MUSEUMS, GALLERIES, ART SITES, VIRTUAL CURATING
AND THE WORLD WIDE WEB

DISSERTATION

Presented in Partial Fulfillment of the Requirement for
the Degree Doctor of Philosophy in the Graduate
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By

Markus Kruse, B.F.A., M.A.

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Dissertation Committee:
Dr. Robert Arnold, Adviser
Dr. Wayne Carlson
Dr. Midori Kitagawa DeLeon
Professor Emeritus Charles Csuri

Approved by

[Signature]
Adviser

[Signature]
Department of Art Education
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Markus Kruse

1998
ABSTRACT

Since the explosion of the World Wide Web (WWW) in the mid 1990's commercial, non-commercial galleries and individual artists have embraced this medium more readily than museums. Museums have been slow in accepting this medium for presenting online exhibitions, visual communication and marketing because of their lack of understanding, financial resources and Intellectual Property issues. Individual artists on the other hand have propelled this medium to higher levels by creating virtual art galleries, individual artist sites, artist collectives and WWW specific works of art.

A historical analysis of the creation of the Internet and WWW precedes an introduction of how museums, art galleries and artists have approached this new medium to present visual arts information. This is followed by an analysis that discusses issues of virtual curating and their relationship to the traditional museum, gallery and art object. Legal hurdles such as Intellectual Property laws and limitations to publishing on the WWW are explored.

Curatorial issues are found to be important when presenting an exhibition in the traditional as well as virtual environment. The lack of acceptance of the WWW exhibition environment by the traditional arts establishment has dampened the possibilities this medium offers to further advance the visual arts via this medium. The future will require
reinterpretation of the visual arts via this medium as a new form of aesthetic communication.

The study concludes that the successful departure from mimicking the traditional print media through interactive elements will lead us to establish a global form of the visual arts that is not controlled by a few members of the traditional arts establishment. The artist, gallery and museum will push the current technological and aesthetic standards, interpretations and rules in order to take advantage of the WWW. Today's local and national laws will need to be reinterpreted on a global level to further internationalize the arts. Due to the early stage of development of the arts via the WWW curatorial standards should remain flexible to accommodate future WWW developments.
For Dr. Wolfgang Kruse, Ina Kruse and Jodi Melfi
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VITA

January 12, 1966 .......................... Born - Hagen, Germany

1989 ................................................................B.F.A., Wittenberg University

1992 .................................................M.A. The Ohio State University
                                      Art Education/Administration

PUBLICATIONS

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CHAPTER 1

INTRODUCTION

Background to the Problem

In 1992, I received a master’s degree in Art Education/Arts Administration from The Ohio State University. During the years prior to and during my study I gained experience in commercial, non commercial art gallery, museum work curatorial and collection management techniques. In the early 1990's the ever increasing importance of curatorial tasks for museums as well as art galleries became clear to me through exposure to curatorial techniques and principles at The Ohio State University at Newark Art Gallery. During my studies at The Ohio State University I gained further introduction to computer networks at the Advanced Computing Center for Arts and Design and their relationship to the arts that also included deeper insight into the Internet and especially the World Wide Web (WWW). Through this experience, the importance of curatorial tasks, and their relationship to the WWW were becoming more evident to me in the way the arts were represented on the WWW during that point in time. It was not surprising to find that computer networks and the WWW are in a state of constant change in the way arts information is facilitated. Arts information available via the WWW today might be outdated or not available in the very near future because WWW servers are disconnected.
hypertext links change and WWW pages are also deleted on a daily basis. This leads to one of the main questions of this study - have curatorial issues in the visual arts been addressed in the development and advancement of the visual arts on the WWW?

The precursor to what is now known as the World Wide Web (WWW) was invented by Tim Berners-Lee, a graduate of Oxford University, during a 1980 consulting stint at the European Laboratory for Particle Physics (CERN) located in Switzerland. A hypertext medium which he called "Enquire Within" was strictly written for personal use at CERN. Berners-Lee's aim for this program was to keep track of everything that was going on, who knew whom, who had written what and which project needed updates, in the domain of Particle Physics. During the mid 1980's Berners-Lee attempted to transfer the program to a VAX system in order to make hypertext available to every researcher at CERN. His first attempt to make the program more user friendly was done on a NeXT workstation, and used the NeXTstep operating system. However, the program did not prove to be successful because most resident scientists at CERN were already using UNIX operating system running the graphical user interface Xmotif. Further development in the late 1980's at CERN, under the auspices of Berners-Lee and his colleagues, as well as, at the National Center for Supercomputing Applications (NCSA) in Champaign/Urbana, Illinois brought about the first WWW browser. This program was released to a limited Internet audience that mostly consisted of other scientists in the U.S. and Europe and could only display hypertext in its earliest forms. A significantly more user friendly WWW browser that could also grasp graphic imagery as well as sound or video, now known as Mosaic, was developed at NCSA by Mark Andreessen and his
colleagues in the early 1990's. In February of 1993 Mosaic was released to the public and proved highly successful and had an estimated two million users worldwide within the first year of its release (The Whole World in his Hands, 1994).

