. Please come back again, after we've

had an opportunity to fix the problem.” I am not sure whether such an experience would make the respondent come back again or not, but for many people unresolved technical difficulties could cause huge frustration, which not only would discourage consumers from coming back again, but also make them complain and give the cybermall a bad name that could easily spread out through the entire online community via newsgroups, chat rooms, forums, or online clubs. Some respondents described what they were looking for in a fast customer service by saying that customer service should be “fast,” “accurate,” “easy to understand and comprehend,” and “repeatable.” A respondent said that she got good a customer service from icemall.com once but when she had another problem, the customer service representatives did not get back to her. Moreover, by receiving a cookie from icemall.com as she claimed, she was not able to report the second problem online and was asked to call a toll-free number. Such practices, if true, would absolutely discredit the cybermall, or any online business for that matter, and make customers either switch to a competitor or buy from an independent merchant store.

Personalization was hypothesized to be an advantage. The survey produced the following results:

Option	Total No. of Respondents	%
A. Big Advantage	118	45.0
B. Advantage	63	24.0
C. Neutral	46	17.6
D. Disadvantage	23	8.8
E. Big Disadvantage	12	4.6

Personalization										
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	86	47.2	13	61.9	10	43.5	7	25.9	2	22.2
B	52	28.6	2	9.5	4	17.4	2	7.4	3	33.3
C	23	12.6	2	9.5	7	30.5	11	40.8	3	33.3
D	13	7.14	3	14.3	1	4.3	5	18.5	1	11.2
E	8	4.4	1	4.8	1	4.3	2	7.4	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

As can be seen in the table above, 45% of the respondents believed that cybermall were much better in tailoring their Web sites' content, including advertising, to their specific needs and tastes, usually based on demographic information that the users had supplied to the sites.

A user from Texas said that he found "such 'tailoring' or personalization is useful and friendly." This brings us to a crucial element of effective personalization: user-friendly. People do not just want any 'tailoring,' but they look for what meets their needs and tastes by providing close, if not accurate, customization. They need to feel comfortable and home while they surf the site that many Web sites call "MyPage" or "My + the name of the Web site" like, for example, MyCNN for the CNN Interactive's personalized individual Web page or MyGlobe for theglobe.com.

Discounts and better deals were hypothesized to be an advantage. The survey produced the following results:

Option	Total No. of Respondents	%
A. Big Advantage	74	28.2
B. Advantage	83	31.7
C. Neutral	62	23.7
D. Disadvantage	25	9.5
E. Big Disadvantage	18	6.9

Discounts and Deals										
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	52	28.6	11	52.4	3	13.0	6	22.2	2	22.3
B	63	34.6	3	14.3	9	39.2	5	18.5	3	33.3
C	37	20.3	5	23.7	7	30.4	12	44.4	1	11.1
D	16	8.8	1	4.8	2	8.7	3	11.1	3	33.3
E	14	7.7	1	4.8	2	8.7	1	3.8	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

As can be seen from the table above, a sizeable proportion of the sample, 83 users, believed that cybermall offered more discounts and provided better deals than independent retailers. Another large group of respondents, 74 users, not just believed that cybermall really offered valuable discounts and better deals, but also considered such feature to be a big advantage.

I might speculate that many respondents found better deals and discounts on cybermall because of the intense competition among the participating online stores that offer the same products in a single cybermall. In other words, shoppers could find low-priced products or services because of the highly competitive environments for many cybermall. Another reason could be because some cybermall generate considerable revenues from advertisements and sponsorships, which they might use to slightly cut

prices for the products available on their Web sites and hence give a better, more economic, image for their Web-sites. According to some comments, some of the major cybermalls that offered better deals and more discounts than independent retailers included iMall.com, coolshopping.com, and cybershop.com.

Now, the overall disadvantage results are shown in **Table 6**.

Table 6 – Consumer Disadvantages: Hypothesis vs. Finding

Disadvantage	Survey Result
Uncertainty and Hesitance	Highly supported
Feeling of Insecurity	Highly not supported
Registration	Supported
Search Engines, Web Directories, and Portals	Neutral

Uncertainty and hesitance were hypothesized to be a disadvantage. The survey produced the following results:

Option	Total No. of Respondents	%
A. Big Advantage	1	0.4
B. Advantage	23	8.8
C. Neutral	10	3.8
D. Disadvantage	92	35.1
E. Big Disadvantage	136	51.9

As can be seen in the table above, the results indicate that the majority, 86%, believed that cybermalls are more suitable for the savvy type of shoppers. Only 9.2% disagreed. Possible explanation that many respondents considered cybermalls to be a better place for savvy shoppers might have been because of the extensive lists of products and catalogs that many cybermalls have, which might make it difficult for some shoppers to correctly decide on a certain product. Such huge lists of products might create information overload for the naïve type of shoppers. For example, one respondent said that she did not shop through cybermalls because she did not need all the information provided. According to her, "...why do I need too much info for a simple product or service?...it's a waste of time if I decide to go through all the info."

Feeling of Insecurity was hypothesized to be a disadvantage. The survey produced the following results:

Option	Total No. of Respondents	%
A. Big Advantage	105	40.1
B. Advantage	115	43.9
C. Neutral	33	12.6
D. Disadvantage	7	2.7
E. Big Disadvantage	2	0.7

This hypothesized disadvantage was related to the Secure Payment Processing point under advantages, but it differed from it in that it dealt with the inner feelings of shoppers while they were placing their orders through the Web server.

As expected, the majority, 84%, disagreed with my research finding regarding this point because most users, as shown previously, believed that cybermalls were safer and more secure than independent retailers' Web sites.

Therefore, considering this point to be a disadvantage is not valid anymore. It should be merged with the previous security point and considered an advantage (feeling of security, that is).

Registration was hypothesized to be a disadvantage. The survey produced the following results:

Option	Total No. of Respondents	%
A. Big Advantage	12	4.6
B. Advantage	53	20.2
C. Neutral	73	27.8
D. Disadvantage	87	33.2
E. Big Disadvantage	37	14.2

As can be seen from the table above, 124 users agreed that it's a disadvantage for many cybermalls, 73 users were neutral, and some disagreed arguing that in order to provide customization and personalization, cybermalls need to collect some personal from the users. One could argue that such an argument is valid for any model of e-business and not just cybermalls.

Finally, the single disadvantage that was considered "vague" or "not clear" was the last disadvantage, search engines and portals. Many posted questions asking what the difference between a cybermall's search engine and an independent search engine such as AltaVista.com or NorthenLight.com. Well, an independent search engine such as AltaVista is far more advanced, comprehensive, and larger than any cybermall search engine. However, the results of a cybermall search engine are more sophisticated and more categorized. For example, if you search for, let's say, a mobile from Nokia, with an independent search engine you will get all the sites that have the two words "mobile" and "Nokia" without any categorization such as price, range, available accessories, or provider. On the other hand, with a cybermall search engine you get every site that offers a mobile from Nokia categorized according to a certain feature. However, you will get results only for what the participating sites offer, and not for any mobile from Nokia.

There are many disadvantages for a cybermall search engine: it's not as comprehensive as an independent search engine, and it's slower and its database is less. On the other hand, cybermall results are better categorized according to your key words and they always include the main features for a product or service such as price and specifications.

7. DISCUSSION AND RECOMMENDATIONS

7.1 Conclusion

Is the Internet good for society, businesses, and consumers? Well, some people argue, and I'm one of them, that the Internet is the biggest and most important invention in history. On the other hand, others argue that there are really some serious side effects for such a powerful, ever-expanding technology as the Internet. Who's right and who's wrong? Well, there is no such thing as right or wrong when it comes to perspectives and opinions. As we saw from this report's set of hypothesis and survey findings regarding cybermalls, as a premier Internet business model, and their pros and cons, there are many arguments and perspectives that would support each side of the scale. For example, as new connections are made between people more ideas travel over greater distances. This allows either like-minded people or complementary people to come in touch with each other. The varied resources of the networks allow these same people to keep in touch even if they would not have been able to be in touch before. Electronic mail (e-mail), for instance, allows enough detail to be contained in a message that most if not all communications can take place entirely electronically. This medium allows for new forms of collaborative work to form and thrive. Does this mean that Internet-enabled collaborative work is 100 percent good for society? Well, some people would argue that such unparalleled, fast, and secure collaborative work would also give some anti-society groups such as terrorists, hackers, and sophisticated gangs the ability to collaborate and conduct their operations in a way that they would never imagine. There are always the good, the bad, and the ugly in every society and each one of them can use the technology of the Internet (Net) as he sees it fit.

The Internet can improve quality of everyday life. Information flow can take various shapes. The strangest and perhaps most interesting one is how emotion can be attached to information flow. They often seem like two very different things. We all heard about stories that reported real-life marriages arising from Net meetings. The Net facilitates the meeting of people of like interests. The newness of the Net means we cannot fully understand it as of yet. However, it is worth noting that people have also broken up on-line. Another way of improving daily life is by making communications with friends

easier. The ease of sending e-mail is bringing back letter writing. However, the immediacy of e-mail means less care can be made in the process of writing. E-mail, IRC and Netnews make it much easier to keep in touch with friends outside one's local area.

The Net enhances work. The fluid connections and the rapidly changing nature of the networks make the Net a welcome media for those who are job hunting and for those who have jobs to offer. The networks have a large turnover of people who are looking for jobs. The placement of job announcements is easy and can be kept available for as long as the job is offered. E-mail allows for the quick and easy applications by sending resumes in the e-mail. Companies can respond quickly and easy to such submissions, also by e-mail. Besides finding work, the Net helps people who are currently working perform their job in the best manner. Many people nowadays utilize the Net to assist them with their jobs.

So far so good? Aren't there any problems with the Internet? Well, with all of the positive uses and advantages of the Net, it is still not perfect. The blind-view of people on the Net seems to shield everyone, but women. There is a relatively large male to female percentage population on the Net. Women on-line can feel the effects of this difference. Women who have easily identifiable user names or IDs are prone to be the center of much attention. While that might be good in itself, much of that attention can be of a hostile or negative nature. This attention might be detrimental to women being active on the Net. Net harassment can spread against other users too. People with unpopular ideas need to be strong to withstand the outlash of abuse they might receive from others. The worst non-people problem seems to be information overflow. Information adds up very quickly and it can be hard to organize it all and sort through. This problem should be solvable as technology is now being developed to handle it.

In conclusion, For the people of the world, the Internet provides a powerful means for peaceful assembly. Peaceful assembly allows for people to take control over their lives, rather than that control being in the hands of others. This power deserves to be appreciated and protected. Any medium or tool that helps people to hold or gain power is something that is special and has to be protected. The Net has made a valuable impact on

human society. As my research has demonstrated, people's lives have been substantially improved via their connection to the Internet when it comes to particular areas such as online shopping and electronic retailing (e-tailing). This sets the basis for providing access to all in society. Using similar reasoning, some Net experts believed that access to the then growing information network should be made ubiquitous. They felt that the Net's value would depend on high connectivity. Some argued that the impact upon society depends on how available the network is to the society as a whole. Society will improve if Internet access is made available to people as a whole. Only if access is universal will the Internet itself advance. The ubiquitous connection is necessary for the Internet to encompass all possible resources. Steve Welch, a Net visionary, writes: "If we can get to the point where anyone who gets out of high school alive has used computers to communicate on the Net or a reasonable facsimile or successor to it, then we as a society will benefit in ways not currently understandable. When access to information is as ubiquitous as access to the phone system, all Hell will break loose. Bet on it." Mr. Welch is right, "all Hell will break loose" in the most positive of ways imaginable. Similar to past communications advances such as the printing press, mail, and the telephone, the Global Computer Communications Network has already fundamentally changed our lives.

7.2 For Consumers

In order for consumers to experience pleasant, safe online shopping through the many retailers associated with a single cybermalls, they have to follow general online shopping tips that also apply to stand-alone store and retailers. Since there are literally hundreds of articles and web sites that are written by many consumer protection agencies and government agencies, I decided to include some of what has been written in the following section below. Sources include: The Better Business Bureau (BBB) (<http://www.bbb.org>) and the National Consumers League (NCL) (<http://www.nclnet.org>)

Recommendations:

Convenience is consistently cited as the primary reason consumers get online and there is little dispute that the Internet has made price comparisons and bargain hunting easier than ever. But before you gear up to point, click and shop, beware that convenience may come at a price -- and with risks -- albeit ones that may be worth your while.

Convenience galore

Few can argue with the assertion that online retailing has made shopping more convenient than ever. Information is easy to find and comparing prices from different sellers takes minutes. The Internet has also simplified the process of choosing that perfect present, as online gift registries, which allow consumers to create holiday wish lists, become ever more prevalent.

And of course, the World Wide Web has virtually shrunk the real world, bringing once inaccessible and geographically challenged products to consumers' fingerprints.

"It can be a great way to find something that might not be readily available in your area," said Susan Grant, vice president for public policy at the National Consumers League and director of the organization's Internet Fraud Watch program. "Maybe you'll run across an out-of-print book or something you couldn't find anywhere else."

Online retailers, especially cybermalls, can also offer savings, though how significant these bargains are is a bit unclear. Although many cybermalls, such as imall.com, offer

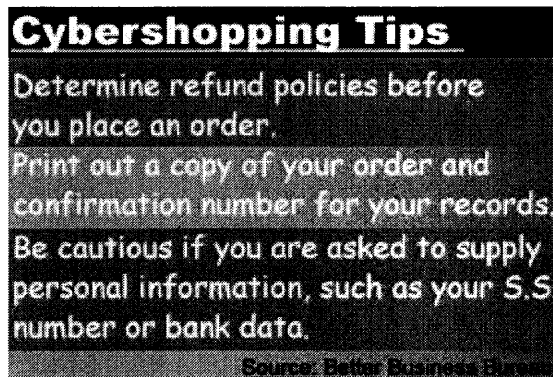
items at prices well below their brick-and-mortar counterparts, shipping and handling costs can cancel these out.

On the flip side, shipping fees may be a pittance compared to money laid out for gas, parking and the time spent in a real-world mall hunting down the right gift.

Proceed with caution

Despite all its conveniences, the Internet does not eliminate many of the age-old problems that commonly plague consumers, especially when it comes to direct mail orders. For one, there is no guarantee you will be satisfied with your purchase once it arrives. That red sweater you ordered might be more orange than you expected. And unless the item was clearly defective or misrepresented, you may be stuck with it -- or at least with some added expense.

In most cases, you will be responsible for the cost of mailing the item back to the retailer. And don't assume because the online retailer has a real-world counterpart that you will be able to return the item at the brick-and-mortar store.



Some Internet companies may not allow returns at all, for instance, and others may only issue store credit, which could be a problem if their products are very specialized and you won't have use for anything else they sell. Just be clear about any return and refund policies before you make a purchase online and leave a paper trail by printing out product descriptions, delivery information, warranties and any confirmation notices. You'll also want to make sure you know how to reach the customer service department if you have

any problems.

Charging ahead online

The good news is that the same laws that govern mail and phone orders apply to online retailers, so if you do find yourself in a situation where the company misrepresented its products or sent you a defective item, you have recourse. Despite widespread assumptions to the contrary, the best way to protect yourself from these types of problems on the Internet is by charging any purchases you make.

Online credit card transactions "are protected by the Fair Billing Act, the same as phone and mail order transactions," the BBB's Cherico said. "If a company doesn't provide the promised product, they'll have to pay up." By using a credit card, you have the legal right to dispute any problems and you have limited liability if your card number is stolen or misused. These same protections are not guaranteed by debit cards, though some debit companies voluntarily offer similar protection. If you pay by check or money order, your money may be much harder to recoup.

Regardless of how you pay, online orders are required by law to be delivered by the time stated -- or, if no time period is stated, within thirty days. But of course, it is easier to put a stop on payments for late items if you paid by credit card.

Misperceived risks

Despite the protection offered by credit cards, online payments still leave many consumers uneasy. In a survey commissioned by the National Consumers League, 41 percent of respondents cited concerns that their credit card numbers would be stolen if they gave them online.

That danger is often overstated, says the NCL's Grant. Many consumers "incorrectly believe that it is safer to pay for an online purchase by check or money order rather than credit card," she said. "People don't realize that encryption is commonly used to protect financial information during transmission."

If you are unsure if your transaction is encrypted, look for the unbroken key or closed

lock at the bottom of your browser window. When submitting sensitive data, the lock should be shut.

If you remain nervous about using your card online, consider calling in the number over a customer service line. Or use an escrow service, which will hold your money until you have confirmed you have received the product or service and then release the payment. But bear in mind that the risks of submitting credit card information over the Internet are not all that different than providing it in the real world, says the BBB's Cherico. "When you pay for a meal in a restaurant and the waiter takes your credit card behind the scenes, you can't really know that he isn't passing it along to his friends in the kitchen," she said. "You just have to count on the fact that the business is reliable and trustworthy."

Making sure the online business you are dealing with is legitimate should be a priority, since the risk of being taken by a fraudulent company is much higher than the risk of your credit card information being "cracked" over the Internet. "Consumers need to check out unfamiliar companies before doing business with them, online or off-line," said Grant. "You can't judge them simply on the basis of a nice-looking Web site."

The lack of a real-world way to contact the organization can be a big red flag.

"The company should have a physical location and phone number listed on its Web site. You need to have some means of contacting them if you have problems after the fact," said Cherico.

You can also investigate a company by going to Whois.net. This public information site lets you plug in an URL, or uniform resource locator, and tells you who has registered it and the actual physical location of the company. Additional information, such as the contact name, phone and fax numbers may also be available

Finally, here are some general tips from the Better Business Bureau that you should follow:

1. **Location, Location.** If you're interested in trying a new online merchant who you're not familiar with, ask the company for its physical location (address and

phone number) so that you can check on its reliability with outside organizations like the Better Business Bureau (BBB) and consumer agencies.

2. **Customer Satisfaction Policy.** Determine the company's refund and return policies before you place an order. If online companies can't offer concrete commitments on how they will handle any potential problems you may have with their products or services, reconsider doing business with them.
3. **Protect Your Passwords.** Never give out your Internet password. When creating a password, avoid using established numbers, such as your house number, birth date, or your telephone or Social Security numbers. If the site asks you to create an account with a password, never use the same password you use for other accounts or sites.
4. **Leave Nothing to Chance.** Be sure you have a thorough understanding of everything involved before making an order. Be clear on the price and any shipping and handling charges. Know the terms of any product or service guarantees. Find out how long it will be before you receive your order. Federal law requires that goods and services be delivered within 30 days, unless a different delivery period is specifically stated by the merchant.
5. **Guard Your Personal Information.** Only provide your credit card information or Social Security number online in a secure environment. Look for the prefix `https://` . . . in the Uniform Resource Locator box which lists the website's web address to be sure that a site you are using is secure.
6. **Check For Reliability.** Check a company out with your Better Business Bureau. For the phone number or address of your nearest BBB, visit the BBB's Web site at www.bbb.org/bureaus. Also look for a reliability seal from a reputable online consumer protection program such as BBBOnLine (www.bbbonline.org).
7. **Keep a Paper Trail.** Print out the "address" of the company site you are on—its Uniform Resource Locator (URL). The URL ensures that you are dealing with the right company. It's also a good idea to print out a copy of your order and confirmation number for your records.
8. **Know Your Consumer Rights.** The same laws that protect you when you shop by phone or mail apply when you shop in cyberspace. Under the law, a company must ship your order within the time stated in its ads. If you decide to pay by credit card or charge card, your transaction will be protected by the Fair Credit Billing Act. If you are not comfortable entering your credit or charge card account number online, call it in to the company's 800 number or fax it.

7.3 For Businesses

If you, as a retailer, are thinking about building a Web site for your business, there are advantages to locating in a cybermall. Most cybermalls have an "anchor site," just as in a real mall, so other shops benefit from the traffic the anchor site attracts. The online malls advertise to draw visitors, which boosts traffic for small shops with limited advertising budgets. Because many malls are run by Web developers and server companies, they often offer bundled site development and maintenance services.

For a monthly fee, most malls offer secure transaction capability--usually from one of the large, well-known transaction processing companies--which can be too expensive for a smaller company to offer on its own. And if the mall specializes in a particular industry, the developers are already a step ahead of other Web site creators in understanding how the companies in that industry work, so it should take them less time to create quality sites for those companies.

Although industry analysts at first expected malls to dominate the Web as it became more crowded with sites, this hasn't happened. That's mostly because of the emergence of the search engines, which enable Web browsers to find whatever they're looking for by keyword. There's really no need for visitors to rely on their favorite mall to find worthwhile sites, so many companies don't bother paying an extra monthly fee to be part of a mall. Another disadvantage of listing with a mall is that companies have no control over what other companies are "next door." Perhaps the other sites in the mall are a good fit, and attract a good demographic. Perhaps not.

Recommendations:

Before you make any decision about where to put your Web site, remember to browse the Internet first. Browsing is the key to learning the Web. Because the Web is a new medium, it is impossible to grasp how other companies are using it without going online and checking it out. Before putting together an online strategy, before making changes in that strategy, before putting a site online, before making any decision concerning your Web site, you should spend some time browsing the Web. Once you put a site online, you should spend *at least* an hour a week on the Web. This is essential to

creating and maintaining any Web site because the online world changes with lightning speed. What is cutting edge one week is old hat the next.

It may sound time-consuming, but the Web is moving and changing quickly, and visiting it regularly is the only way to keep up. Here's what to look for when you're surfing online:

- What links are companies using? Where do they go (internal or external)? How many per page are there?
- What do my competitors' sites look like? How often are they updated? What does the customer feedback page look like? How easy is it to order goods or services? What graphic tricks are they using? Are the sites easy to move around in?
- What do sites look like when viewed with different browsers (i.e. Microsoft Internet Explorer²¹ and Netscape Navigator²²)? How bad do some of the special effects look with the "wrong" browser? How long do sites take to download, and how long am I willing to wait for them?
- How do the different search engines work? What kind of sites do I turn up using different keywords? What keywords should I use to describe my site, and what sites do I turn up if I search on those keywords?