Unfortunately, no reliable records from this time period show accurate estimates on either the number of WWW servers in general or servers that were facilitating visual arts information. It is important to take a brief look at the explosion of the WWW in order to understand its later impact on the arts.

By May of 1995 the usage of the WWW had exploded to 4.06 million individual web pages worldwide.¹ One might imagine that the arts would have kept up with the advancement of vast amounts of information facilitation in this pristine text and graphics oriented medium. Yet, by September of 1995 only 220 official visual arts museums (by October 1996 the number has increased to over 700 and by February 1997 it had increased to over 900)² had joined the Internet Information Age worldwide. On the other hand both commercial, not-for-profit art galleries and artist sites that never existed in physical reality have appeared in much greater numbers as virtual galleries, art sites and virtual museums. Any person with access to a WWW server could create WWW sites for commerce, education, publication or just plain entertainment. With these unlimited possibilities for creating new arts sites it is not surprising to find a wide range of quality within and across WWW art sites. Some sites offer an array of graphic oriented web

pages with little further information. Other sites offer nothing more than straightforward text. Many examples of how the majority of arts sites are designed can be found at the most comprehensive visual arts registry on the WWW, World Wide Arts Resources\(^3\). As the visual arts on the WWW develop further a certain format and design will hopefully become accepted as a standard for web page design in the visual arts. I believe that these standards will help museums, art galleries and other staff responsible for sites make decisions about their responsibilities in creating WWW sites.

The majority of museums and art galleries have been somewhat hesitant in accepting this new form of electronic information facilitation and publishing of the visual arts via the WWW. The visual artist on the other hand seems to embrace this new medium more readily. By 1996 individual artists’ sites on the WWW had outnumbered museums by at least four to one\(^4\). The medium is being approached by most of the museums and galleries in rather traditional publishing standards\(^5\) because most sites are an extension of the marketing departments and resemble museum pamphlet publications rather than a well designed WWW site. It makes sense to portray the museum’s identity via the WWW but most sites do not use enough interactive elements to make the site worth a visit. This study will attempt to determine how museums and art galleries can


\(^5\) Publishing standards for the WWW are discussed in Chapter 3.
enter the age of worldwide electronic information facilitation via the WWW in a way that will confront present and future standards of curatorial possibilities for this medium.

Museums have been slow in accepting this medium of information transfer for possibly a few reasons. According to Laura Trippi who works at the Guggenheim Museum, Soho in New York museums are still being led by the “old guard” and a “computer-phobic” staff and “the art world is scared to death of this stuff”. Most museums do not even have computer networks within the building” (Pinchbeck, 1994). Today only a few of the major museums in the U.S. are even connected to the Internet. In the mid 1990's many museums faced severe budget restraints due to cutbacks in federal and local government support, and this could be one of the determining factors why they cannot afford or justify the purchase of modern and powerful computer equipment for their staff or visitors.

One also has to look at how museums and art galleries provide information on the WWW. As stated before, many museums most often provide general information as well as a few digitized pictures on their WWW pages. General information ranges from opening hours, location of the museum and an exhibition schedule. Some museums such as the Dallas Museum of Art6 as well as the High Museum of Art in Atlanta Georgia7

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and The Thinker\textsuperscript{8} in California have begun to transform their collections into databases of digitized imagery that are accessible over the Internet. Most museums, however, only provide a few images from their permanent collections. In other words, it appears that most museums are reserved and somewhat reluctant about providing current and vast amounts of digitized imagery from their permanent collections to the general public via the WWW. This might stem from the fear of copyright infringements and the undecided nature of intellectual property laws at this time. Budgetary restraints might also play an important factor. It is not far fetched to also assume that since most museums do not have computer networks, no staff responsible for the creation of WWW sites even exists at these institutions. Moreover, the fear might exist that the WWW will reduce the number of visitors to the museum or art gallery. Museums and galleries are not looking into the future. Visitor studies do not yet accept the virtual visitor as a real one.

The creators of WWW art galleries and virtual art sites on the other hand have proven to be less conservative and more aggressive in their effort to further the arts and their own position in the global marketplace via electronic information transfer. Most galleries on the WWW include general information just as museums do. However, many of them also include vast arrays of up to date digitized imagery, sounds and sometimes short movie clips. Virtual art galleries have also been born on the WWW. These art galleries do not even exist in a real "storefront" gallery space but only thrive on the

\textsuperscript{8}
http://www.thinker.org/index.shtml
WWW. The Art Crimes Gallery\(^9\), for example, concentrates on showcasing graffiti art from all across the world. It is interesting to note again that in the traditional sense this art gallery does not exist. It does not provide exhibitions at a physical location. However, it has been able to establish a presence and influence on the WWW.

This new form of exhibition might also bring success to the lesser known artist. Through the WWW artists are able to publish and showcase their work to an almost unlimited audience provided that visitors are able to actually find the site on the WWW. The lesser known artists that are not represented by a well known art gallery can make their presence felt in the art world via this medium; or they could even bypass the traditional gallery market and sell their works solely via the WWW. Yet, the virtual artist cannot solely rely on just the WWW site to be successful. The artists will have to promote themselves as well and take over the tasks that traditionally have been done by the art gallery owner or marketing staff.

Certain standards have already been established for the serious provider of art on the WWW. The question is whether these standards are purely technical or aesthetic. Digitized images can only be so large in terms of file size. Images too large take a relatively long time to load over a slow connection such as a 14.4k baud modem. On the other hand images that are too small do not offer much information or aesthetic experiences to the viewer. Images are usually mixed with explanatory text and hypertext

links to other pages further down the WWW site's hierarchy of pages. The main\(^{10}\) page of a WWW site is usually the most important in terms of design and provision of information. From this page the visitor will have to decide whether to continue further down the hierarchy or leave the site altogether. The experienced WWW visitor will understand this concept clearly.

This leads us back to the individual artist who uses the WWW as a global marketing, publishing and showcasing tool. Currently it seems to be the case that famous, financially independent artists such as the recently deceased Roy Lichtenstein stayed away from the WWW for a possible fear of copyright infringements. However, less famous artists seem to embrace this medium to establish new vantage points for themselves. The artist may still have to rely on traditional galleries, but may showcase and possibly market their works easier to a much larger audience via the WWW. This might change the relationship the artist will have with the traditional gallery and museum in the future.

This brings us right to the concept of virtual curating. It is important for museums to recognize the importance of the Internet and especially the potential the WWW has to offer. One can often find instances of sloppy curatorial work over the Internet because many sites portray a misunderstanding of the WWW and its possibilities as a communications medium. These will be discussed in later chapters of this study. I am sure that many museums are excited to have a WWW site. However, the way images and

\(^{10}\) This is often called “Home Page”.
information are placed on the WWW is often inadequate in terms of curatorial or exhibit design aspects. By just placing the images of an exhibition on the WWW without necessary background information the museum does not necessarily provide a useful service. It would be like hanging the paintings on the walls of the museum in no specific order. The Dallas Museum of Art for example offers access via the WWW to a large portion of its permanent collection and neglects many curatorial aspects in that most images are only identified by the artist, title and sometimes the medium. The date, medium and size of many of the works are not included in the information provided! How beneficial does that make the image for a researcher, student or art enthusiast?

**Research Statement**

What and how have art museums, art galleries and artists presented visual arts information via the WWW? What are the styles of virtual curating and if what, how does the concept of virtual curating relate to the museum, gallery, artist and art object?

**Review of Related Literature.**

The literature included in this study will come from current newspaper, magazine and scholarly articles as well as information available via the WWW. Few books have been published about the Internet or the WWW that relate to the visual arts, museums, galleries and artists. Furthermore, papers published on the Internet and WWW as well as

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correspondence in form of e-mail, listservs and newsgroups via Usenet will also be included in this study.

Purpose

The purpose of this study is to analyze the potential of virtual curating and exhibitions for museums, art galleries and artists. Moreover, the study will provide a review of existing virtual exhibitions at official art museums, art galleries and other art sites for future researchers to use when writing about the “historical” aspects of the arts and the WWW. Another important notion is the way this information is presented and how it supports the furthering of the arts via the WWW. It is essential to develop a basis for virtual curatorial aspects related to the WWW in order to fully analyze the potential of virtual curating. This will benefit museums, art galleries and artists as well as art educators, students and the general public when exploring the WWW medium.

Overview

Art museums, art galleries and artists have presented visual arts information via the WWW since 1994. Following a historical analysis of the creation of the Internet/WWW in Chapter 2, Chapter 3 will discuss these issues and present the different ways museums, art galleries and artists have approached this new medium. Chapter 4 explores the issues of virtual curating on the WWW and how they relate to the traditional museums, gallery, artist and art object. Chapter 5 discusses the legal hurdles and limitations of this new medium and publishing on the WWW. Chapter 6 presents the
results of a survey undertaken at World Wide Arts Resources that discovers issues of how age and the level of education relate to the perception and viewing of a work of art on the WWW. Chapter 7 concludes this dissertation with an overview of major points brought up in this study as well as further elaborations, suggestions for future researchers and final thoughts.
CHAPTER 2

THE HISTORY OF THE WWW

Origins of the Internet

William Gibson, among others, called the first forms of computer networks “the Matrix” and its exploration began in September 1940 at Dartmouth College. At a meeting of the American Mathematical Society, George Stibitz wished to demonstrate the “Complex Calculator”. Although, he had first planned to take the machine with him to Hanover, New Hampshire, where the meeting was taking place, it became clear that this would almost be impossible because of its size and thus set up a teletype terminal in a hallway outside the lecture room. Via a telegraph connection to New York City where the calculator was situated it was possible for the participant at the conference to use the machine and perform remote calculations (Salus, 1995, p. 3). This turned out to be one of the first modern “computer networks”.