With browsing the Web, you will learn how your customers will find, see, and use your site. You will see the latest design developments being implemented, instead of just reading about them in a trade publication. You will learn tricks and shortcuts. If you do not have the time to spend browsing, designate someone in the company to do it for you. Otherwise, you will end up with a stale, static site that bores visitors. And a lonely site quickly becomes a dead site, with no payoff for the company.

In conclusion, even though it seems that listing your site in a cybermall has many more advantages than disadvantages, you should keep in mind that some of the disadvantages are bigger and might have more impact on your business than the advantages. In addition, you should know that some of the advantages for working under the umbrella of

²¹ <http://www.microsoft.com/ie>

²² <http://www.netscape.com/computing/download/>

a cybermall could also be gained by having your independent Web site. For example, you could have more exposure and traffic by listing your site with a search engine or a web directory. In addition, you could also have a secured payment processing system using not-so-expensive software. Moreover, search engines, web directories and portals could help you promote²³ your Web site freely and more effectively.

But keep in mind, too, that developing and maintaining your own stand-alone web site will require hiring someone or learning how to create the site and manage the resulting e-mail and orders. Simple, low-cost web pages can be designed using web page editors; more elaborate e-commerce web sites will require additional funds to cover the costs of order management software such as shopping carts and product searches²⁴. Your business will also be responsible for promoting your web address, placing it on search engines, and arranging for as many links as you can so that your customers can find you.

On the positive side, your stand-alone web site address is often simple to remember and to advertise. For example, using the space included with your e-mail account at your Internet service provider (ISP) to store your web pages, your address will be www.yourisp.com/yourbusiness.htm, or, if you purchase a virtual domain name, www.yourbusiness.com. You will be able to make changes and additions to your site, and to register it directly with search engines using your own key words. Also, you will own any web pages you develop and can move their location if necessary

Finally, don't forget that being a part of a cybermall costs your business a certain amount of independence: its success depends as much on the popularity of the entire package of stores as it does on its own efforts. Also, the synergy between a business and a cybermall doesn't always have to be $1+1=3$; it might end up with $1+1=0$ or even worse $1+1=-1$ (for either party) or $1+1=-2$ (for both parties). Therefore, if you are considering joining a cybermall, I advise you to:

²³ Refer to *101 Ways to Promote Your Website* by Susan Sweeney (ISBN: 1885068379) for more info.

²⁴ Visit <http://www.commerce.net/>, <http://www.infoworld.com/>, and <http://ecommerce.internet.com>

- Review carefully the start-up and ongoing costs of doing business on the mall, and compare it with a stand-alone web site.
- Be sure you like the layout of the web page that will contain your business information and featured products.
- Test the navigation set-up to see if customers can move easily to your products.
- Verify that customers can go directly to your information with a web address (URL) that is easy to remember and type.
- Clarify who owns the web pages and how you can revise information on your page.
- Ask for the success rate of the current vendors at the mall and for methods used to advertise and link the web site.
- See if a product or company on the mall can be found on a search engine.

Also, these are some questions to ask when you are considering placing your store in a cybermall:

- Do they allow you to advertise your store independently of the mall?
- Do they take a percentage slice of your monthly income?
- Do they generate enough traffic and provide enough services to warrant their charges?

Moreover, there are some criteria for selecting a successful cybermall that should be verified before getting a Web site (or a "link" for an existing site) in any cybermall:

1. On and Offline Promotion.

Most malls are only promoted via search engines and random links and banners.

Successful malls know that an offline promotion component is very essential. Ask specifically how the mall is promoted.

2. Verifiable Traffic.

Find out how many visitors are visiting the mall's home page each month. The number of "hits" can be an extremely misleading statistic. Every server seems to count them in a

different way. Your concern should be the number of people visiting the home page. These represent potential buyers.

3. Promotional Efforts Attract Shoppers (i.e. buyers).

You are paying the mall for the type of traffic they are drawing to their site. You want this to be shoppers, and if possible, representing the demographics of your typical buyer. Most mall owners spend all their promotional efforts on attracting mall merchants. These people are not buyers — they're merely checking out the mall to make an informed buying decision. Ask what type of ads they place and where.

4. Secure Credit Card Transactions.

This is imperative to put your buying customer's security at ease. With out it, your sales potential is dramatically impaired. According to Margaret McGillin²⁵, the best ten security-related questions to ask a cybermall or a hosting provider are:

1. Do you have a secure server with a digital certificate²⁶? What type of server is it and who is the Certifying Authority? Can I use this certificate or must I purchase my own?
2. How does your payment processing work? Do you accept micro-payments, coin, check and credit card? What are the transaction fees? What payment processing vendors and financial institutions do you work with?
3. If I have my own merchant ID, may I use your payment processing software?
4. What do you do with the credit card numbers from the transactions? Are they stored or deleted?
5. Is the fulfillment process secure? How am I notified about orders? What encryption²⁷ software do you use?
6. How is the physical server secured?
7. How controlled are your personnel procedures, regarding access to sensitive security, customer and merchant data?
8. Are you certified by any industry groups as a trusted market place.

²⁵ Margaret McGillin is President of WOWFactor, Inc., visit www.wowfactor.com for more info.

²⁶ For more information on Digital certificates go to <http://www.verisign.com>

²⁷ For more information on Encryption visit <http://www.pgp.com> (PGP = Pretty Good Privacy)

9. Do you have adequate financial resources and expertise to stay current with security developments?
10. If the previous questions are answered positively, are you priced competitively and what are your value added features that will help generate revenue?

5. Don't Overpay for Traffic.

You're paying for expected traffic to your site. Make sure you're not paying too much in relation to the traffic you think you will get.

6. Theme or Categories Offered.

If a mall's promotional efforts tend to attract business owners, it makes sense that you should offer something that business owners want. Check out the categories in the mall. Do any fit your business? Are there several stores in that category? If not, you may be placing your site in a mall with the wrong demographics.

7. Reasonable Charges for Changes.

Anybody knows that a successful Web site needs constantly changing information. That's one strategy to turn visitors into lifetime relationships. Check into the fees for making changes to your site. If it's too much, you may be spending too much on "change" fees. Better yet, see if you can make the changes yourself and upload HTML files to their server with an FTP utility.

7.4 For Cybermalls

In order for a cybermall to survive, its operators need to become *online department stores* and merchants in the cybermalls need to become *departments*²⁸. Cybermall operators need to have more than a vendor relationship with their merchants. Instead of mall operators accepting all comers, selling them some exposure and shopping cart services, department stores need to be selling merchants the right to provide products and services for a given department in their own store.

²⁸ See section 4.5 for more discussion.

APPENDICES

APPENDIX A: CYBERMALL SURVEY: CONSUMER PERSPECTIVE

Purpose:

My intentions are to explore and examine the pros and cons of cybermalls. One way that users of the World Wide Web find sites they like is by browsing cybermalls. Like regular malls, these cybermalls are large Web sites where several online shops are gathered together. Usually the sites have something in common (a standardized environment)--the same type of product or service or the same geographic location. Visitors to the online version of a mall will find either lists of the shops in the mall or icons representing each shop. Clicking on the name of the store or the icon links immediately to the shop. Other terms for cybermalls are virtual malls, Internet shopping malls/centers, Web malls, and online malls.

This SURVEY is part of an ongoing project that I am working on at the Worcester Polytechnic Institute (WPI). The major advisor for the project is Professor Ted A. Haggblom haggblom@wpi.edu from the Management Department. The project identifies, investigates, and reports on cybermalls and their pros and cons as an online business model of electronic commerce (e-commerce). In addition, the report examines how cybermalls as technology interacts with societal structures and values of the online community. Your role, as a member of the online community, in this survey is to express yourself freely and honestly answer all the questions below. Your participation will be considered valid if and only if all the questions are answered.

Method:

This questionnaire operates on a simple multiple-choice system. To make an answer, click on the appropriate response button. To change an answer, just click on the other answer. You may scroll up or down the page as necessary. Once you have entered all your answers, click on the **Submit** button at the end of the questionnaire.

Important: *All your questionnaire answers will remain anonymous. No information that links your answers with your identity will be sold or furnished to any company or agency for any commercial, marketing, or political purpose whatsoever.*

1- How long have you been a member of the online community?

☐ Less than a year ☐ 1 to 3 years ☐ 4 to 6 years ☐ 7 to 9 years ☐ guru

2- What do you use the Internet primarily for?

- ☐ Research
- ☐ Entertainment
- ☐ Education
- ☐ Sales/Marketing/PR
- ☐ Communication

3- Please Rate the following Internet's attributes (use 1 for best attribute, 2 for second best attribute and so on):

- Size of the network
- Cost to use
- Quality of information available
- Array of features/client applications
- Lack of regulation
- Multi-cultural/world-wide
- Communication speed/performance

4- On the Internet, what applications do you use most? Please rate each application accordingly (use 1 for the first most-used application, 2 for the second most-used application and so on):

- E-mail
- World-Wide-Web
- Newsgroups
- Gopher
- Telnet (including MUDs, etc.)
- Ftp
- IRC/Chat
- Other

5- Have you: (check all that apply)

- ☐ Purchased a product online?
- ☐ Bought a product you heard about online?
- ☐ Been responsible for others getting on the internet?
- ☐ Shopped through a cybermall?

6- How familiar are you with the concept of a cybermall (Internet shopping mall or virtual mall)?

☐ Very Familiar ☐ Familiar ☐ Unfamiliar ☐ Very Unfamiliar

7- Do you purchase products through cybermalls, such as iMall.com, QVC.com, Spree.com, MallofAmerica.com or Yahoo.com?

☐ Yes ☐ No

** If you answered **Yes** to question 7, then please answer questions 8 and 9. Otherwise, please move on to question 10.*

8- Please classify the following factors as advantages, disadvantages or neutral for buying products through a cybermall vs. independent merchant's web site:

Real-time interactivity

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Convenience

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

More options

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Security

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Customer service

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Discounts and deals

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

9- Please rate your degree of satisfaction with your shopping experience through a cybermall?

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Unsatisfied ☐ Very Unsatisfied

10- Your Age Group:

- | | |
|-------------------------------|-------------------------------|
| <input type="radio"/> (13-19) | <input type="radio"/> (45-49) |
| <input type="radio"/> (20-24) | <input type="radio"/> (50-54) |
| <input type="radio"/> (25-29) | <input type="radio"/> (55-59) |
| <input type="radio"/> (30-34) | <input type="radio"/> (60-64) |
| <input type="radio"/> (35-39) | <input type="radio"/> (65+) |
| <input type="radio"/> (40-44) | |

11- Your Sex:

- ☐ Male
☐ Female

12- Your Education:

- ☐ Some High School (not graduated)
☐ High School graduate
☐ College (2yr degree, not completed or still in school)
☐ College Graduate/Bachelors
☐ College Graduate/Masters
☐ College Graduate/PhD+

13- Your Occupation/Status:

- ☐ Student
☐ Blue Collar
☐ Professional
☐ Retired

14- Is your business directly associated with the Computer Industry?

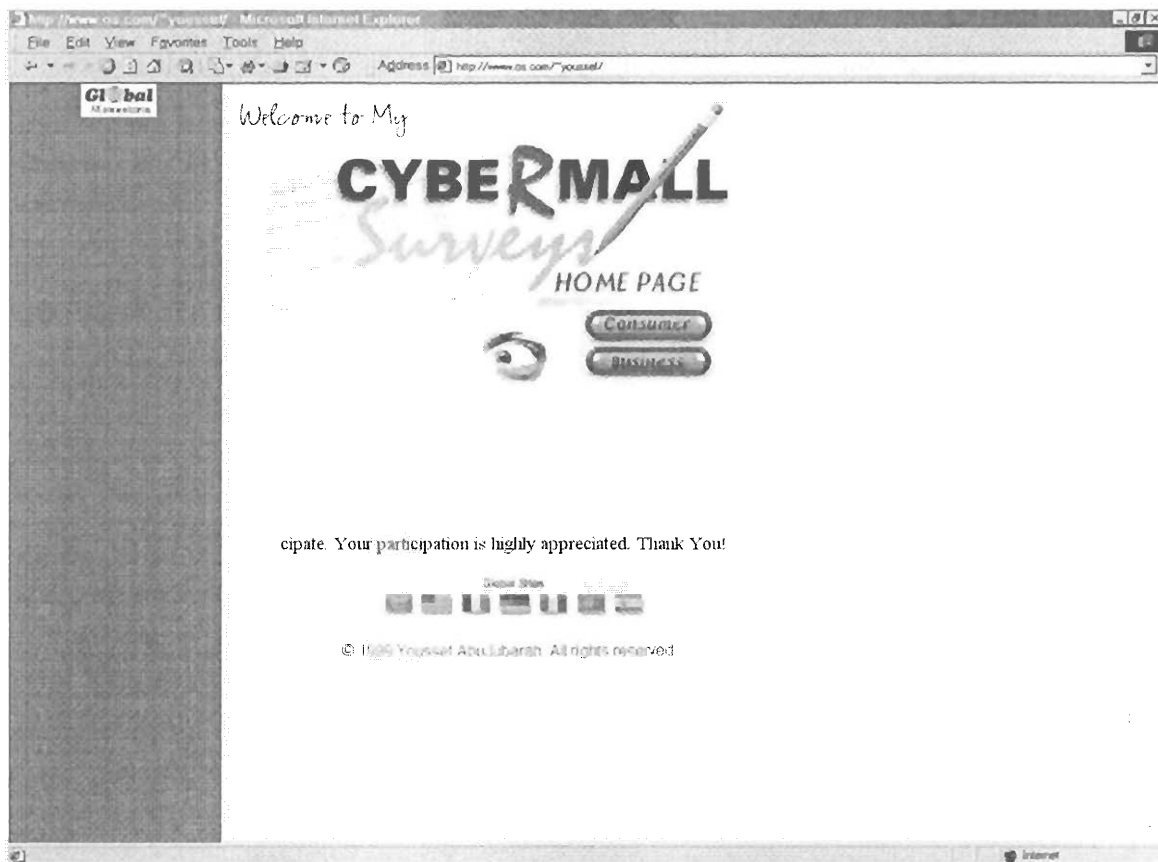
☐ Yes ☐ No

I would like to thank you very much for your valuable time and I appreciate your participation.

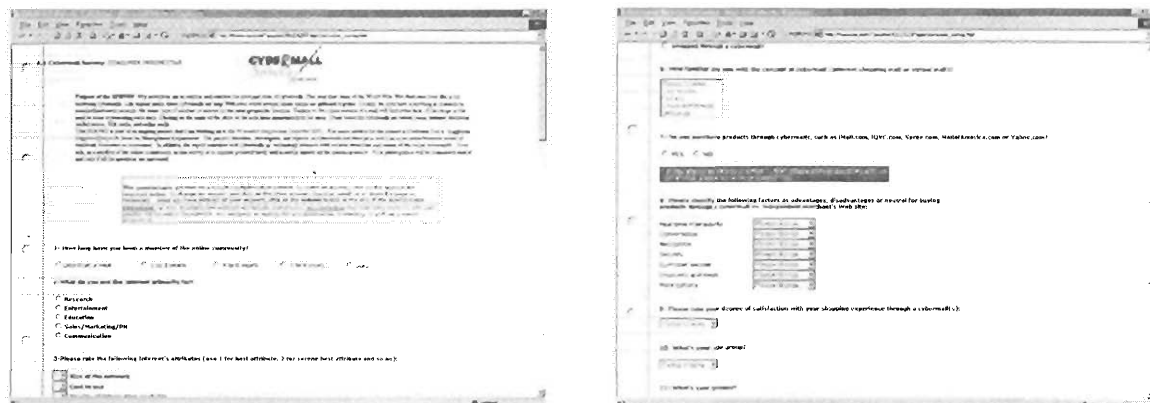
All results will be published on this site (<http://www.os.com/~youssef/iqp.html>) when I am done with the project. So please stop by later to take a look at the findings and provide me with your feedback.

APPENDIX A1: Survey's Web Site

Main Web site entrance (<http://www.os.com/~youssef/>)



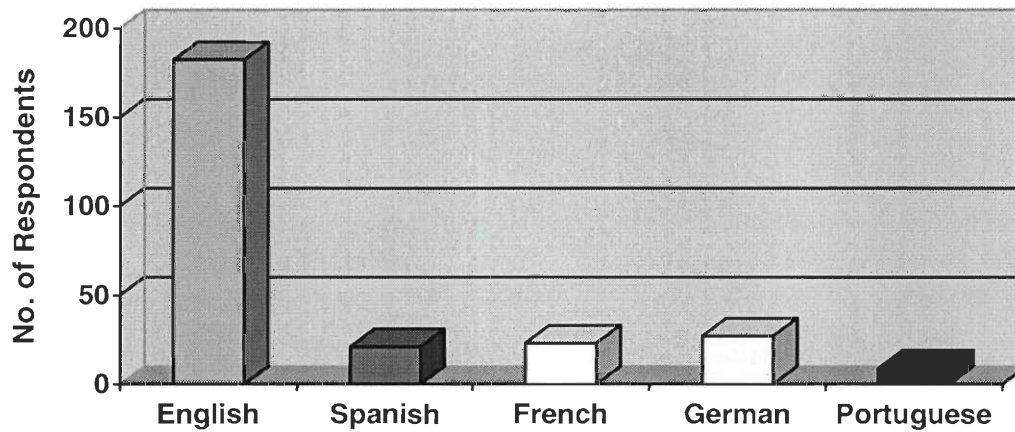
Snapshots of the Consumer Survey

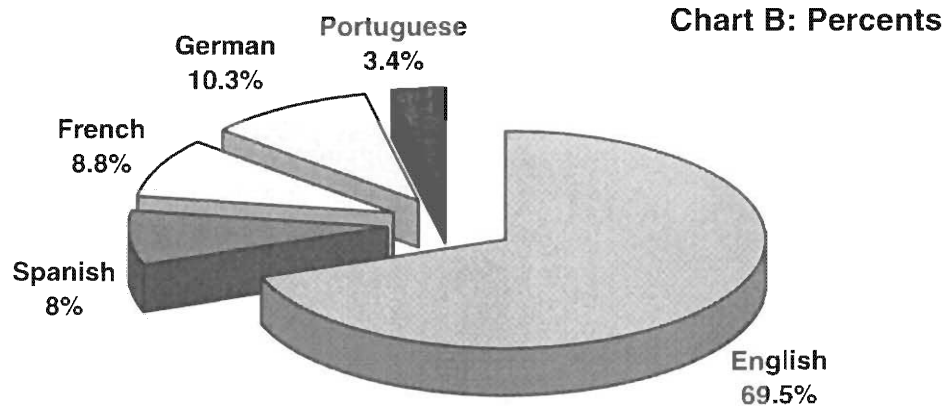


APPENDIX A2: CYBERMALL CONSUMER SURVEY DATA

Demographic Distribution		
Language	Number of Respondents	% of Total Respondents
English	182	69.5
Spanish	21	8.0
French	23	8.8
German	27	10.3
Portuguese	9	3.4
Total	262	100

Chart A: Total No. of Participants





Tot. = Total number of respondents
% = Percentage of total respondents

1- How long have you been a member of the online community?

Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
Less than a year	49	26.9	13	61.9	14	60.9	9	33.3	3	33.3
1 to 3 years	118	64.8	6	28.6	9	39.1	16	59.3	5	55.6
4 to 6 years	11	6.0	2	9.5	0	0.0	2	7.4	1	11.1
7 to 9 years	4	2.2	0	0.0	0	0.0	0	0.0	0	0.0
guru	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

Chart 1A: No. of Responses

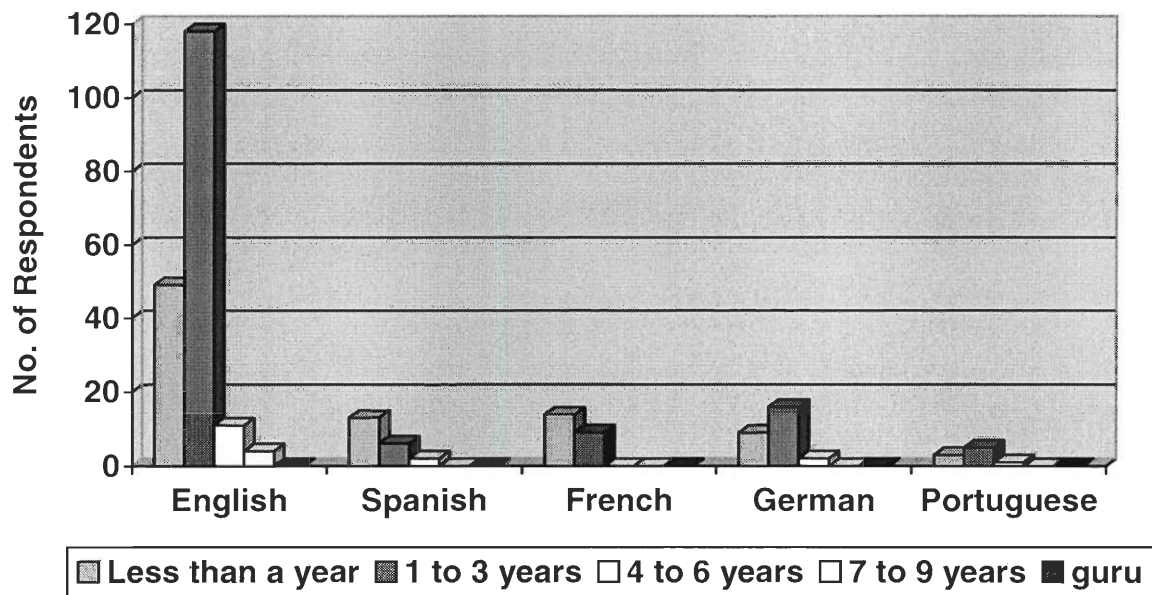


Chart 1B: Percents

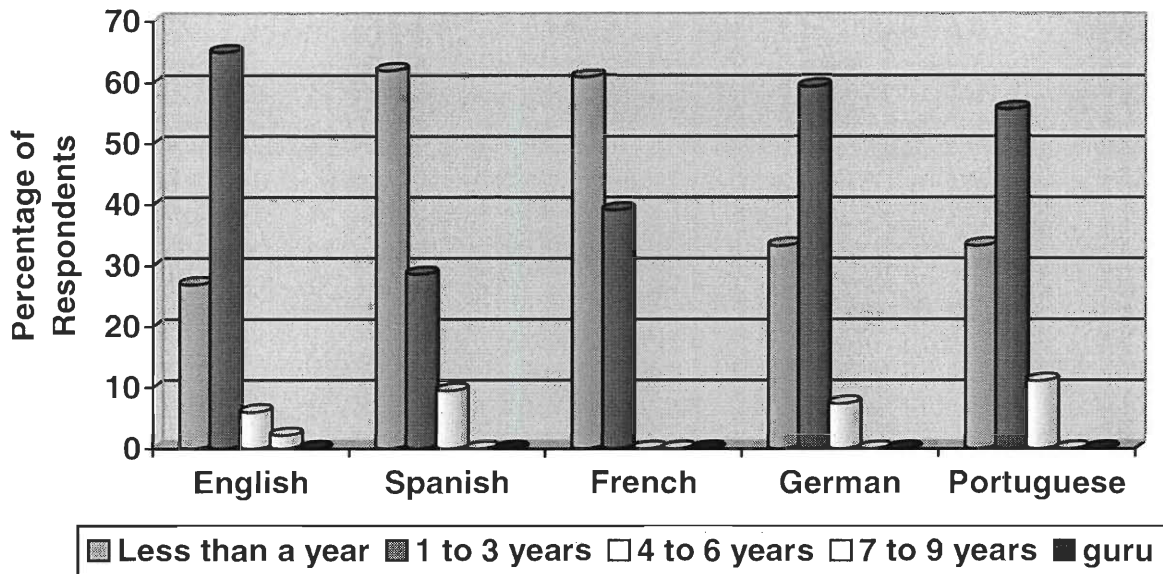
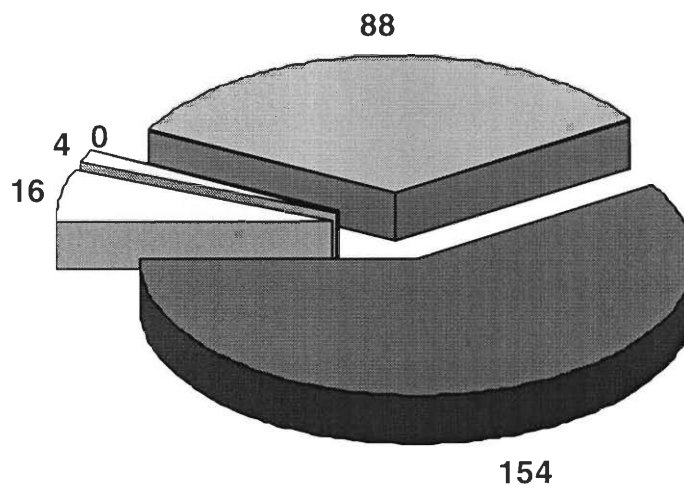


Chart 1C: No. of Responses for each Category



2- What do you use the Internet primarily for?

Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
Research	37	20.3	1	4.8	4	17.4	4	14.8	1	11.1
Entertainment	36	19.8	2	9.5	1	4.3	2	7.4	1	11.1
Education	23	12.6	2	9.5	4	17.4	3	11.1	0	0.0
Work	39	21.4	15	71.4	14	60.9	17	63.0	5	55.6
Shopping	15	8.3	0	0.0	0	0.0	0	0.0	0	0.0
Personal Info	32	17.6	1	4.8	0	0.0	1	3.7	2	22.2
Total	182	100	21	100	23	100	27	100	9	100

Chart 2A: No. of Responses

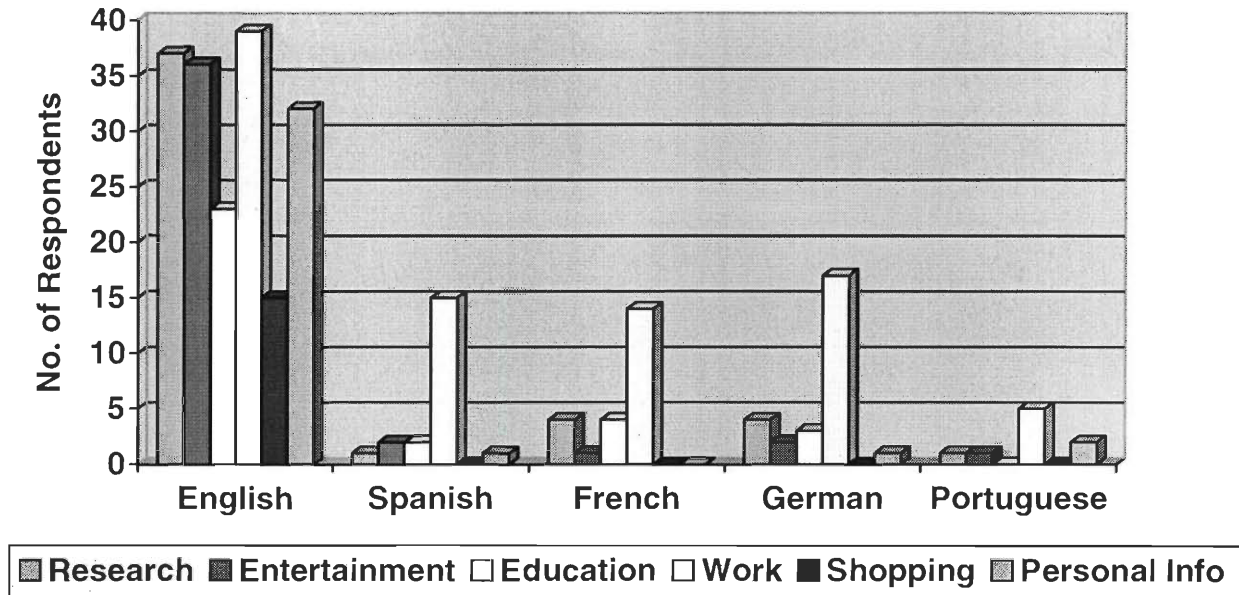


Chart 2B: Percents

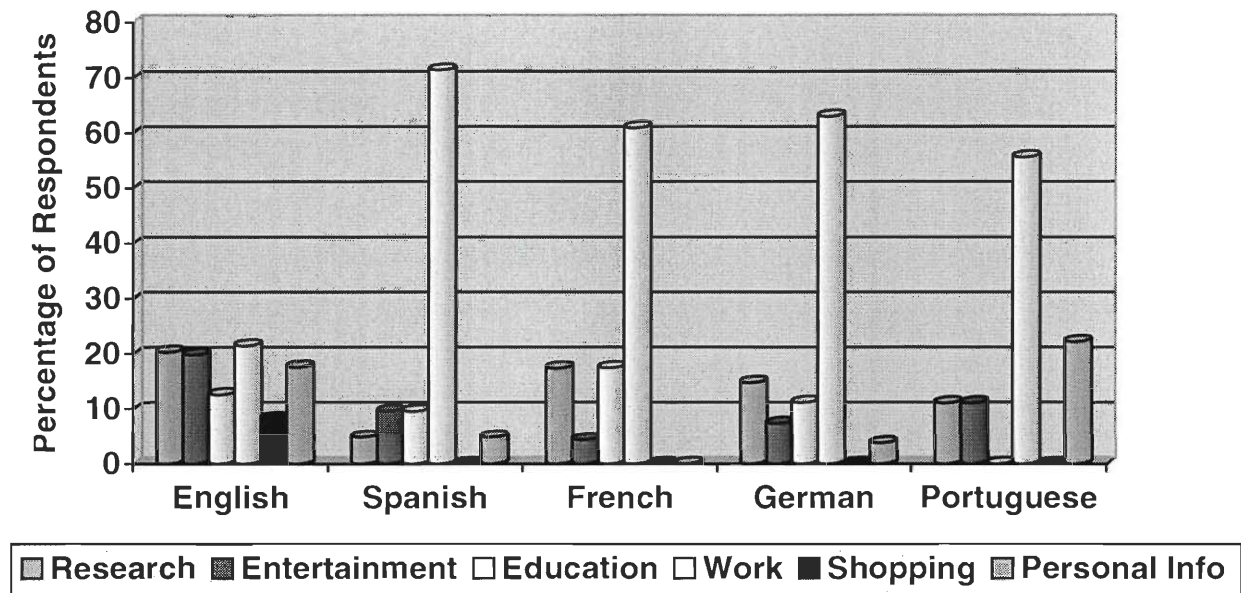
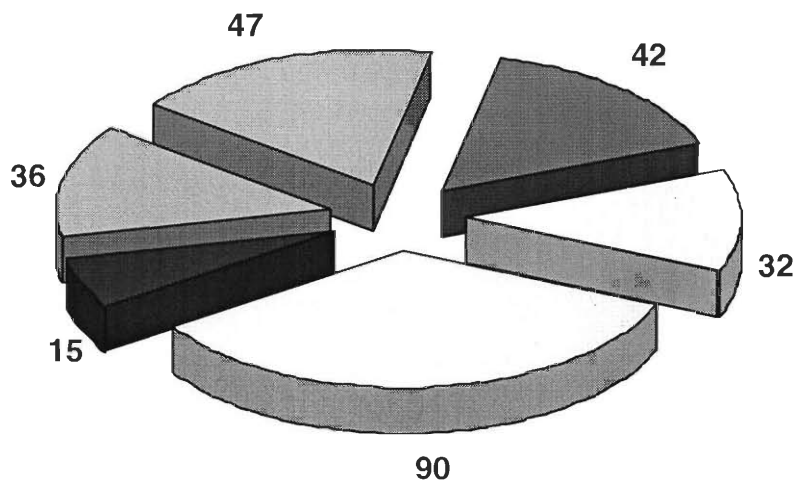


Chart 2C: No. of Responses for each Category



3- Please rate the following Internet's attributes (use 1 for best attribute, 2 for second best attribute and so on):

- A. Size of Network
- B. Cost to use
- C. Quality of info available
- D. Array of feature or client application
- E. Lack of regulation
- F. Communication speed/performance
- G. Multicultural/world-wide

Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	5	2.8	0	0.0	0	0.0	1	3.7	0	0.0
B	8	4.4	0	0.0	2	8.7	0	0.0	1	11.1
C	8	4.4	1	4.8	0	0.0	0	0.0	1	11.1
D	7	3.8	0	0.0	0	0.0	0	0.0	0	0.0
E	16	8.8	0	0.0	0	0.0	0	0.0	0	0.0
F	111	61.0	6	28.6	15	65.2	17	63.0	2	22.2
G	27	14.8	14	66.6	6	26.1	9	33.3	5	55.6
Total	182	100	21	100	23	100	27	100	9	100

Chart 3A: No. of Responses

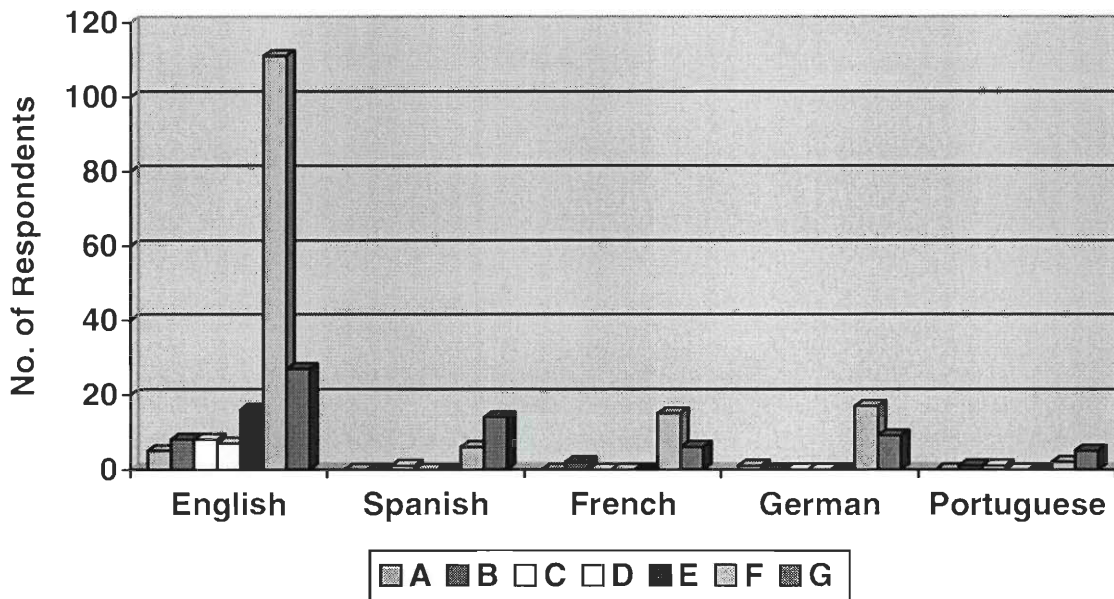


Chart 3B: Percents

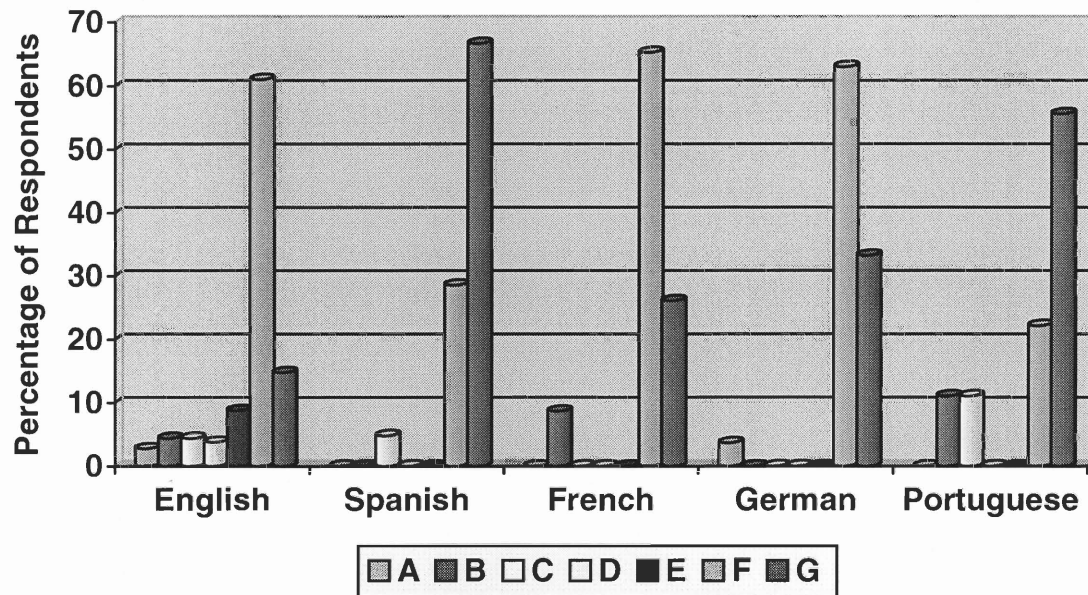
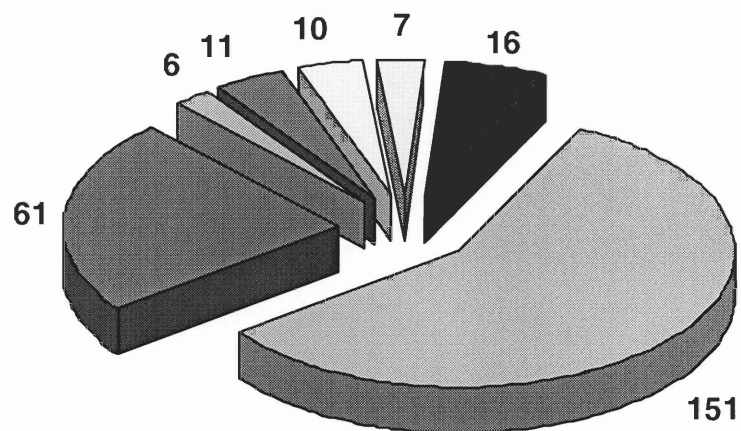


Chart 3C: No. of Responses for each Category



5- Have you: (check all that apply)

- A. Purchased a product online?
- B. Bought a product you heard about online?
- C. Been responsible for others getting on the internet?
- D. Shopped through a cybermall?

Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	67	36.8	3	14.3	4	17.4	6	22.2	3	33.3
B	39	21.4	1	4.8	3	13.0	1	3.7	0	0.0
C	21	11.5	1	4.8	7	30.4	5	18.5	1	11.1
D	15	8.2	3	14.3	4	17.4	2	7.4	2	22.2
Total	142/ 182	77.9	9/ 21	38.2	16/ 23	78.2	14/ 27	100	6/ 9	66.6

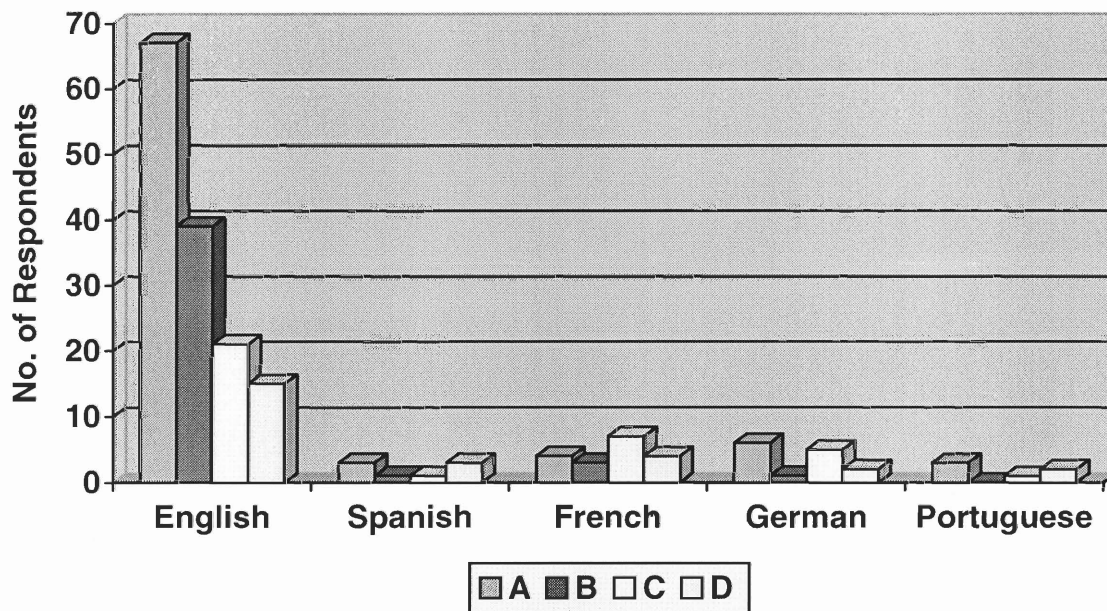
Chart 5A: No. of Responses

Chart 5B: Percents

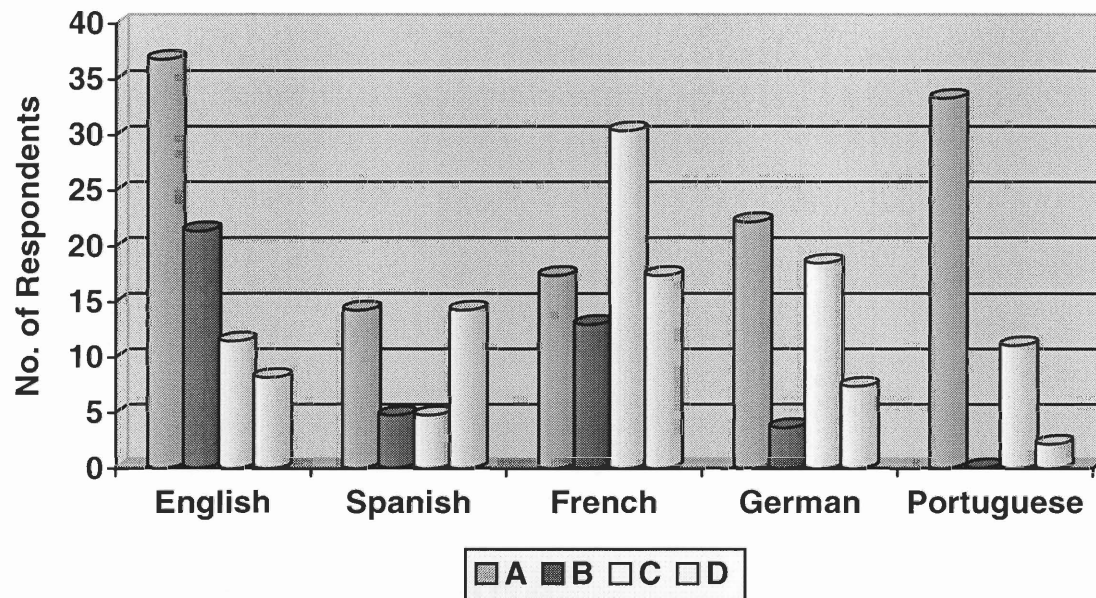
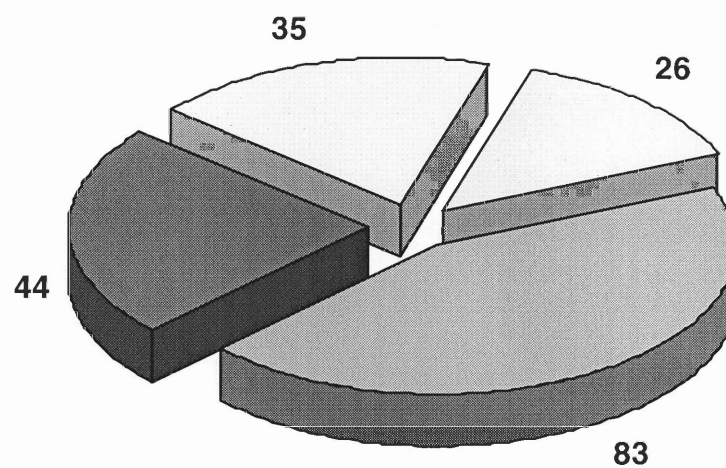


Chart 5C: No. of Responses for each Category



6- How familiar are you with the concept of a cybermall (Internet shopping mall or virtual mall)?