To fully understand the evolution of the World Wide Web (WWW), it is important to take a closer look at the development of the Internet as a whole. During the early 1950's and the beginnings of the Cold War the RAND Corporation, one of America’s leading Cold War think-tanks, was puzzled by a new military strategic
problem. According to Sterling (1993) and Salus (1995) the largest problem the U.S. strategic planning authorities faced was military and government communication possibilities after a nuclear attack or an all out war. With the destruction of major communications centers all across the US strategic planners would have had no way to communicate with one another across even a short distance. After the beginning of the space race, the success of Sputnik in 1957 and the American Republican Army’s sabotage attacks on three vital microwave towers in Utah in 1961, the focus at RAND and other government agencies shifted to how national defense circuits could shift automatically to alternative routes in order to maintain communication across the country. Paul Baran and his colleagues at RAND were commissioned by the government to research this topic and by 1962 produced 13 reports “On Distributed Communications” and in 1964, introduced the term and concepts of “Distributive Adaptive Message Block Switching”. Today this has become known as a concept called “Packet Switching”12 (Salus, 1995). This turned out to be one of the most important underlying concepts for the development of computer networks and the Internet. It created the basis for one or more computers at different locations to simultaneously communicate with one another via a network that had not yet been developed.

According to Salus (1995) it was not until 1968 that the first successful packet switching node was actually implemented. This took place at the National Physical

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12 Packet switching occurs when data is divided into small pieces. These pieces are then switched through a variety of possible routes to their destination.
Laboratory in Great Britain. 1968 was also the year when ARPA\textsuperscript{13} funding created the ARPA Computer Network that would eventually be called ARPANET\textsuperscript{14}. This of course had followed earlier versions of packet switching networks and although not very successful at the beginning it created the basis for future success. By 1969 University of California at Los Angeles became the first site for the ARPANET with a Honeywell 516 computer and within months this node started communication with four other nodes. These were also located in the western parts of the United States. 1970 became an exciting year for all of the engineers working with ARPANET. By December of that year 13 nodes had been established and all were successfully packet switching with each other. Not only was the network established in the western part of the country, but now such sites as Lincoln, MIT, Harvard, Carnegie Mellon and Case Western University had been connected cross country and tremendous amounts of money were spent on computers and leased telephone lines in order to further more research. By 1973 the first international connections to ARPANET were made - the University College of London and the Royal Radar Establishment in Norway.

One of the most important years in the early development of the Internet turned out to be 1974 when Cerf and Kahn, now both highly regarded computer scientists,

\textsuperscript{13} The Advanced Research Projects Agency (ARPA) was created within the Department of Defense by President Eisenhower in 1957.

\textsuperscript{14} ARPANET was the packet switching network established by ARPA.
published the first paper on TCP/IP\textsuperscript{15} that explored the change from packet switching protocol to TCP/IP. According to Cerf (1993) the initial development of TCP/IP took place at three different places. The initial design work was done at Stanford University, BBN in Massachusetts and University College, London. First testing took place in 1977 via a mobile packet radio located in a van driving on the San Francisco Bayshore Freeway with a packet radio running on an LSI-11 system. This system was connected to a computer gateway that allowed the packets to be transmitted across the Atlantic via a point-to-point satellite link to Norway. From there the packets were routed via land lines to London and back through the Atlantic Packet Satellite Network (SATNET) via a Single Channel Per Carrier (SCPC) System to the U.S. It is worth noting that testing in some way simulated the conditions of a mobile unit on a battlefield. One cannot forget that the major interest in developing this network was for military rather than civilian use. The test proved to be a huge success in that several computers were in communication with each other with no packets lost.

To back up in time again, in 1974 ethernet was developed at the Xerox PARC by Metcalfe and Boggs. This also proved to be very successful years later due to its inexpensive way of creating computer networks. During 1974 ARPA also handed over control of ARPANET to the Defense Communications Agency (DCA) which however did not fully manage the network until 1975. All developments had been done with this

\textsuperscript{15} TCP/IP: Internet networking protocols that allow cooperating computers to share resources across a network. For further discussions see a technical description at: http://ns.kren.nm.kr/Internet/tcp_ip.html.
network in mind; the military role was finally becoming more pinpointed.