- A. Very Familiar
- B. Familiar
- C. Unfamiliar
- D. Very Unfamiliar

Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	19	10.4	3	14.3	9	39.1	7	25.9	2	22.2
B	113	62.1	2	9.5	11	47.8	15	55.6	2	22.2
C	34	18.7	13	62.0	1	4.4	3	11.1	1	11.1
D	16	8.8	3	14.2	2	8.7	2	7.4	4	44.5
Total	182	100	21	100	23	100	27	100	9	100

Chart 6A: No. of Responses

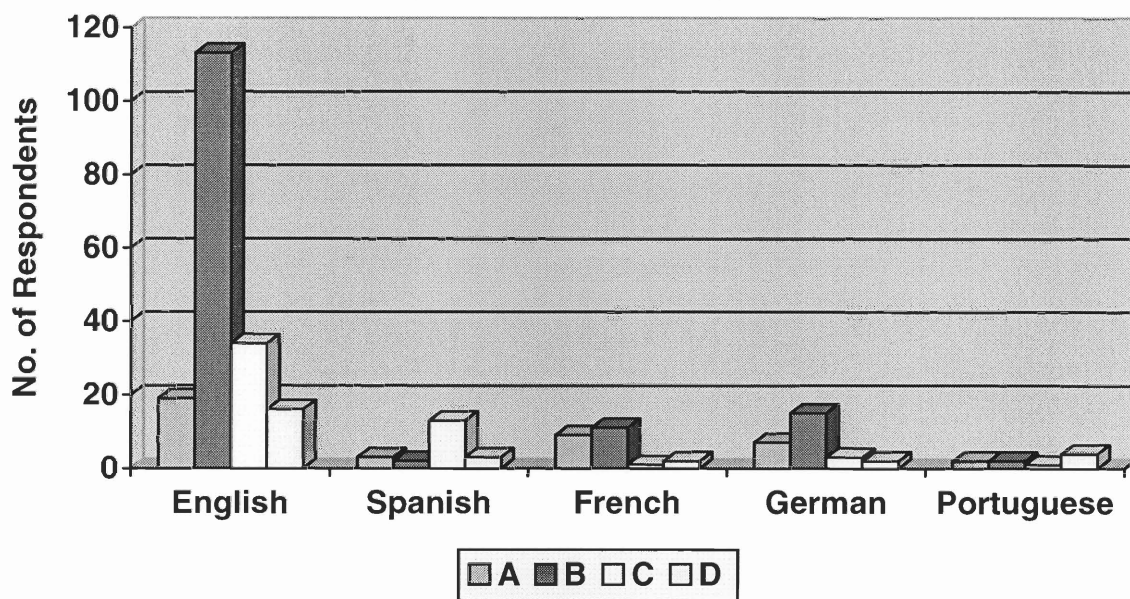


Chart 6B: Percents

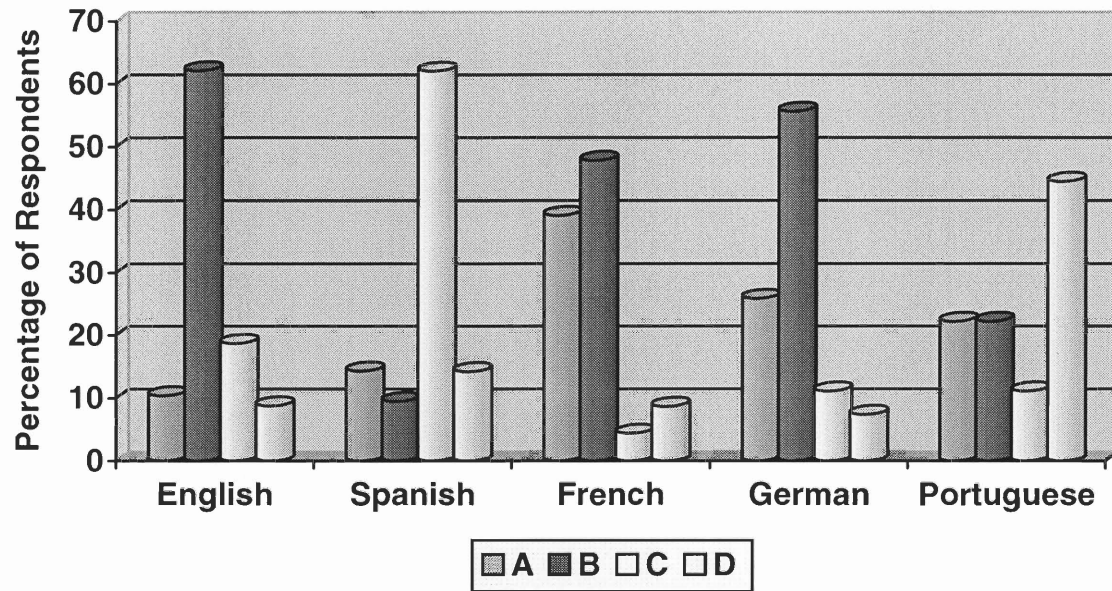
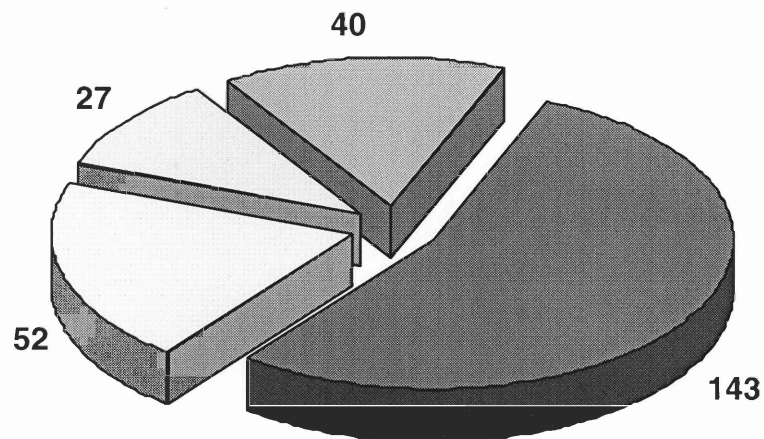


Chart 6C: No. of Responses for each Category



7- Do you purchase products through cybermalls, such as iMall.com, QVC.com, Spree.com, MallofAmerica.com or Yahoo.com?

Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
YES	182	46.4	21	42.9	23	37.1	27	37.5	9	33.3
NO	210	53.6	28	57.1	39	62.9	45	62.5	18	66.7
Total	392	100	49	100	62	100	72	100	27	100

Chart 7A: No. of Responses

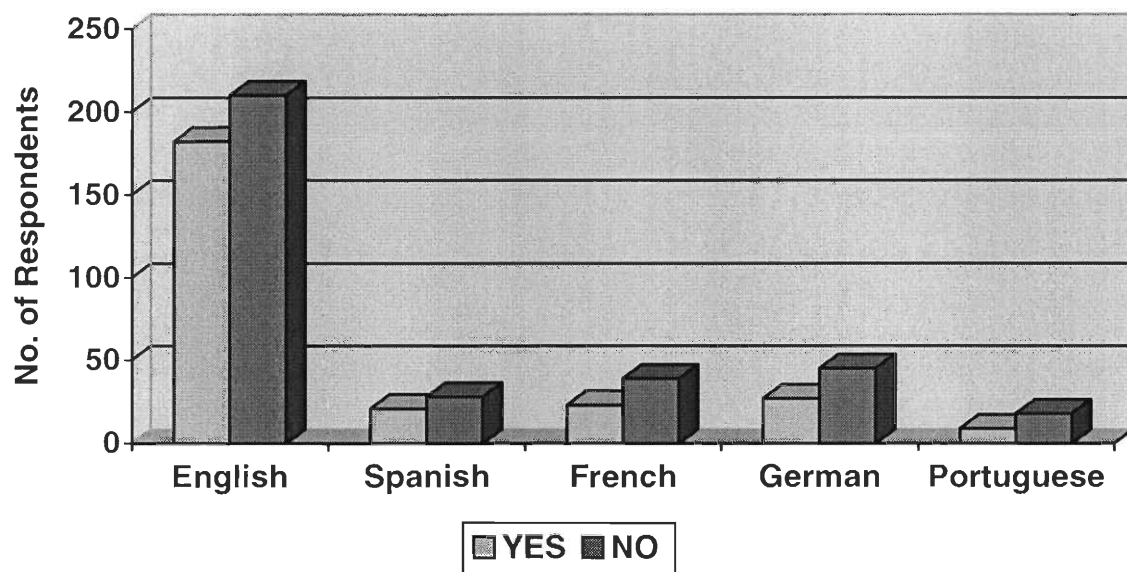


Chart 7B: Percents

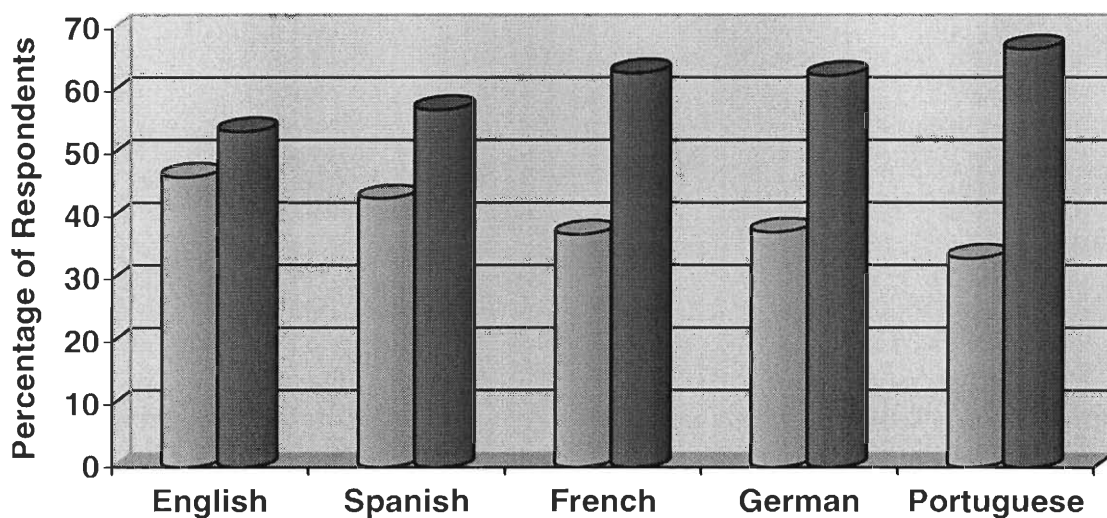
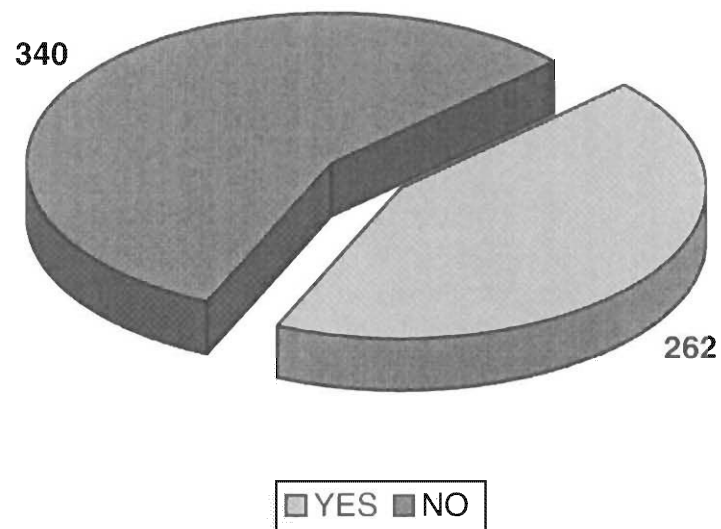


Chart 7C: No. of Responses for each Category



8- Please classify the following factors as advantages, disadvantages or neutral for buying products through a cybermall vs. independent merchant's web site:

- A. Big Advantage
- B. Advantage
- C. Neutral
- D. Disadvantage
- E. Big Disadvantage

Real-time interactivity										
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	41	22.5	3	14.3	15	65.2	17	63.0	8	88.9
B	125	68.7	18	85.7	8	34.8	10	37.0	1	11.1
C	16	8.8	0	0.0	0	0.0	0	0.0	0	0.0
D	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

Chart 8A: No. of Responses

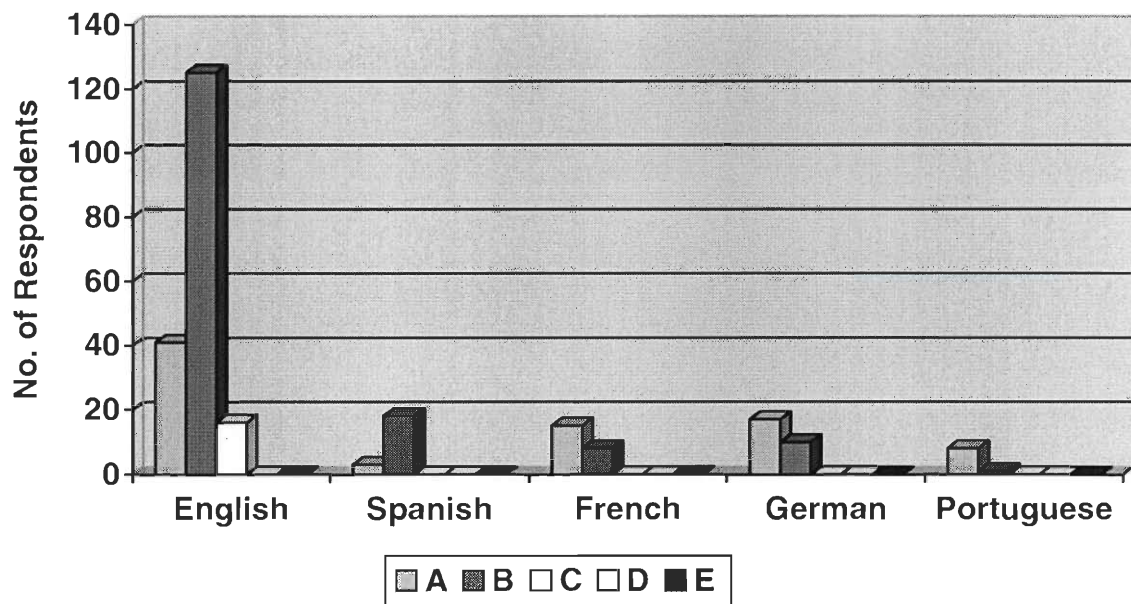


Chart 8B: Percents

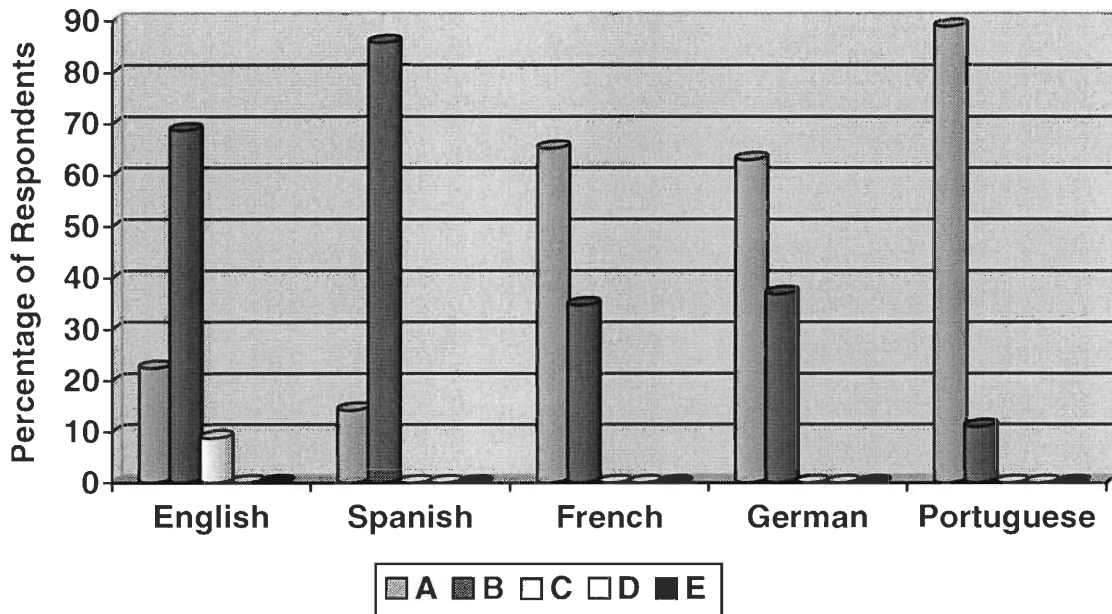
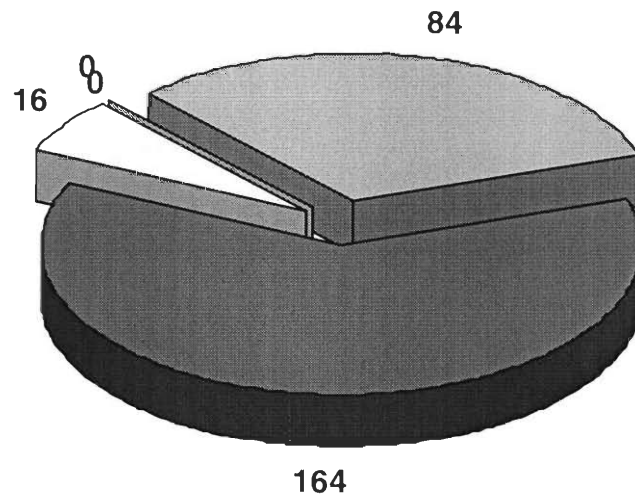


Chart 8C: No. of Responses for each Category



Question 8 (Continued)

Convenience										
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	16	8.8	2	9.5	5	21.7	7	25.9	4	44.4
B	88	48.4	17	90.0	16	69.7	16	59.3	5	55.6
C	67	36.8	2	9.5	1	4.3	1	3.7	0	0.0
D	9	4.9	0	0.0	1	4.3	2	7.4	0	0.0
E	2	1.1	0	0.0	0	0.0	1	3.7	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

Chart 8D: No. of Responses

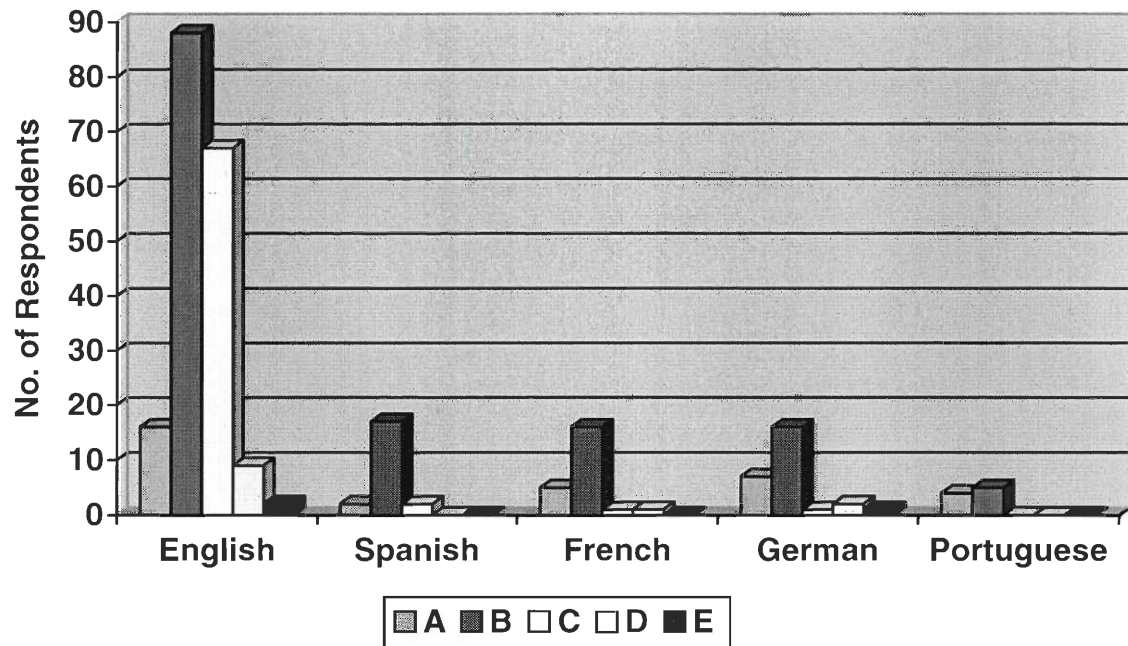


Chart 8E: Percents

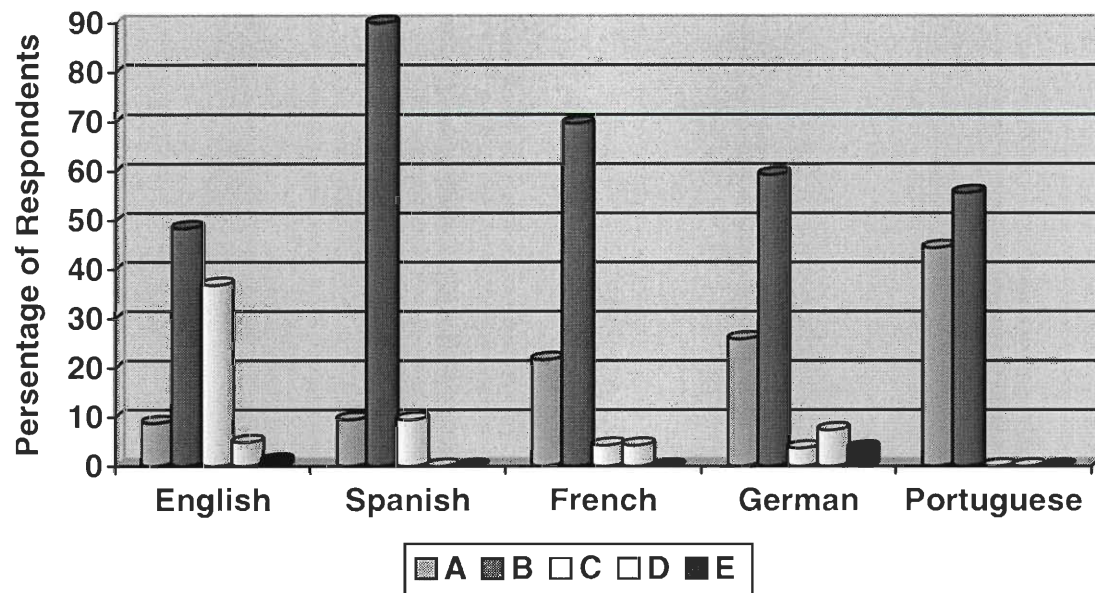
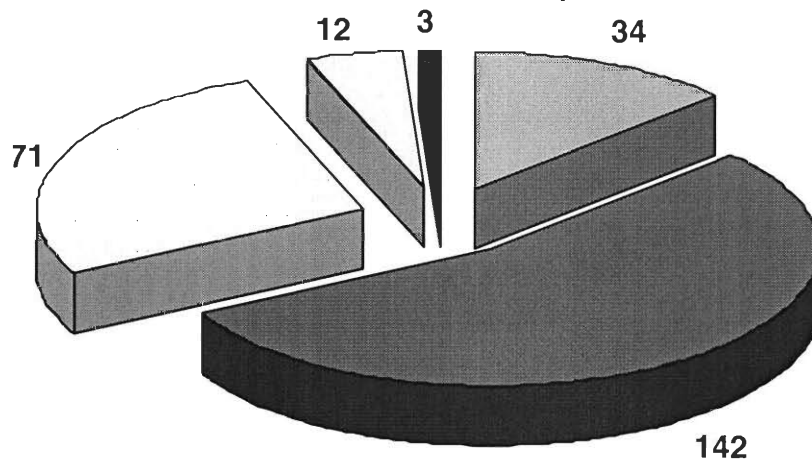


Chart 8F: Total Responses



Question 8 (Continued)

More Options										
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	59	32.4	16	76.2	18	78.3	17	63.0	6	66.7
B	73	40.2	4	19.0	2	8.7	6	22.2	2	22.2
C	37	20.3	1	4.8	2	8.7	1	3.7	1	11.1
D	8	4.4	0	0.0	0	0.0	3	11.1	0	0.0
E	5	2.7	0	0.0	1	4.3	0	0.0	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

Chart 8G: No. of Responses

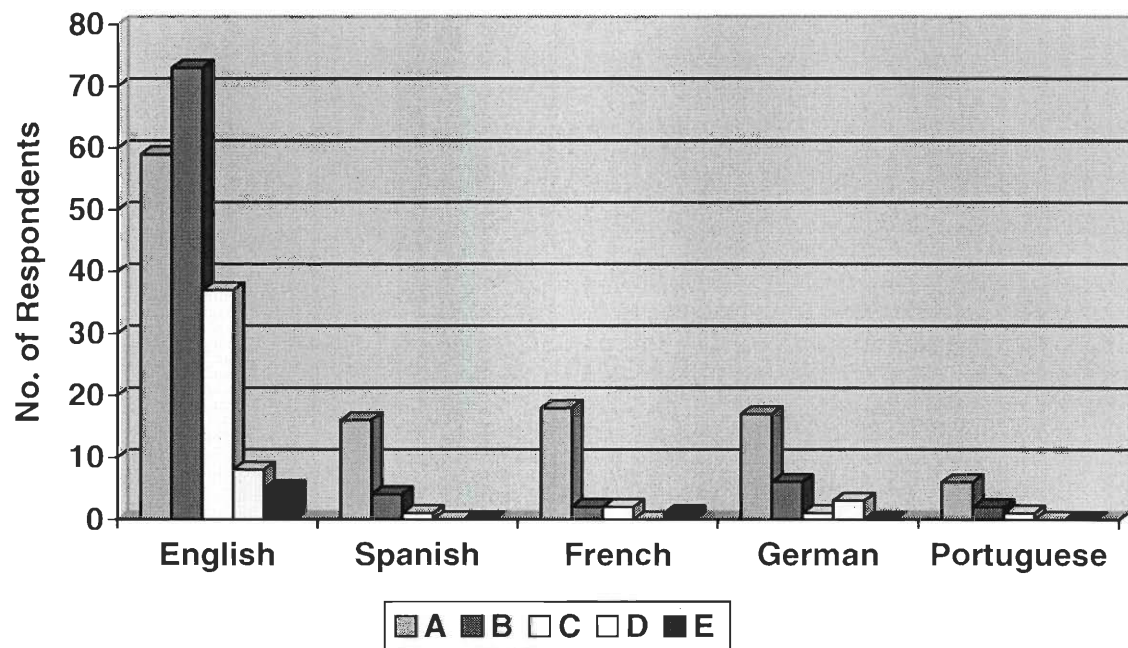


Chart 8H: Percents

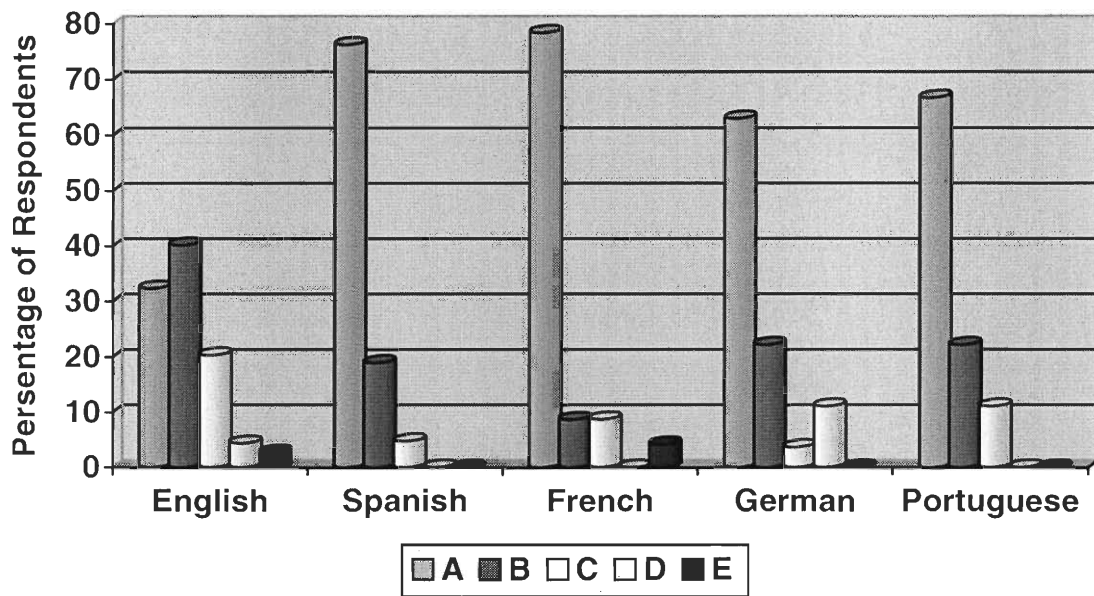
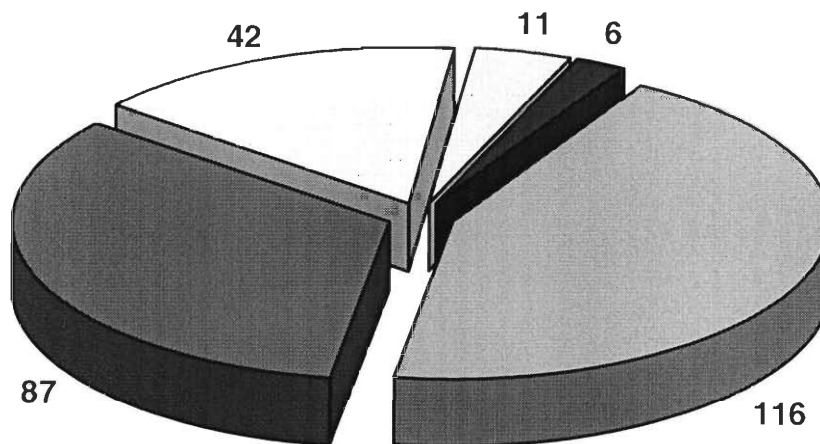


Chart 8I: Total Responses



Question 8 (Continued)

Security										
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	47	25.8	14	66.7	20	87.0	19	70.4	7	77.8
B	98	53.8	6	28.6	2	8.7	5	18.5	2	22.2
C	32	17.6	1	4.7	0	0.0	3	11.1	0	0.0
D	5	2.8	0	0.0	1	4.3	0	0.0	0	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

Chart 8J: No. of Responses

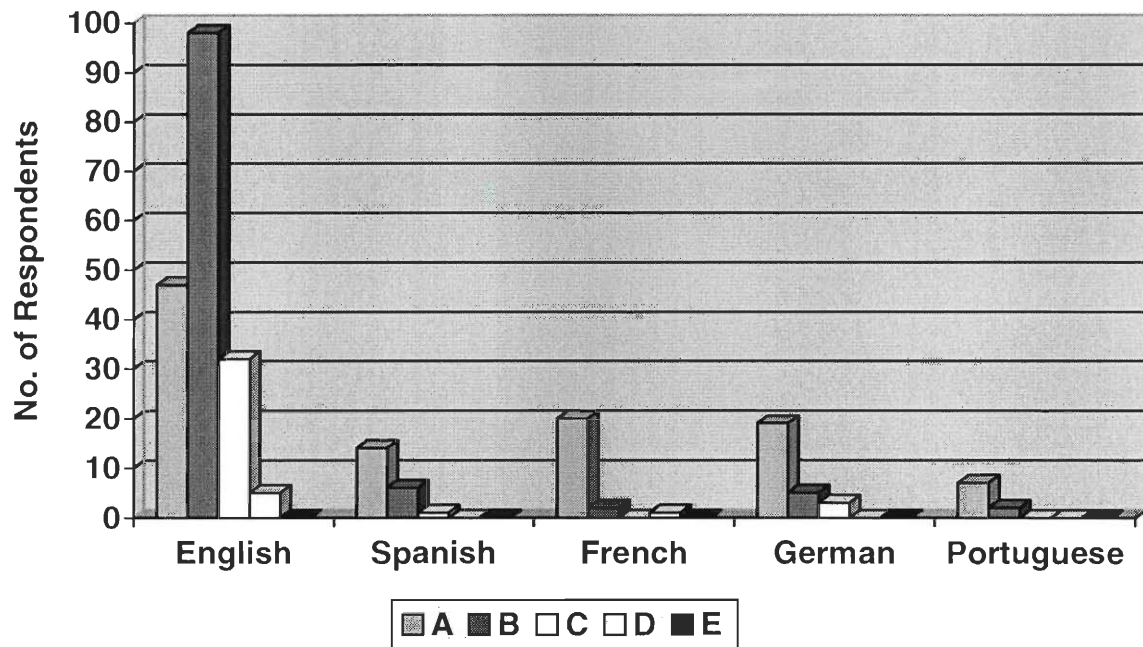


Chart 8K: Percents

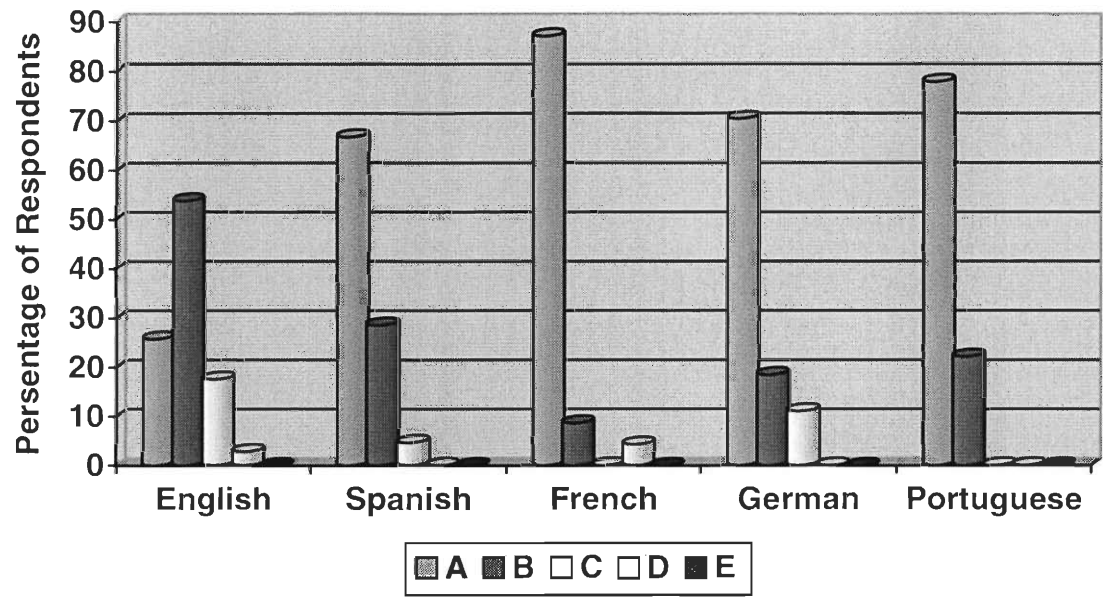
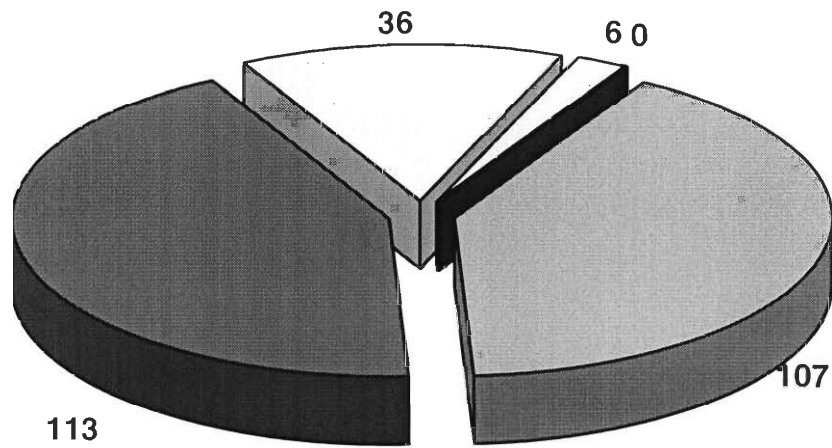


Chart 8L: Total Responses



Question 8 (Continued)

Customer Service										
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	5	2.7	13	61.9	10	43.5	7	25.9	2	22.2
B	8	4.4	2	9.5	4	17.4	2	7.4	3	33.3
C	86	47.3	2	9.5	7	30.5	11	40.8	3	33.3
D	72	39.6	3	14.3	1	4.3	5	18.5	1	11.2
E	11	6.0	1	4.8	1	4.3	2	7.4	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

Chart 8M: No. of Responses

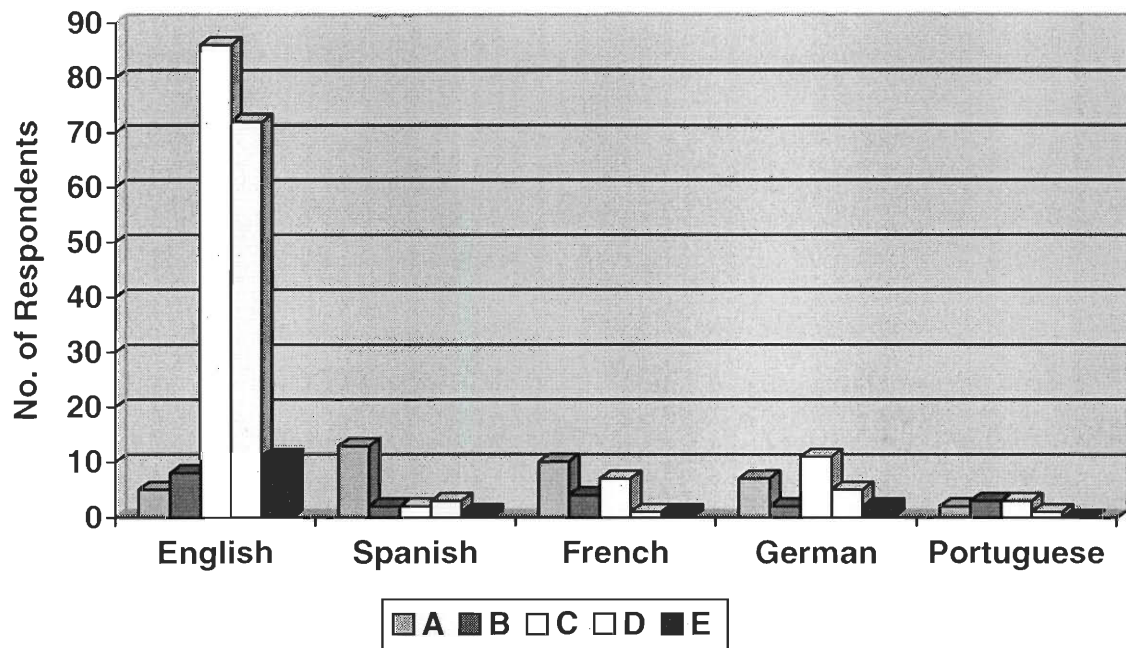


Chart 8N: Percents

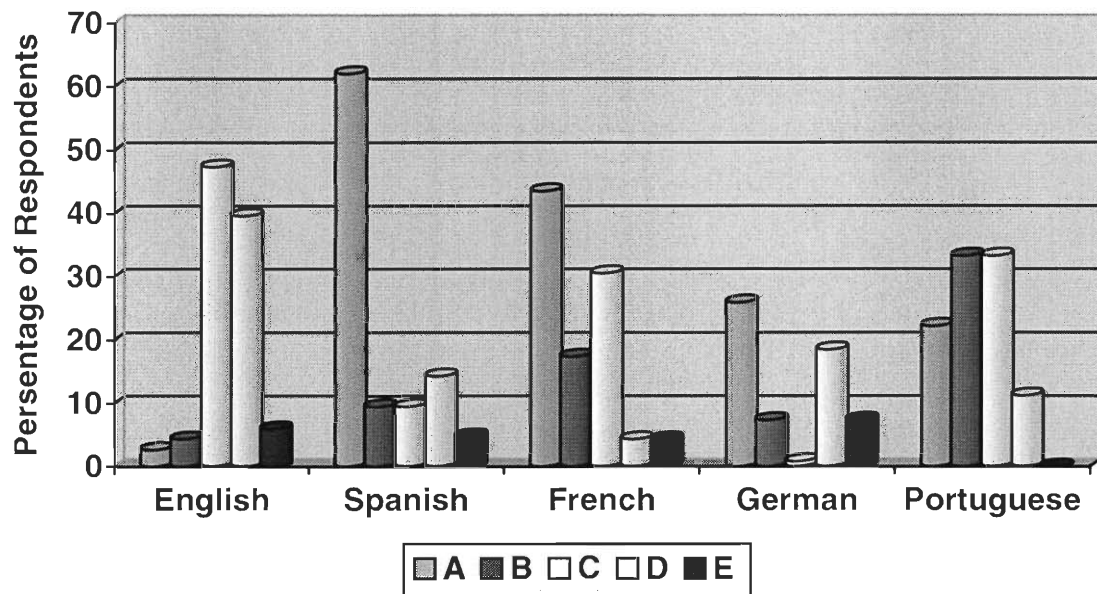
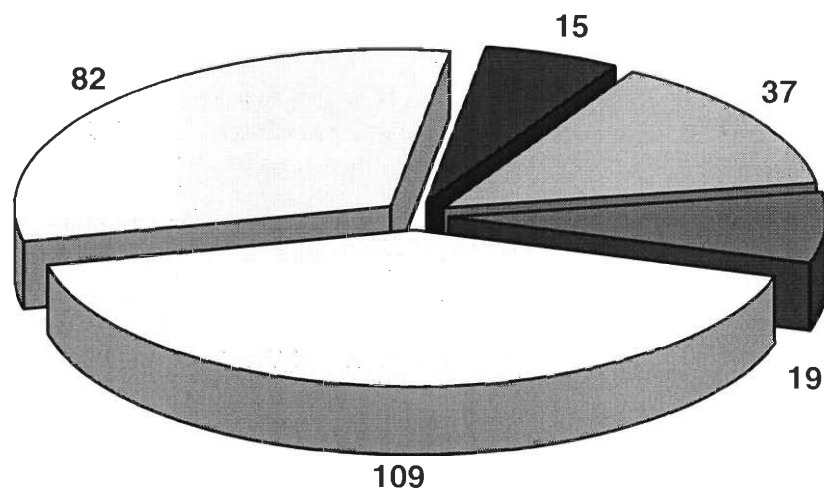