Early interests of commercialization of this network were also looked at skeptically. In 1972 Larry Roberts already laid out plans for the government to sell interest in the ARPANET to commercial firms by 1974. Yet, corporations were skeptical about any success to make the network “into viable economic entities” (p. 107). By the end of 1974 BBN, one of the largest players in the development of the Internet, formally incorporated Telnet Communications Incorporated (TCI) in Washington D.C. TCI estimated it would require $6 million to achieve the break even point and anticipated revenues over $1 billion by 1980. TCI managed to obtain financing from such firms as Lehman Brothers and Time, Inc. However, early predictions proved wrong and by 1978 TCI had consumed over $21 million in equity and debt capital. However, in June 1979 TCI was purchased by a wholly-owned subsidiary of GTE for 503,729 shares of GTE and by 1985 the TCI network was locally accessible from nearly 400 U.S. metropolitan areas and 67 countries (p.107-109). Yet, early attempts to commercialize the Internet did not prove as successful as once hoped because the majority of the American public did not have access. Furthermore, computers were still very rudimentary when compared with today’s machines. The first personal computer had not even been developed at that point in time.

It is important to look at other early developments in order to fully understand the development of the Internet. Early development of electronic mail (e-mail) certainly helped in the creation of this new communications network. By 1976 Elizabeth, the Queen of England was already conversing with the public that had access to networked
computers in form of e-mail via the early Internet. Unfortunately, it is not known when the first e-mail was sent via the early networks. It is believed that some people were using e-mail as early as 1970 (Salus, 1995) but 1976 marked the first time e-mail actually showed up in printed media (Hobbes Zakon, R. Hobbes Internet Timeline). While TCP/IP was being developed a new operating system called UNIX was gaining popularity among its users. The UNIX operating system had been invented in 1969 at the AT&T Bell Labs but until 1979 its biggest drawback was that it only ran on the PDP-11 computer. Now ARPA was beginning to show interest in the software because it foresaw the difficulties of incompatible software on the Internet. After several discussions it was decided that ARPA would support the UNIX operating system rather than the DEC VAX running the VMS operating system. Berkeley’s Computer Systems Research Group (CSRG) received the contract to increase the performance of UNIX, and by April 1982 rcp and rsh\textsuperscript{16} were included in the 4.1a BSD\textsuperscript{17} release. The complete UNIX release with a rewritten TCP/IP suite by BBN was released during the winter of 1982 and 1983. The release of 4.2BSD proved to be tremendously successful, selling more copies within the first eighteen months than all prior Berkeley releases combined. Now DARPA was finally able to reach and contact over 90% of all North American computer science

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\textsuperscript{16} rcp stands for remote copy; it enables a user at a remote location to copy files and directories. rsh stands for remote shell; it enables a user at a remote location to execute commands.

\textsuperscript{17} BSD is a version of the UNIX operating software that was developed at the University of California, Berkeley.
departments because almost all of them were using UNIX (Salus, 1995, p. 127-131).

The successful development of UNIX and UUCP\textsuperscript{18} (UNIX-to-UNIX Copy) turned out to be important to the continuing development of the Internet. UUCP was vital in that it enabled users not connected to ARPANET to send e-mail, transfer files and execute remote commands on other computers. However, UUCP was too limited for its intended use because of technical limitations and early Usenet\textsuperscript{19} took over from where UUCP had left off. Later, in 1980, Berkeley was feeding news to over 100 sites with 25 articles per day. This became the downfall for UUCP. The development of the Usenet network began with two hosts: UNC and Duke. It appeared more stable and could be integrated within the UNIX operating system without any changes to the UNIX system components. Out of early Usenet developed A News, C News, INN, ANU-NEWS for VMS machines, rn, B News, Gnews\textsuperscript{20}, and other lesser known programs. It is interesting to observe that newsgroups in the early 1980's were growing so rapidly. However, problems of censorship were already becoming evident in the early development of the Internet because such newsgroup startups as net.rec.drugs were rejected. As a reaction

\textsuperscript{18} UUCP enabled a user to send email, transfer files from one computer to another, as well as execute remote commands via a network. It was first published in 1978 and was designed for usage over a 300 baud line.

\textsuperscript{19} Usenet makes it possible to post newsgroup messages. In the beginning only two hosts: The University of North Carolina and Duke were handling this. By the summer of 1980 15 more hosts had been added.

\textsuperscript{20} These different kinds of news programs enable the computer user to read and post news articles to specific newsgroups.
against the strict rules newsgroups starting with alt.* appeared for the first time in 1987. According to Salus (1995) the popularity and success of the Internet were a result of the inventions and further refinement of sending mail and reading news via the Internet. A new form of communication had been born.

One also has to take into consideration that other developments at ARPANET influenced the growth of the Internet. In 1983 ARPANET split into two networks: MILNET, which later became the Defense Data Network (DDN), and ARPANET that became the research backbone of the ARPA Internet. This paved the way for moving away from a purely defense strategy oriented network to a more global, civil and research oriented Internet. Furthermore, in the early 1980's the European Academic and Research Network (EARN)\textsuperscript{21}, as well as the Joint Academic Network (JANET)\textsuperscript{22} in the United Kingdom and the Japanese Universities and Research Net (JUNET) in Japan were established. By 1985 the National Science Foundation funded the first of five national supercomputer centers and one year later the original NSFNET\textsuperscript{23} (1984) backbone had been implemented. NSFNET was intended to become a national academic network and a very large number of "mid-level" networks such as NYSERNet (New York State Educational and Research Networks) were attached. This is another reason why so many of the first people on the Internet were located at some of the National Supercomputing

\textsuperscript{21} EARN formed in 1983 was the European version of BITNET.