Chart 8O: Total Responses



Question 8 (Continued)

Discounts and Deals										
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	52	28.6	11	52.4	3	13.0	6	22.2	2	22.3
B	63	34.6	3	14.3	9	39.2	5	18.5	3	33.3
C	37	20.3	5	23.7	7	30.4	12	44.4	1	11.1
D	16	8.8	1	4.8	2	8.7	3	11.1	3	33.3
E	14	7.7	1	4.8	2	8.7	1	3.8	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

Chart 8P: No. of Responses

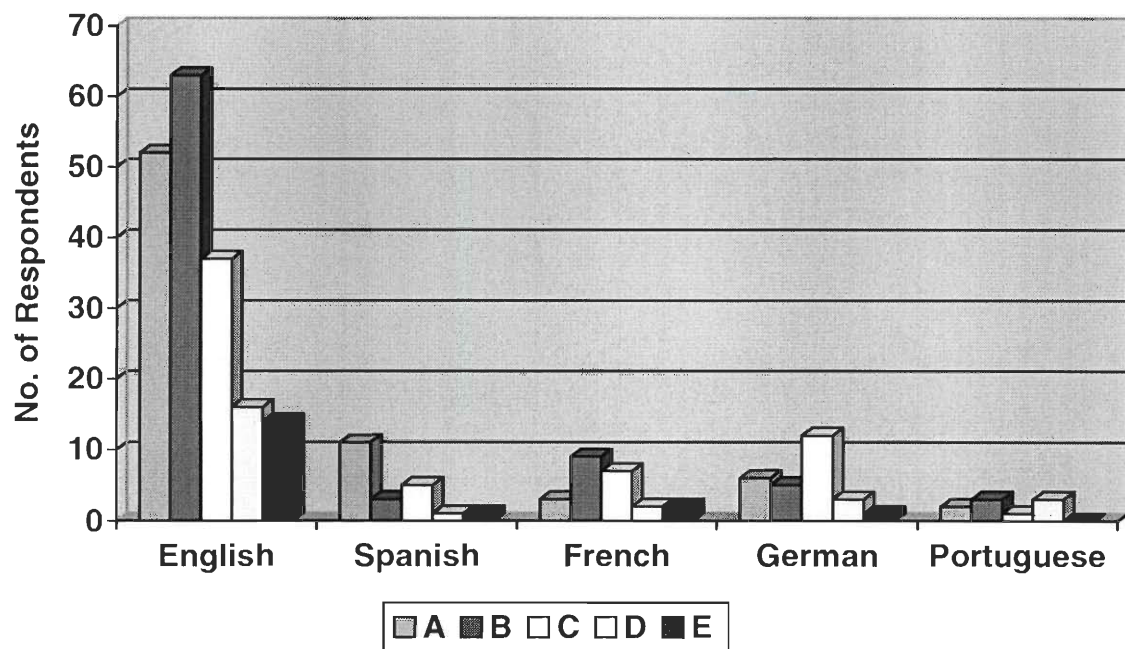


Chart 8Q: Percents

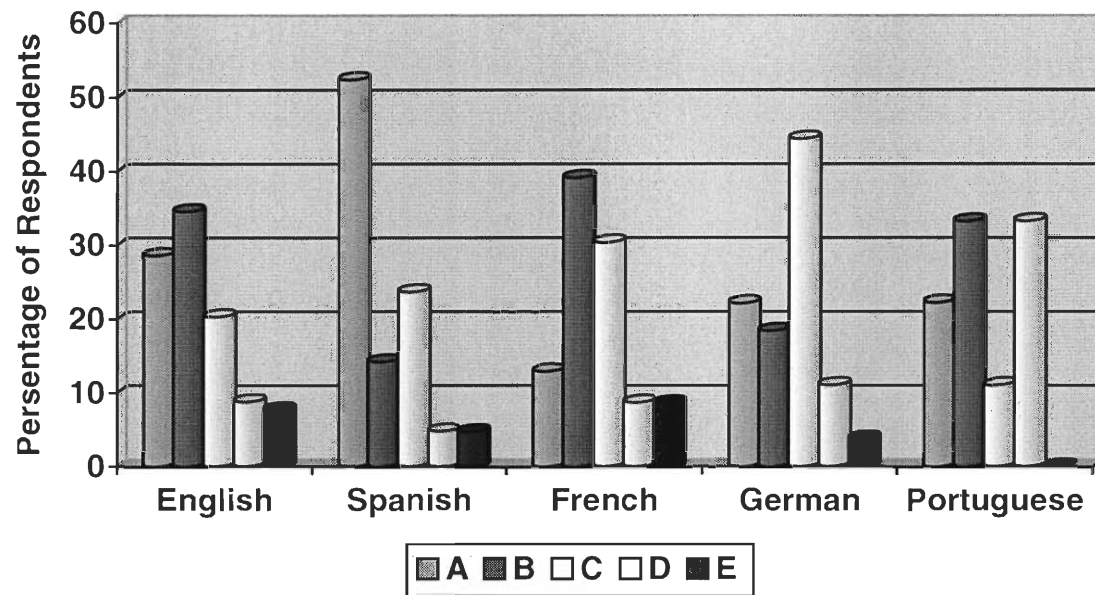
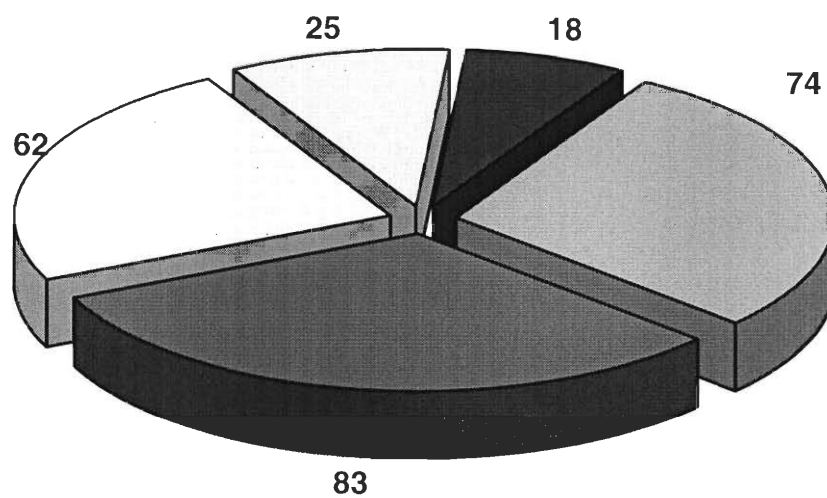
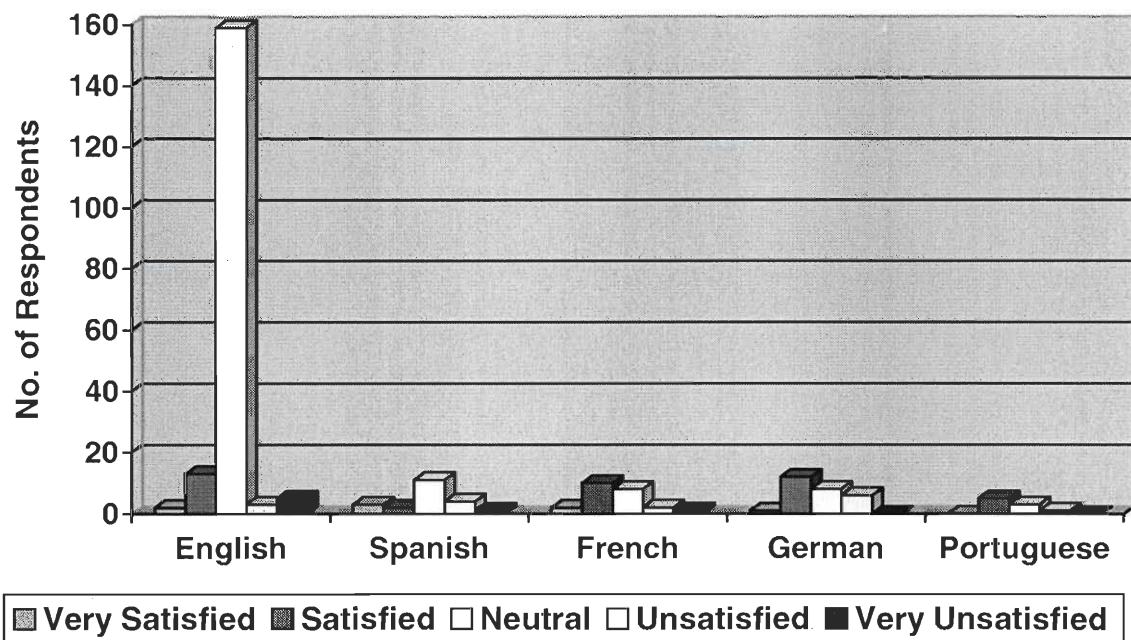


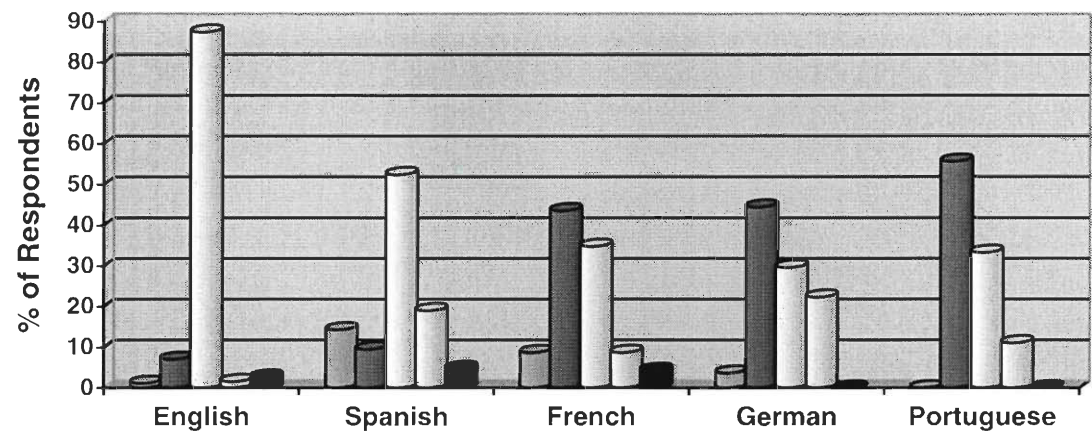
Chart 8R: Total Responses



9- Please rate your degree of satisfaction with your shopping experience through a cybermall.

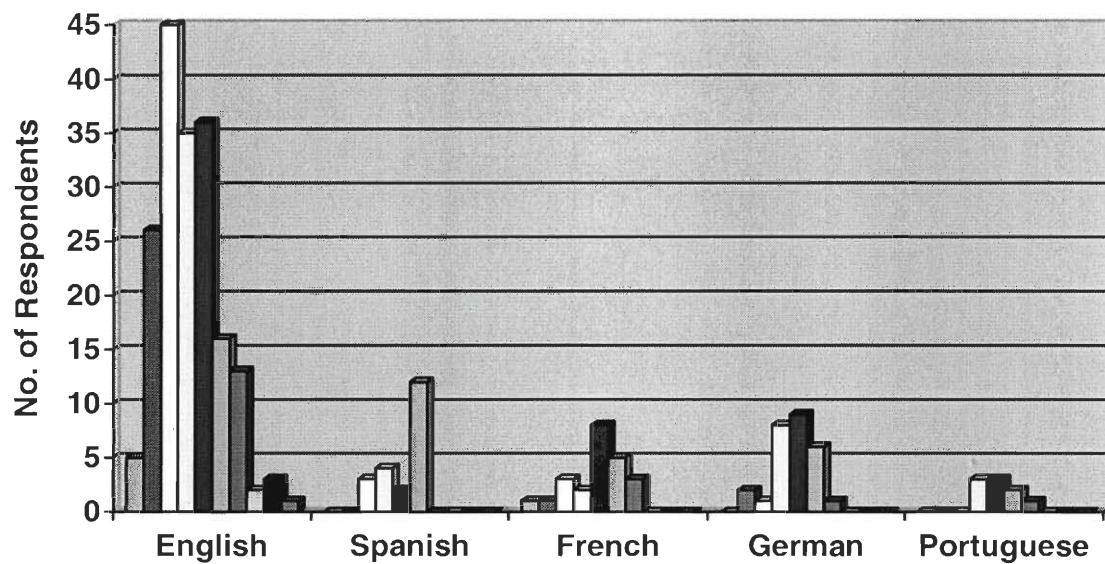
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
Very satisfied	2	1.2	3	14.3	2	8.7	1	3.7	0	0.0
Satisfied	13	7.1	2	9.5	10	43.5	12	44.4	5	55.5
Neutral	159	87.4	11	52.4	8	34.8	8	29.6	3	33.3
Unsatisfied	3	1.6	4	19.0	2	8.7	6	22.3	1	11.1
Very Unsatisfied	5	2.7	1	4.8	1	4.3	0	0.0	0	0.0
Total	182	100	21	100	23	100	27	100	9	100



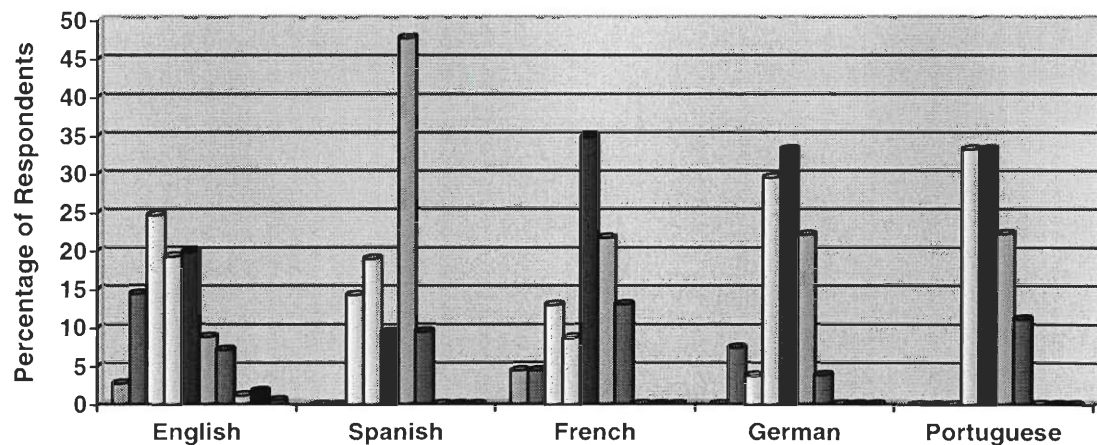


10- What's your age group?

Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
(15-20)	5	2.7	0	0.0	1	4.4	0	0.0	0	0.0
(21-25)	26	14.4	0	0.0	1	4.4	2	7.4	0	0.0
(26-30)	45	24.7	3	14.3	3	13.0	1	3.7	0	0.0
(31-35)	35	19.2	4	19.0	2	8.7	8	29.6	3	33.3
(36-40)	36	19.8	2	9.5	8	34.8	9	33.3	3	33.3
(41-45)	16	8.8	10	47.7	5	21.7	6	22.2	2	22.3
(46-50)	13	7.1	2	9.5	3	13.0	1	3.8	1	11.1
(51-55)	2	1.1	0	0.0	0	0.0	0	0.0	0	0.0
(56-60)	3	1.7	0	0.0	0	0.0	0	0.0	0	0.0
(60+)	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0
Total	182	100	21	100	23	100	27	100	9	100



■ 15-20 ■ 21-25 □ 26-30 □ 31-35 ■ 36-40 ■ 41-45 ■ 46-50 □ 51-55 ■ 56-60 ■ 60+

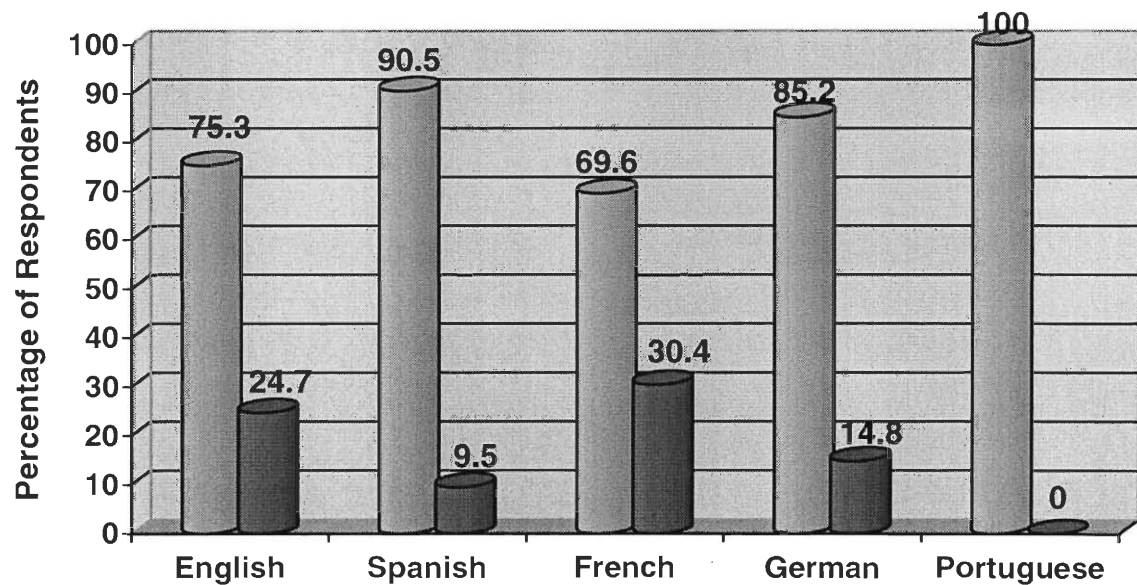
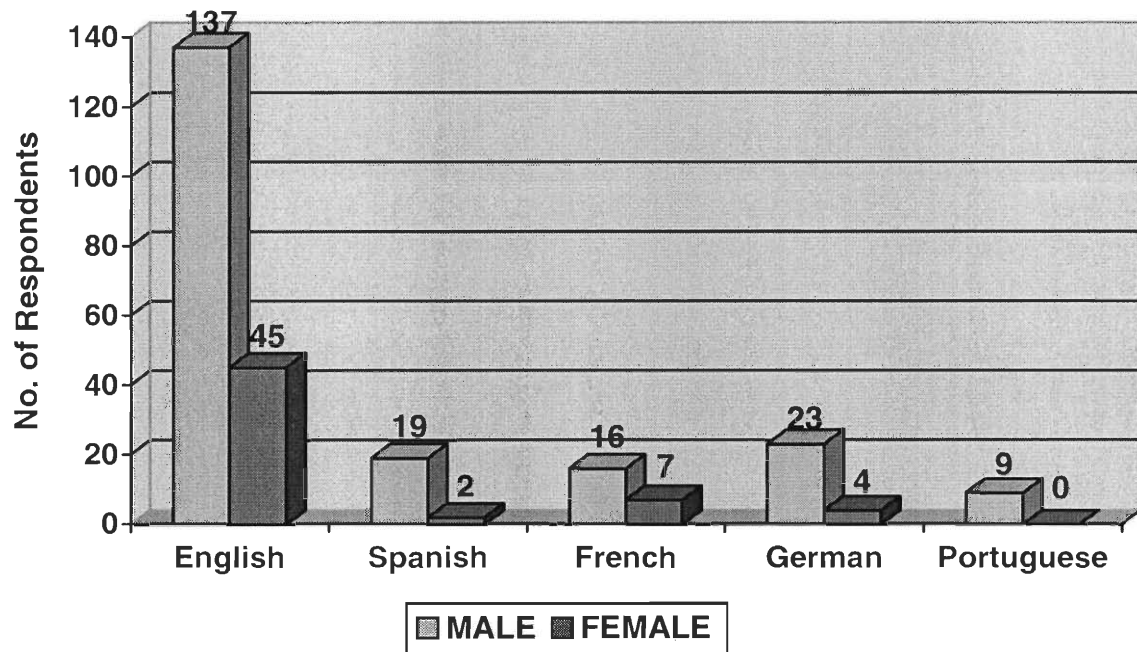


11- What's your gender?

Male

Female

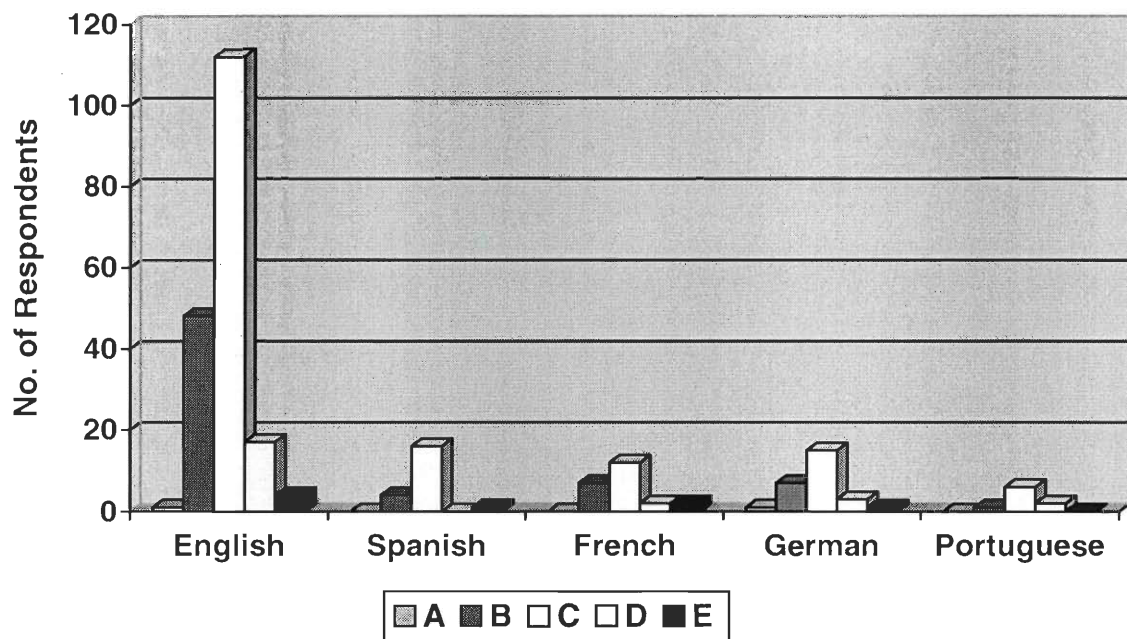
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
Male	137	75.3	19	90.5	16	69.6	23	85.2	9	100
Female	45	24.7	2	9.5	7	30.4	4	14.8	0	0.0
Total	182	100	21	100	23	100	27	100	9	100

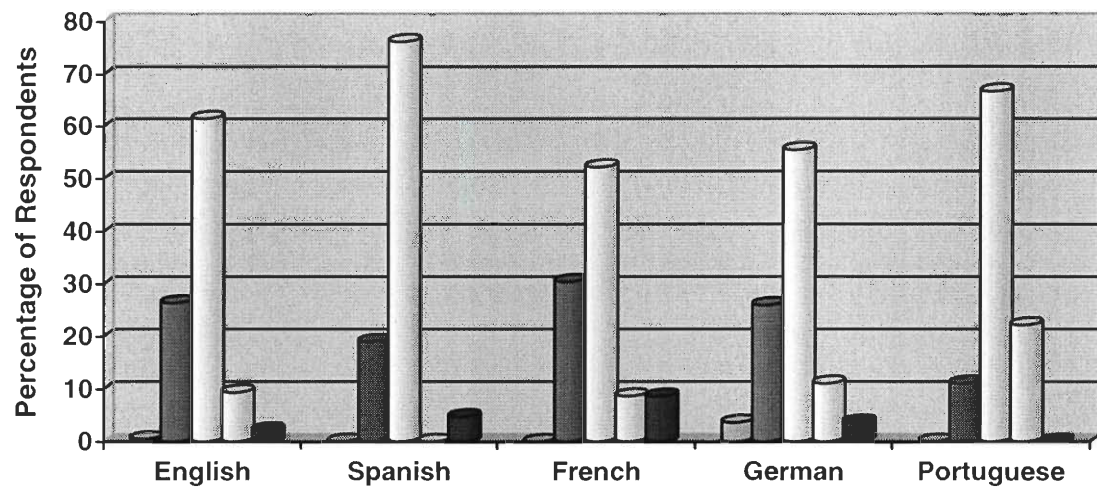


12- What's your level of education?

- A. Some High School (not graduated)
- B. High School graduate
- C. College Graduate/Bachelors
- D. College Graduate/Masters
- E. College Graduate/PhD+

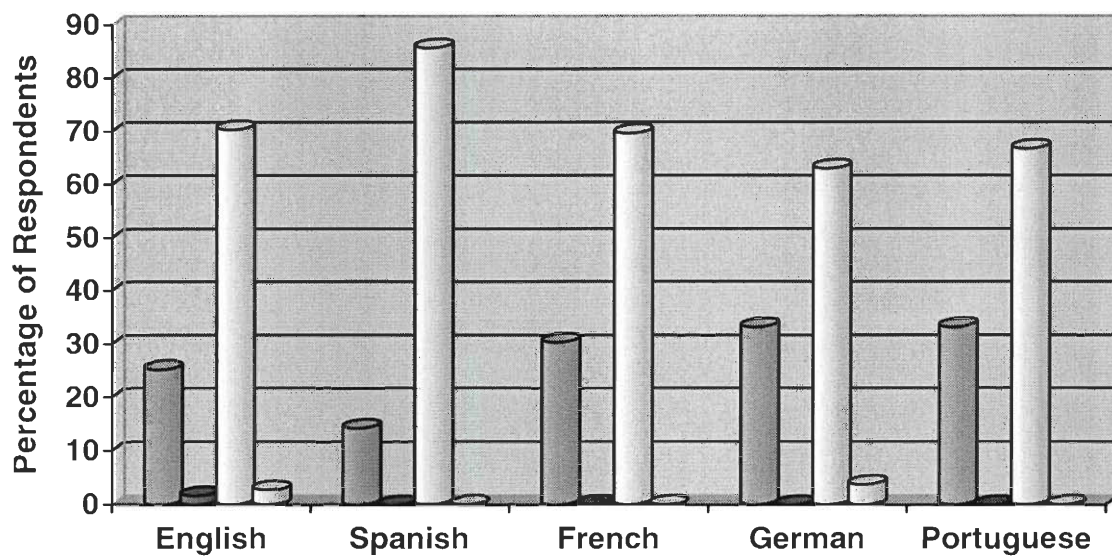
Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
A	1	0.5	0	0.0	0	0.0	1	3.7	0	0.0
B	48	26.4	4	19.0	7	30.4	7	26.0	1	11.1
C	112	61.5	16	76.2	12	52.2	15	55.5	6	66.7
D	17	9.4	0	0.0	2	8.7	3	11.1	2	22.2
E	4	2.2	1	4.8	2	8.7	1	3.7	0	0.0
Total	182	100	21	100	23	100	27	100	9	100





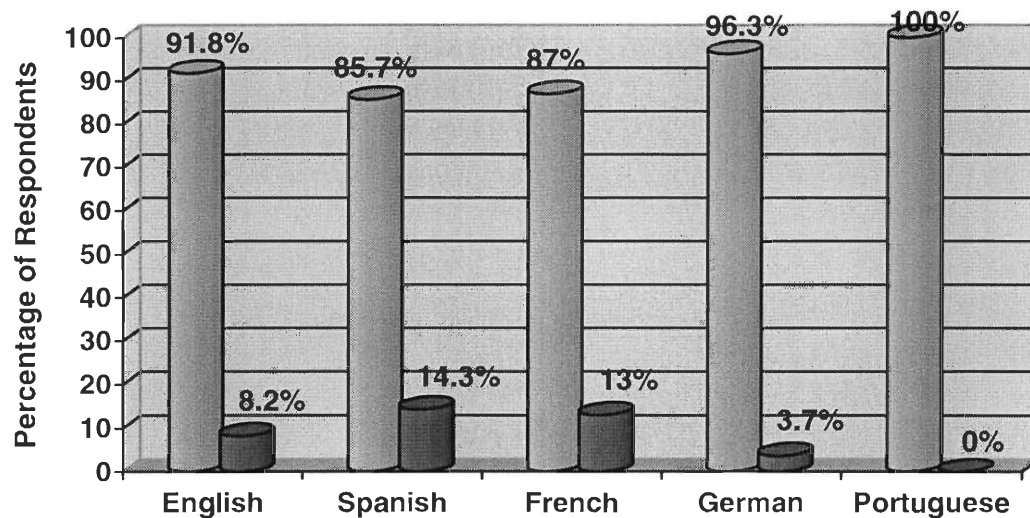
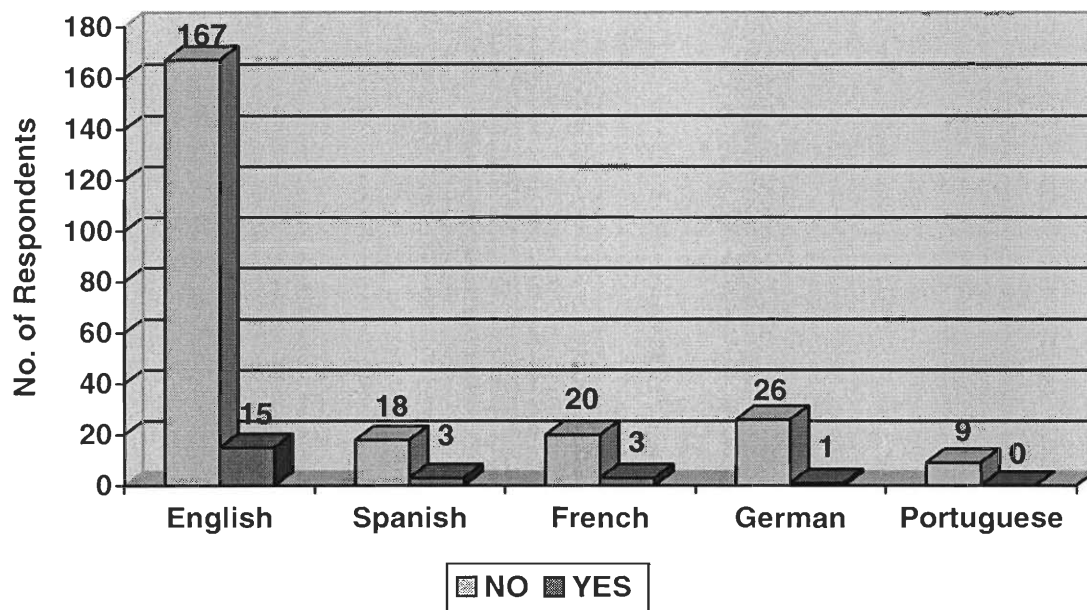
13- What's your occupation/status:

Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
Student	46	25.3	3	14.3	7	30.4	9	33.3	3	33.3
Blue Collar	3	1.7	0	0.0	0	0.0	0	0.0	0	0.0
Professional	128	70.3	18	85.7	16	69.6	17	63.0	6	66.7
Retired	5	2.7	0	0.0	0	0.0	1	3.7	0	0.0
Total	182	100	21	100	23	100	27	100	9	100



14- Is your business directly associated with the Computer Industry?

Language	English		Spanish		French		German		Portuguese	
Choice	Tot.	%	Tot.	%	Tot.	%	Tot.	%	Tot.	%
NO	167	91.8	18	85.7	20	87.0	26	96.3	9	100
YES	15	8.2	3	14.3	3	13.0	1	3.7	0	0.0
Total	182	100	21	100	23	100	27	100	9	100



APPENDIX B: CYBERMALL SURVEY: BUSINESS PERSPECTIVE

Purpose:

My intentions are to explore and examine the pros and cons of cybermalls. One way that users of the World Wide Web find sites they like is by browsing cybermalls. Like regular malls, these cybermalls are large Web sites where several online shops are gathered together. Usually the sites have something in common (a standardized environment)--the same type of product or service or the same geographic location. Visitors to the online version of a mall will find either lists of the shops in the mall or icons representing each shop. Clicking on the name of the store or the icon links immediately to the shop. Other terms for cybermalls are virtual malls, Internet shopping malls/centers, Web malls, and online malls.

This SURVEY is part of an ongoing project that I am working on at the Worcester Polytechnic Institute (WPI). The major advisor for the project is Professor Ted A. Haggblom haggblom@wpi.edu from the Management Department. The project identifies, investigates, and reports on cybermalls and their pros and cons as an online business model of electronic commerce (e-commerce). In addition, the report examines how cybermalls as technology interacts with societal structures and values of the online community. Your role, as a member of the online community, in this survey is to express yourself freely and honestly answer all the questions below. Your participation will be considered valid if and only if all the questions are answered.

Method:

This questionnaire operates on a simple multiple-choice system. To make an answer, click on the appropriate response button. To change an answer, just click on the other answer. You may scroll up or down the page as necessary. Once you have entered all your answers, click on the **Submit** button at the end of the questionnaire.

Important: *All your questionnaire answers will remain anonymous. No information that links your answers with your identity will be sold or furnished to any company or agency for any commercial, marketing, or political purpose whatsoever.*

Please answer the following questions ONLY IF your company has online operations.

1- How long have you been a member of the online community?

☐ Less than 1 year ☐ 1 to 3 years ☐ 4 to 6 years ☐ 7 to 9 years ☐ guru

2- How familiar are you with the concept of a cybermall (Internet shopping mall)?

☐ Very Familiar ☐ Familiar ☐ Unfamiliar ☐ Very Unfamiliar

3- Do you have an account with a cybermall, such as iMall.com, QVC.com, Spree.com?

☐ Yes ☐ No

If Yes, then what is the name of the cybermall:

** If you answered Yes to question 3, then please answer questions 4, 5, and 6. Otherwise, I would like to thank you for your valuable time and I appreciate your participation.*

4- Please classify the following factors for participating in a cybermall vs. having an independent cyberstore as advantage, disadvantage or neutral:

Exposure

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Convenience

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Options

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Traffic

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Security

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Customer service

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Procedures and contract obligations

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Control over other participating sites

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Business and Web site independence

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Built-in Central Purchasing System

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

Equal opportunity (promotion, advertising, directory listing, etc.)

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

More competition

☐ Big Advantage ☐ Advantage ☐ Neutral ☐ Disadvantage ☐ Big Disadvantage

5- Please rate your degree of satisfaction with your business experience with your cyberstore?

☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Unsatisfied ☐ Very Unsatisfied

6- Do you plan on terminating your account with your cybermall and creating an independent stand-alone cyberstore? Why, why not?

☐ Yes ☐ No

Reason(s):

.....

.....

7- How long has the business existed:

- ☐ less than a year
- ☐ 2-4 years
- ☐ 5-7 years
- ☐ 8-10
- ☐ 15+
- ☐ 20+
- ☐ 30+
- ☐ 50+
- ☐ more

8- How many employees do you have:

- ☐ 1-5 ☐ 6-10 ☐ 11-20 ☐ 21-30 ☐ 50+ ☐ 100+ ☐ 500+
- ☐ 1000+ ☐ more

9- Is the business directly associated with the Computer Industry?

☐ Yes ☐ No

10- What's the business's Industry/Category:

- ☐ Education
- ☐ Government
- ☐ Sales
- ☐ Manufacturing
- ☐ Arts/Creative (manufacturing)
- ☐ Publishing (information/all media types)
- ☐ Service/Distribution/Consulting
- ☐ Other

I would like to thank you very much for your valuable time and I appreciate your participation.

All results will be posted on this site: <http://www.os.com/~youssef/iqp.html>, when I am done with the project. So please stop by later to take a look at the findings and provide me with your feedback.

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IQP/MQP SCANNING PROJECT



APPENDIX D: Premium Malls

iMALL

Hundreds of shops with clear pictures and pricing of products. Shop by category or search engine, and purchase with secure online ordering.

Buy.com

The Internet Computer Superstore - with the lowest prices on earth on over 30,000 computer hardware and software products. Separate sections for books, music, games, and so on.

Worldlink

A unique online shopping mall that showcases the top items from many of the worlds best mail order catalogs. The Web site has been created to facilitate bringing the worldwide Web to Mail Order Catalogers.

Spree.com

Register with this mall for free and earn cash back every time you shop! Spree.com offers cash commissions, special promotions, and a free website for members, plus tons of products and services. Check it out - you won't be disappointed.

Azazz!

Azazz offers more that 12,000 brand name products from more than 200 product manufacturers, and the numbers continue to climb. The site also includes a personal shopper to help with any questions you may have about the site.

iQVC Shop

The largest general merchant store online, offering the safest and most convenient way to shop. iQVC has over 100,000 brand name products covering electronics, home, kitchen, office, fashion, jewelry and much more. 100% satisfaction guaranteed!

Buylink.com

With over 2,000 vendor lines, it's the gift industry's biggest wholesale gift show - free to show, free to shop. Includes a section for retailers and vendors to register for free.

ShopNow.com

A worldwide leader in easy and affordable commerce solutions, this site allows people to buy and sell anything, at anytime, to anyone, anywhere. Many different categories, from flowers and gifts to travel.

Choice Mall

One of the biggest. Hundreds of great stores listed by multi-level categories, regionally, or with search engine.

The Internet Mall

As big as they get. This mall has everything and plenty of it. Simple to navigate by category or search engine.

Go Shopping Online

At Go Shopping Online, you'll find great products from a variety of quality catalogs for your kids, your home, and yourself. Includes a diverse selection of catalogues, such as Avon, Rubbermaid® Products Online, and Travel 2000 Travel Gear.

Gridmall

You'll find some of the most innovative sites on the internet at Gridmall, with a wide variety of products and services to choose from. Outstanding site design.

Wholesaler.com

A wholesale and retail source for buyers to locate manufacturers and distributors around the globe. Featuring interesting products, trades, services, businesses and professionals.

Virtual Emporium

Almost 200 stores with secure ordering. This site is a cinch to navigate by categories and has a unique "gift finder" tool.

Access Galaxy Mall

Here are hundreds of shops listed by dozens of categories or you can use a search engine. It is a very nice mall and is easy to use with secure ordering.

Accompany.com

Accompany is a unique online buying service that teams you with others across the Web so that each of you is able to purchase cool technology products at lower prices than you could get as individuals.

Shop4.com

Shop4 is the online version of the Shop at Home program offered by The Signature Group. Members enjoy exceptional savings on more than 500,000 name brand products at up to 60% off list prices. You can also register to receive special previews.

Awesome "Mall of the INTERNET"

Lots of shops which are accessible by dozens of product categories. Easy to use with very nice products.

Prodigy Mall

The Prodigy Mall has over 50 brand-name stores and boutiques. Look for the Prodigy Security Guarantee; the promise that your credit card purchase at any mall store will be 100% protected. Shopping on the Internet can't get any safer than that!

Webmarket

WebMarket searches the top online stores to bring you the best prices on the items you're looking for. Just pick a category and start your search!

Shopfanatics

Gourmet cookware, gifts, camping supplies and many other great items can be found at this website. This site also features a free classifieds section, and allows you to get your own free web based email address.

Icemall

Are you looking for cool shopping, refreshing discoveries, unique and friendly shops, and free shopping? You'll find it at Icemall! Lots of different categories, including a free stuff section.

Planet Shopping Network

One of the nicer medium-large malls housing over 200 quality merchants. Simple navigation from clear categories on the home page or you can browse by country. We love their useful tools and shopping tips!

CyberShop

High quality brand name merchandise, such as *Villeroy & Boch*, *Seth Thomas*, and *Burberry*, with excellent photos. You may browse by category, brand name, or boutiques which focus on gift items. An online search engine and universal secure ordering complete the site.

Viamall

There are dozens of shops available with interesting products, great photos and easy secure ordering. Navigation is very simple by category or search engine. You'll have a good time in here.

The Internet Plaza

A beautiful mall with very unique merchandise. The service based areas do not detract from the retail shopper's experience. Simple navigation with a fun atmosphere.

Coolshopping.com

Is it a mall? Maybe not, but you can shop at hundreds of the coolest retail stores from here! Features include the ability to personalize your screen, search engine, and various shop listing formats.

A Great Way To Shop

Yes, it is, with over a hundred shops accessible by category or search engine, and it's fun!

21st Century Plaza

There are dozens of nice shops listed by category. It's an easy to use site with secure ordering throughout and customer service available!

Buy IT Online

Dozens of shops accessible by search engine or categories. We liked their gift ideas section where you can find listings to suit your gift recipient.

ShopWorks

Absolutely everything a mall should be! While they house only ten merchants at this time, every shop is stunning. Excellent merchandise ranging from smoked salmon to jazz music to professional kitchen ware. All of this is presented in a beautifully functional mall with uniform secure ordering throughout.

Glossary²⁹

A

Anonymous

With no traceability; unable to ascertain the actual identity of the claimed identity; very likely to imply naming that is intentionally opaque. Also, without authentication.

Anonymous FTP

Service supported by many Internet hosts. Typically, allows user to download documents, files, programs, and other publicly accessible data using FTP. Users log in using the special user name "ftp" or "anonymous" and their e-mail address as password. May also support uploading of files.

Archive

Storage of document versions, kept for historical or reference purposes. Each document is assigned a version number when entered into an archive.

ARPA (Advanced Research Projects Agency)

Formerly DARPA, Defense Advanced Research Projects Agency, a U.S. government research entity.

ARPAnet

Advanced Research Projects Agency. The predecessor of the Internet. Funded by the U.S. Government, and managed by BBN.

Attachment

Refers to a document or file in its native format (Word, Excel, GIF, etc.) that is "attached" to an e-mail message or discussion group posting, or uploaded to a document management system.

Authentication

The process of verifying to a reasonable degree of certainty that an entity (for example, a person, a corporation, or a computer system) is the entity it represents itself to be.

Authoring tools

A software application which enables programmers (authors) to integrate multimedia components into an interactive application.

Authorization

The process of granting or not granting a user permission to access a specific Web resource or set of resources, based on their identity. If that identity is not authenticated, then the authorization should be considered generic.

B

Bandwidth

The volume of data that the transmission line can carry. Telephone lines have the lowest bandwidth. Fiber optics have the highest bandwidth.

Bankcard

A payment card issued by a bank.

Banner

An area of the screen (usually at the top of the page) that contains a logo, site title, copyright notice, or other information that is consistently displayed.