\textsuperscript{22} JANET was established in 1979.

\textsuperscript{23} In 1984 the National Science Foundation, established NSFNET.
Centers and other attached academic institutions. Moreover the split between MILNET and ARPANET and the development of NSFNET and CSNET became the final downfall and decommission for ARPANET in 1989:

Networks no longer depended upon IMPs; TCP/IP had taken over from NCP; neither protocols nor applications were actively developed on it. The Internet had arrived. (Salus, 1995, p.211).

According to Salus (1995) in 1990 “The World” (world.std.com) became the first site to offer full commercial Internet dial-up access for the general population. However, NSF restricted The World’s customers to roughly half the net and it was not until 1992 that The World received permission to route all the Internet dial-up access through NSFNet and thus the entire Internet. By 1991 gopher was developed at the University of Minnesota by Paul Lindner and Mark P. McCahill. Furthermore, Mike Schwartz at the University of Colorado at Boulder invented “Netfind”\(^\text{24}\) and the term “resource discovery” was coined. Following all these developments and creation of new software and hardware it is not surprising to see that the invention of the World Wide Web would take place the following year.

**History of the WWW**

As I pointed out in Chapter 1, the precursor to what is now known as the World Wide Web (WWW) was invented by Tim Berners-Lee, a graduate of Queen’s College at

\(^{24}\) Netfind was intended to make it possible to search for other computer users’ names on the Internet. http://knidos.cc.metu.edu.tr:8002/dir/dir012
Oxford University in Physics (1976), during a consulting period at the European Laboratory for Particle Physics (CERN) located in Geneva, Switzerland. During his consulting period from June to December of 1980, Berners-Lee wrote a notebook program that he called “Enquire-Within-Upon Everything” which allowed links to be made between arbitrary nodes (A Little History of the World Wide Web, 1995).

Berners-Lee (1989) insinuated that the loss of information at CERN was due to a high turnover rate of employees and was one of the reasons why “Enquire Within” was initially developed. However, it leads us to wonder if the rapidly exploding development of new hardware and software was not playing an important part in the loss of information as well. Although, strictly written for personal use the author attempted to keep track of everything: what was going on, who knew whom, who had written what, in the domain of Particle Physics. Several other programs that were available commercially and academically at the time were using what Berners-Lee called “hot spots”. The “hot spots” would enable the viewer to move their mouse over certain areas of the document text which then would bring up the pertinent information or expand the text on the screen to include it, much like what we are accustomed to when using “Help” in modern programs. However, none of the programs were actually linked via a network and thus only enabled one viewer to view the information on one machine. Berners-Lee’s program was similar to the program developed by Apple for the Macintosh in the mid 1980’s called “Hypercard”. According to Berners-Lee (1990) the main difference between the two was that even though “Enquire Within” lacked the capability for
graphics, it ran on a multiuser system and made it possible for many users to access the same data (Berners-Lee, 1989, p.5).

The term “Hypertext” was coined in the 1950's by Ted Nelson and was further elaborated by Berners-Lee’s and Robert Cailliau’s “World Wide Web: Proposal for a HyperText Project”:

HyperText is a way to link and access information of various kinds as a web of nodes in which the user can browse at will. Potentially, HyperText provides a single user-interface to many large classes of stored information such as reports, notes, data-bases, computer documentation and on-line help systems help. We propose the implementation of a simple scheme to incorporate several different servers of machine-stored information already available at CERN... (p.1)

Although, Nelson’s idea of “Hypertext” was coined so many years before its inclusion on computers, the main concept of that hypertext would encompass human-readable information, linked together in an unconstrained way, developing into what we now know as the WWW. Nelson (1967) further elaborated on the idea by not just including text documents but also images, speech and film. This analysis of diverse media was then coined “Hypermedia”. By 1967 William J. Paisley, who worked at the Institute for Communication Research at Stanford University, was already envisioning the pre-runners of modern hypertext and hypermedia to be used in museum settings:

Sometime in 1980 a scholar will enter a major museum, seat himself at a computer terminal in the research room, and ask to review all art works depicting, say, sailing vessels. He will want to see bas reliefs and sculptures, as well as drawings and paintings. He will expect to see works from all significant collections around the world, including works currently in storage in the museum, and those out in traveling exhibitions (p. 195).

However far ahead of his time Pasely had been, it is clear from the discussion in this
chapter that the early Internet had severe limitations and it was not until early 1992 that the WWW would take shape as a tangible medium.

Berners-Lee (1989) distributed "Information Management: A Proposal" by March of 1989, but it was not until its resubmittal in May of 1990 that it received widespread acclaim and recognition at CERN. The proposal was a natural progression from the "Enquire Within" software where hypertext was now seen as the main force to keep track of all projects within CERN for scientists to share information in a multiuser setting. By October of 1990 Berners-Lee and Robert Cailliau as the co-author reformulated the proposal with the support from CN and ECP divisional management at CERN. This is when the name World Wide Web was actually coined. Even though Berners-Lee had transformed the "Enquire Within" software to the VAX platform in 1984 most of the scientists at CERN were already using UNIX platforms and thus his early version proved to be unsuccessful.

In the World Wide Web Proposal Berners-Lee and Cailliau (1990) were pushing for accessibility from different kinds of platforms (VM/CMS, Macintosh, VAX/VMS and UNIX) to the same information. The authors also pushed for a non-centralized information system which would allow existing systems to be linked together without requiring any central control or coordination. Another very important factor of the proposal was that Berners-Lee pushed for what he called "Live Links". These hypertext links would not be static but retrieve information each time a page or information would be called up. This would offer the possibility for live data and for the maintainer of a certain link or page to update the information independent from any other link or page.
Of course we are aware that this is one of the strengths of the WWW today. In early 1990, before any of the WWW browsers were even officially developed, the National Institute of Standards and Technology (NIST) held a Workshop on the Proceedings of the Hypertext Standardization in order to help develop certain standards and concepts. Hardt-Kornackie, Gomez and Patterson (1990) proposed the development of standardization for hypertext applications via a very large heterogeneous network:

The standardization of the virtual terminal, the virtual file system, and the virtual interprocesses communication mechanism should come first. These standards will guarantee that any application can run on the standard virtual terminal irrespective of the terminal given that it can emulate the virtual network. Regarding the Hypermedia components, the Presentation Objects should be the next in line for standardization. However, as stated in the opening section, since at the present time we still cannot assess the potential multimedia capabilities of the future we must wait for the above standards before we consider freezing the form of the Presentation Objects and their database (Salus, 1995).

The authors were foreseeing what the Internet, the WWW and computers are still struggling with today. Multimedia transportation on the WWW is still one of the most difficult issues that need to be addressed now. No comprehensive standard for multimedia has been developed. For example, the struggle of the two movie formats quicktime and mpeg continues. To further enhance the inability to produce comprehensive standards, hundreds of plugins\textsuperscript{25} for WWW browsers have been developed in order to be able to view and use many different kinds of multimedia.

\textsuperscript{25} A plugin is an independent software program that once activated will perform functions that are not built into a browser. This will allow the user for example to view certain unsupported types of digital video.
Further problems are magnified by Netscape Corporation and Microsoft. Both develop WWW browsers and include their own proprietary “tags” (e.g. Frames) that only each company’s software can interpret. For example, a plugin or proprietary tag from Microsoft might not be displayed in the Netscape browser and vice versa.

However, it is important to return to earlier developments of the Internet in order to fully understand the explosion and popularity of the WWW. By the end of 1990 Line mode (dumb terminals) and NeXTstep browsers were now ready to be demonstrated. Both gave access to hypertext files and Internet news articles. However, graphics or other multimedia formats were excluded from these versions. By March of 1991 Line mode browsers were released to a limited audience and worked only on “Priam”, “VAX”, “RS6000” and “Sun4” platforms. It was not until January 1992 that the official release of the Line mode browser (version 1.1) was made available to the general Internet user via anonymous FTP. Early predictions about the Internet stated that there would necessarily be a limit to the growth and development of the network because not everyone would want to participate and that for this reason a period of saturation would come about. Yet, as of today no limits to the explosion and popularity of the Internet and especially the WWW are in sight.

During the same time period Bruce Kahne at Thinking Machines in Cambridge Mass. was one of a few other researchers who were attempting to develop other large heterogenous networks. The network he called “Wide-Area Information Service” was ideally a network of libraries from all across the world that would be accessible at many universities to students and faculty. Much of this has been accomplished today via the
Internet, but unfortunately the vast majority of books and information are still not online due to copyright laws and the cost of transferring printed text to a digital format.

In February of 1993 the first NCSA alpha release of Marc Andreessen's "Mosaic for X" was made available to the public. The software that had been started from scratch only eighteen months earlier proved to be so successful that according to Markoff (1993) it caused some traffic jams on the Internet. This was the first WWW browser that could be used with text, imagery and sound. By March of that year WWW traffic on the NSF backbone only measured 0.1% of the maximum capacity but by September this had increased to 1% and by October over 200 HTTP servers were known to exist. In December NCSA was receiving over 600,000 requests (hits) on their Mosaic WWW site every week. Others called it so innovative and successful it was predicted that it would create a whole new industry from scratch. Of course companies such as the technical book publishers, O'Reilley & Associates, saw an unprecedented opportunity to bring the public onto the Internet and joined forces with the software company Spry. O'Reilley announced in December 1993 that within a few months it would release a Windows (DOS platform; the early 486 was the norm of the day) version of a product it called "Internet-in-a-Box". This meant that millions of Americans had the first "real" opportunity to begin the race of joining the Electronic Information Age. Because at that point in time little software for the DOS or Macintosh platforms had been

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26 A Little History of the WWW. (no date). http://www.w3.org/pub/WWW/History.html
developed most of the interaction on the Internet at that point in time still had to be done via the Unix platform:

Despite the all the recent hype praising the Internet as the precursor to the national data highway, establishing a direct connection to the Internet is about as easy for a novice as traveling a muddy road on a pogo stick, with traffic signs written in Unix (The Internet Carried..., p. F7).