²⁹ Source: <http://www.bbn.com> & <http://www.whatis.com>

Basic authentication

An authentication mechanism built into the HTTP protocol with which a Web server requests a username and password from a client. These are passed unencrypted across the Internet. It is possible, however, to request authentication via a channel that is encrypted at the transport level (for example, SSL or PCT), in which case, the username and password are encrypted.

Bin

Abbreviation for "binary." bin is frequently used as the name of a directory on a UNIX file system intended to contain executable programs, such as operating system utilities, or CGI programs in a subdirectory of a Web server's content root.

Bits

Ones and Zeros. When information is digitized, it is turned into ones and zeros. So all digital information is made up of bits.

bps

Acronym for bits per second. Loosely used as a synonym of baud, but is about data rate, whereas baud is about signaling rate.

BPS, TBPS, GBPS, MBPS, KBPS, TBPS, GBPS, etc..

Refers to data transmission rates. The higher the rate, the more data that can be transmitted. B usually means bytes and b usually bits. There are eight bits in a byte. T is for Tera, G is for Giga, M is for Mega and K is for Kilo. So, K is a thousand bits or bytes. M is a million, G is a billion and T is a trillion.

Browser

Shorthand for Web browser. A program that "reads" hypertext and displays it as formatted text and images. Browsers allow users to view the contents of a site and navigate from one site to another. Netscape and Internet Explorer are browsers commonly used on the World Wide Web.

Bulletin Boards

Areas where users of an interactive service can communicate publicly with other users. Anyone can post a message for all to read; a reply also can be read by everyone.

Bytes

Bytes are typically eight bits put together to create a single computer character.

C**Cache**

Caches come in many types, but they all work the same way: They store information where you can get to it fast. A Web browser cache stores the pages, graphics, sounds, and URL's of online places you visit on your hard drive: that way, when you go back to the page, everything doesn't have to be downloaded all over again. This speeds things up.

CD-ROM

Compact Disc-Read Only Memory: This is the same disc as the audio compact disc except that it contains optical information, instead of audio information.

Certificate

A digital document attesting to the binding of a public key to a person, company, machine, or other entity. In its simplest form, a certificate contains a public key, the name of its possessor, and a digital signature using the private key of a certifying authority (CA). The CA guarantees that the person or entity named is in fact the legitimate holder of the public key. A certificate also commonly contains the expiration date of the key, the name of the CA that issued the certificate, the serial number of the certificate, and other related information. Certificates are meant as a way around the problem that public keys are intentionally publicly accessible, which makes it possible for any published public key to be claimed by anyone, including

entities to whom (or which) it does not belong. A certificate is a hint, albeit a strong one, that the holder is who they say they are. The final confirmation is an exchange of messages proving that the public key in the certificate matches the private key in the sending entity's possession.

CGI (Common Gateway Interface)

A specification of how a Web server can communicate with a program (script or binary) in a way that provides complete isolation of the server from the program, for the safety of the server. Often such programs are referred to as CGI scripts. When a Web client accesses a URL that points to a CGI script, the HTTP server specified in the URL executes the program, passing to it any data provided by the client in a query string. The output of the CGI script is then returned to the originating client by the HTTP server specified in the original URL.

Charge card

A payment card for which the cardholder is billed without credit terms; the bill must be paid in full each billing period, typically 30 calendar days. An example is the American Express card. Contrast with credit card and debit card.

Chat

Talking on the Internet in real time, generally by typing messages to a group of people, or private messages to a specific user. "Chat rooms" are groups of people that chat about a specific topic, generally by pointing their chat client at a specific chat server.

Cipher

An algorithm for reversible transformation of data.

Client

A computer or software application that uses the services of another computer or server.

Collocated hosting

A form of Web hosting where the customer brings their own equipment into the Web Hosting provider's data center. By collocating their equipment in this fashion, they can take advantage of the provider's abundant bandwidth, as well as other value-added services.

Commerce Service Provider (CSP)

Supplies the system and services to establish the back-office infrastructure for businesses. Major aspects include: the processing of secure transactions, the developing and managing of customer relationships, the collecting of payment, and the delivering of products or services over the Web. A CSP may provide the following services: buyer authentication, order taking, details of what is for sale in an electronic offer, validation, payment processing (via traditional credit card payment processors), and generation of electronic receipts. Fulfillment may be made of electronic goods or physical goods. See also *electronic commerce*.

Community of Interest

An affinity group, or group that shares similar interests, brought together online through chat, discussion groups, and document sharing, for the purposes of collaboration and information and knowledge exchange.

Content

The information contained in a Web site, including the structure in which it is presented.

Content provider

A company, organization, individual, or other entity that makes Web content available on a content server. See also *Internet service provider*.

Cookie

A small amount of information stored on a client computer by a Web site that is sent back to the site each time the user visits it. The use of cookies to maintain persistent, client-side state information significantly extends the capabilities of Web-based client/server applications.

CPU

Central Processing Unit. This is the most powerful microprocessor chip in your computer. Sometimes the term CPU is used to describe the whole box that contains the chip (along with the motherboard, expansion cards, disk drives, power supply, and so on).

Credit

A transaction that credits a buyer's account, usually as the result of the buyer returning a good that was purchased.

Credit card

A payment card used to make purchases and/or to obtain cash. The amount of a credit card purchase or withdrawal is billed to the cardholder periodically (usually monthly) on a statement that aggregates that period's transactions, whereas it is credited immediately to the merchant. Contrast with debit card and charge card.

Credit card payment process

The three-step process that a merchant (or commerce service provider acting on behalf of a merchant) must complete in order to accept credit card payments. This process relies on a credit card processor from whom the merchant obtained a merchant ID. The three steps include: authorization, verification of fulfillment, and settlement.

1) Authorization

- The merchant transmits to its credit card processor the buyer's credit card type and number, expiration date, the seller's merchant ID, and the amount to be paid.
- The credit card processor responds by confirming or denying that the amount can be charged to that credit card number.
- If the response is negative, then authorization is not granted and the purchase cannot occur. If the response is positive, then the amount is reserved on the credit card account for a fixed period. The merchant is given an identifier of the transaction, to be used later for settlement.

2) Verification of fulfillment (if credit transaction response was positive)

- Either deliver the product being purchased,
- Or notify the entity responsible for fulfillment of the order, then wait for confirmation or cancellation of order shipment from that entity.

3) Settlement (only if fulfillment has occurred)

- The merchant transmits to the credit card processor the identifier of the fulfilled transaction for payment is now due.
- The credit card processor instructs the issuing bank to debit the cardholder's account.
- The credit card processor instructs the acquiring bank to credit the merchant's account. The credit usually becomes visible to the merchant after approximately three days.

Cyber-

The prefix cyber- is most often used to make whatever word it's attached to seem hip, cool, and connected in some loose way to the world of computers or the Internet.

Cyberspace

A word used loosely to refer to virtual reality, the Internet, the World Wide Web, and many other kinds of computer systems that users become immersed in.

D

Data

Information in its raw form. The characters, numbers, pixels, bits and bytes that make up digitized information.

Data center

A facility used to house mission critical computer systems and associated components. They generally include environmental controls (air conditioning, fire suppression, etc.), redundant/backup power supplies, and high security. Internet Service and Web Hosting Providers generally locate their Points of Presence and Web server facilities in data centers.

Decryption

Translation of ciphertext into plaintext.

Dial-up

Access to the Internet via a modem and telephone line, which requires that the computer dial a phone number for access. Contrast with leased line.

D**igital**

The representation of analog information as ones and zeros.

Digital signature

A digital signature serves a purpose similar to that of a handwritten signature on a hard copy document, but does so for a digital document. A digitally signed document is not necessarily encrypted, since the purpose of a signature is authentication, not privacy. To digitally sign a message, the sender performs a computation which takes as input both the message to be signed (in its plaintext form) and the sender's private key. The output of this computation is a string of digits that serves as the sender's digital signature, and which is attached to the message. To verify a digital signature, the recipient performs a computation that uses the message in its plaintext form, along with the signature received with the message, and the purported sender's public key, to determine whether or not the signature is valid. A digital signature might be considered invalid for any of the following reasons:

- The private key used to sign the message might not have been the purported sender's.
- The message may have been deliberately altered after it was signed.
- The message or the signature might have been corrupted in transit.

Discussion group

A general term for an online "bulletin board" where you can leave messages and see responses to messages you have left. Discussion groups generally keep a history of comments made, and often support attachments for messages.

Document

May also be referred to as an attachment or file.

Domain

An Internet domain refers to a networked computer accessible through a host, or domain, name. A domain identity includes a distinguishing suffix. Some important domains suffixes are: .com (commercial), .edu (educational, primarily in the U.S.), .net (network operations), .gov (U.S. government), and .mil (US military). Most countries also have a domain. For example, .us (United States), .uk (United Kingdom), .au (Australia). Within the .us domain, there are subdomains for the fifty states, each generally with a name identical to the state's postal abbreviation. Within the .uk domain, there is a .ac.uk subdomain for academic sites and a .co.uk domain for commercial sites.

Domain name

A name for a computer that distinguishes it from all other computers on an internet (such as the Internet or another IP-based network such as an intranet). This name is mapped by DNS to a unique IP address.

Example: www.openmarket.com. (The term 'hostname' has grown to be synonymous with this definition of 'domain name'.)

DNS

Domain Name System. When you send e-mail or point a browser to an Internet domain such as cnet.com, the domain name system translates the names into Internet addresses (a series of numbers looking something like this: 123.123.23.2). The term refers to two things: the conventions for naming hosts and the way the names are handled across the Internet.

Download

To obtain a data file or digital good by transmission over a network, typically by following a URL, or using FTP.

Dynamic

Constantly changing, or generated on-demand. For example, dynamic Web pages are custom generated (generally through a database query) based on a set of parameters supplied by the browser or the end user.

E

Electronic commerce

The electronic transfer of value across the Internet in exchange for the delivery of a service or product. Electronic commerce integrates communications, data management and security services, allowing enterprises and consumers to freely communicate and make purchases from their selection of vendors.

Electronic Data Interchange (EDI)

A standard for the electronic exchange of business documents, such as invoices and purchase orders.

Electronic goods

Software or information products that can be downloaded over the Internet from a fulfillment server. See also *physical goods*.

Electronic offer

An electronic offer is a description of an item for sale on the Internet. Typically, it contains information such as the price of an item, the quantity sold, a short description of the item, whether the item is taxable, and so forth. A electronic offer can describe either an electronic good (information that can be transmitted to the purchaser over the Internet) or a physical good (a physical item that must be shipped to the purchaser). Electronic offers enable an important separation of selling concerns from payment concerns. The merchant's electronic storefront focuses on, for example, presenting goods in the most attractive possible way, setting prices, and managing inventory. The commerce service provider focuses on, for example, authenticating orders, performing tax and shipping calculations, interacting with the credit card issuing bank, getting payment, and providing online customer status service.

Electronic receipt

An electronic receipt is a proof that an item was purchased via the Internet. For an electronic good (information that can be transmitted to the purchaser over the Internet), the electronic receipt allows the purchaser to download the item from a merchant's fulfillment server. For a physical good (a physical item that must be shipped to the purchaser), the electronic receipt allows the purchaser to access up-to-date information on the status of the order (date shipped, etc.).

E-mail (electronic mail)

A method of electronically passing messages from one computer user to another, typically over computer networks.

Emoticon

Clusters of punctuation such as :) and : > that are used to set the tone for the sentence that precedes them.

Encryption

Encryption is the transformation of data into a form unreadable by anyone without a secret decryption key. Its purpose is to ensure privacy by keeping the information hidden from anyone for whom it was not intended, including those who can see the encrypted data. Encryption may be used to make stored data private (e.g., data that is stored on a potentially vulnerable hard disk), or to allow a nonsecure communications channel to serve as a private communications channel. Encryption is sometimes described as the process of converting plaintext into ciphertext.

Extranet

A controlled business computer networking application that uses Internet technology to link businesses with their suppliers, customers, or other businesses that share common goals.

F

FAQ (Frequently Asked Questions)

A FAQ file presents collected answers for commonly asked questions about a particular subject.

Firewall

A set of software and hardware systems that reside between an organization's internal network and the rest of the Internet. It is designed to prevent unauthorized access to the organization's network from unauthorized users.

Freeware

Freeware is a class of software that you can download, pass around, and distribute without payment. However, it's still copyrighted, so you can't turn around and decompile it or sell it as your own.

FTP

File transfer protocol is the method used on the Internet to copy a file from one computer to another. Using FTP, you can search through directories on computers around the world, locate a file, and transfer a copy of it to your machine.

G

Gateway

- A computer or process that serves as the single point of contact between two network entities and through which all traffic between the two network entities must therefore pass.
- A program called on a Web server via the Common Gateway Interface (CGI).

Gigabyte

1,073,741,824 bytes. Abbreviated as GB.

Group

One or more users who share the same group ID. A user may be a member of more than one group. Group members may be other groups.

Groupware

Software tools and technology to support groups of people working together on a project, often at different sites.

GUI

Graphical User Interface. The front-end interface and navigation design of an application.

H

Hit

A Web server is said to receive a hit when it receives an HTTP request from a Web client such as a browser. Typical hits occur when a browser sends a request for an HTML page, or an inline graphic that appears on the page.

Home page

The main introductory page for a particular Web site. A home page typically provides an overview of the purpose of a site and includes links to the other resources available at that site.

Hot link

A mechanism for sharing data between two application programs or sites on the Web. Clicking on a hot link in one site takes the user to another site specified by the link (see "image map").

HTML (HyperText Markup Language)

- Hypertext Markup Language codes data content in hypertext documents for platform-independent presentation. HTML documents are appropriate for delivering information across the World Wide Web.
- Commonly used file extension for HTML document files.

HTTP (Hypertext Transfer Protocol)

HTTP is a client/server protocol for delivering hypertext material across an internet. HTTP is stateless: when a client makes multiple requests to a single HTTP server, each request is treated independently. HTTP servers do not remember the earlier requests. The stateless protocol allows HTTP servers to respond to requests quickly. See also *web*, *Web server*, *Web client*.

HTTPS (Hypertext Transfer Protocol - Secure)

A variant of HTTP for handling secure transactions. Browsers that support the URL access method, "https", connect to HTTP servers using SSL. "https" is a unique protocol that is simply SSL underneath HTTP. Use "https://" for HTTP URLs with SSL and "http://" for HTTP URLs without SSL. The default "https" port number is 443.

Hyperlink

An active cross-reference from one resource to another. The cross-reference is called active because it is presented in a medium which allows the reader to follow it, for example by mouse-clicking it. A reader can follow hyperlinks in an HTML document using a Web browser, or navigate through online help, or follow hyperlinks between terms defined in a glossary.

Hypermedia

Richly formatted documents containing a variety of information types, such as textual, image, movie, and audio. These information types are easily found through hyperlinks.

Hypertext

Text with hyperlinks. Readers can access the material in a variety of possible sequences, as opposed to more traditional, linear text.

I

Information Superhighway

This term is widely and loosely used to mean the Internet, and it's often shortened to I-way, the infobahn, and so on.

Interactive

Communication between two or more entities that invites contribution which affects all parties.

internet

A group of local area networks (LANs) connected by means of a common communications protocol, such as TCP/IP. Many internets exist in addition to the vast Internet, including self-contained corporate internets, which are called intranets.

Internet

The global network that spans the globe and connects thousands of universities, companies, and other organizations, originally started by ARPA in the early 70s. The Internet hosts the World Wide Web (WWW). Contrast with internet (lowercase).

Internet commerce

An alternative term for *electronic commerce*.

Internet Data Center

A secure facility that hosts a large number of servers (usually Web servers). See also *server farm*.

Internet Protocol (IP)

A particular component of the protocol stack by which networked hosts communicate. A network that uses this protocol is called an internet. The largest and best known internet is the Internet.

Intranet

An IP-based network that is not part of the Internet, but rather, is established for the internal communication purposes of a single company or organization.

IP address

A series of four numbers, each from the range of 0 to 255, separated by periods, which uniquely identify a node (usually a computer) on an internet. Although the underlying IP relies on these numeric addresses, people usually use host names, which are easier to remember and are automatically converted to IP addresses by the Domain Name System (DNS).

ISDN (Integrated Services Digital Network)

An international communications standard for sending voice, data, and video over telephone lines.

ISP (Internet Service Provider)

A commercial enterprise that offers a variety of Internet access services.

J

Java

Java is a network-oriented programming language invented by Sun Microsystems that is specifically designed for writing programs that can be run on a variety of operating systems.

JPEG (Joint Photographic Experts Group)

The name of the committee that designed the photographic image-compression standard. JPEG is optimized for compressing full-color or gray-scale photographic-type, digital images.

K

Kbps

One thousand bps. Example: a 28.8 Kbps modem.

L

Link

Shorthand for hyperlink in discussions related to hypertext issues.

Log file

A file in which a program records events as they occur for the purpose of analysis at a later time, for diagnostic or other purposes. Example: most Web server administrators configure their Web server to record the requests they receive and whether they responded successfully.

M

Manual transaction

In the payment card industry, a transaction for which the cardholder's card information is entered from a terminal keypad rather than via a card reader.

Megabyte

A megabyte contains 1,048,576 bytes. In other words, a million bytes is actually less than a megabyte. Abbreviated as MB.

Merchant

A person or organization that sells goods on the Web. A merchant may operate one or more Web stores.

Merchant ID

In the credit card industry, a merchant ID is a number provided to a merchant by a credit card processor when that merchant retains the services of that processor. Also sometimes called the merchant number.

Message

- In the EDI industry, a message is a formalized data record transmitted between computers.
- In cryptography, the term message often refers to a document (or other content) to which cryptographic techniques are applied in order to ensure privacy or authenticity, for example.
- In the context of e-mail, a message is a unit of transmission from one individual to another.

Messaging

The creation, storage, exchange, and management of text, images, voice, telex, fax, e-mail, paging, and Electronic Data Interchange (EDI) over a communications network.

Mirror site

Because the Internet population has exploded in recent years, a lot of archive servers can't cope with the

load. One solution is to create an exact copy of a server--a process called mirroring. Mirror sites divert some of the traffic from the original site. It's not unusual to find a dozen or more mirrors of busy ftp sites.

Modem

Modulate/demodulate: Essential telecommunications hardware, which converts digital data into analog or voice-like frequencies that the telephone system can reproduce.

Multimedia

The use of multiple forms of media to communicate: i.e. audio, video, text, graphics, etc.

N

Navigation

Finding one's way through the site.

Newsgroups

Forums on the Internet or on-line services; usually related to those found on USENET.

Newsreader

A newsreader is a program that lets you read, download, and reply to the newsgroup messages you want. Some automatically handle the encoding of binary file attachments for you.

NSA

National Security Agency

O

Object

A unique instance of a data structure defined according to the template provided by its class. Each object has its own values for the variables belonging to its class and can respond to the messages (methods) defined by its class.

On-line catalog

A Web-based analog to a retailer's classical print catalog. Online catalogs often include additional functionality like shopping carts, purchase histories, and online purchasing.

On-line store

See *Web store*.

Order confirmation

When informed that the buyer's credit is satisfactory, the commerce service provider passes on details of the order to the merchant facility responsible for order fulfillment.

P

Page

The basic unit of Web delivery. See *Web page*, *home page*.

Payment card

A payment card supports cashless payment for goods and services. Examples are: credit cards, debit cards, charge cards, and smart cards.

Personalization

Tailoring a Web site's content, including advertising, to a specific individual, usually based on demographic information that they have supplied to the site.

PGP (Pretty Good Privacy)

An implementation of public key encryption often used for e-mail.

Physical Goods

Products that need to be shipped to a customer via traditional means, such as UPS or Federal Express. Contrast with digital goods.

Protocol

A set of formal rules that define how to process data for transmission especially across a network. Low level protocols define the electrical and physical standards to be observed, bit- and byte-ordering and the transmission and error detection and correction of the bit stream. High level protocols deal with the data formatting, including the syntax of messages, the terminal to computer dialogue, character sets, sequencing of messages, etc. HTTP, HTTPS, and FTP are high-level Internet protocols.

Proxy gateway

An intermediary server between browsers and content servers. A proxy server usually hides the identity of the client. A proxy gateway may be part of a firewall.

Proxy Server

A system that caches items from other servers to speed up access. On the Web, a proxy first attempts to find data locally, and if it's not there, fetches it from the remote server where the data resides permanently.

Public Domain

Of all the kinds of software or information you can download, public domain has the fewest strings attached. With public domain downloads, there are no copyright restrictions whatsoever. actually comes as the result of a programmed request from the client.

Q

Query

A user's (or agent's) request for information, generally as a formal request to a database or search engine.

R

RAM (Random Access Memory)

Both programs and data are called up from permanent storage and operate in RAM. In general, this means that the more RAM you have, the more able you are to handle large amounts of data and big programs-- though in practice, a lot of data in RAM is passed off into slower virtual memory to free up working space.

Refresh rate

The image on your computer monitor doesn't just appear fully formed on the screen's phosphors: it's drawn line by line with beams fired from three electron guns at the back of the CRT. The frequency at which they redraw the image is called the refresh rate, and it's an important measure of how steady the image will appear.

Registration

The process of entering user credentials into a database for subsequent authentication.

Relative URL

URL whose location is specified relative to the address of the base document in which the URL resides. It provides a shorthand way to refer to files or resources that use the same protocol, domain name, or directory path as the current document.

RFC

Request for Comments, there are the agreed upon standards with which all methods of communicating over the Internet are defined.

ROM (Read-only memory)

ROM is a storage chip that typically contains hardwired instructions for use when a computer starts (boots up).

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