In March of 1994 Marc Andreessen and some of his colleagues left NCSA to form their own company called Mosaic Communications Corporation which later changed its name to the well known Netscape Communications Corporation. Today, Netscape produces the Netscape Navigator, a WWW browser that has the highest use and popularity on the WWW.

The first real Internet multimedia production took place in May 1994 when a midtown Manhattan studio broadcast the cult movie "Wax: Or the Discovery of Television Among the Bees." The film was played on a VCR at the studio and translated into digital format to be broadcast via the Internet. Problems such as half of the resolution of a normal television image and only a rate of two frames per second persisted, but the engineers believed that within six months everything would work without glitches (The Internet Carried..., 1993 ). How wrong they were!

On July 26, 1994 Congress started its first session on-line. The House Subcommittee on Telecommunications and Finance held its first hearings with “The Role of Government in Cyberspace” as its topic. Members were instructed to use e-mail,
gopher, browse the WWW and use a WAIS database\textsuperscript{27} as part of the hearing process\textsuperscript{28}.

Not only was the House using the Internet as part of their daily routine but Bill Clinton had set up several e-mail lists where the public could send out a request for information on the economy, foreign and social issues, or speeches as part of the campaign 1992 and receive responses in form of e-mail (On & Off at the White House, 1993). Even though presidential politics in 1996 are said to be the first to be held in part over the Internet it clearly shows that in 1994 Clinton and his advisors already perceived and understood the importance of the Internet as a communications forum for political ventures and campaigns.

It needs to be stated again that the vast majority of the public was still holding back from joining the Internet. The anxiety with technology was made clear in a study produced by Dell Computers that found that 32\% of adults were intimidated by computers, worrying they might damage the machine if used without assistance. More than a quarter of the people asked in this study also claimed that they would rather use a typewriter over a computer. Furthermore, they would not use the computer unless forced to (High Tech Anxiety, 1993). Another study by the same company a few months later found that 55\% of American were "technophobes" who would reject or try to avoid technology whenever possible (Technophobia, 1993). To perplex the situation even

\textsuperscript{27} A WAIS database, an early form of indexing documents on the WWW, makes it possible to search for specific documents within that WWW site by using keywords and search phrases.

\textsuperscript{28} Edupage. (1993). http://www.educom.edu/edupage.old/edupage.93/edupage-07.08.93
more another study conducted by PC/Computing magazine the same year showed that nearly eight out of ten Americans believed that personal computers made them more productive. The study also found that “ease of use” and “ease of learning” were more important to the subjects than additional capabilities (Shorten the Learning Curve, 1993). Not only do these three studies show some of the trends of the perception of the general public towards computers, but during the same time period Compuserve, Prodigy, MCIMail, AT&T Mail, Delphi, Fidonet and America Online were attempting to break down the barriers and difficulties the public was experiencing with the Internet by offering access to their proprietary online networks that were easier to use than the Internet. Online growth for the first half of 1993 had only been 9.9% with an estimated 3.9 million users. This showed a slight decline from the year before. However, commercialization of computer networks was well under way with the ten largest online providers having an income of over $500 million in 1993 (A Shakeout for On-line Services, 1994). Another study by the Consumer Technology Group in the fall of 1994 showed that nearly half of all American households were already using the Internet, but 40% also thought that they were going the wrong way (Good News/Bad News, 1994).

The learning curve of the early online service user was more rapid than expected in that over 60% of new users of the non-online service Internet came from one or more of the above mentioned Online service providers (Mr. Smith Goes To Cyberspace, 1993). It is also not surprising that the appearance and success of the first WWW browsers made the whole “Internet Experience” more comfortable and less threatening to users jumping off the online services and the general public that was joining the Internet and WWW in
great numbers for the first time; point and click interfaces, hypertext links and live data
grounded towards computer platforms used by most of the general public in my opinion
must have aided the explosion of the Internet/WWW. The success of the WWW in the
United States was furthermore supported by the fact that almost 30% of households in
the United States in 1994 had a personal computer compared to only 23% in Canada and
much less in Europe or lesser “developed” countries. 65% of the owners in the United
States said that they would miss their machine “a lot” if they no longer had it and that
they spent less time watching television since having purchased a computer (Americans
Like Technology, 1994).

According to Rutkowski (1994) President of the Internet Society29, the claim of
success is further supported by an increase in NSFNet backbone traffic by 341,000% in
1994 alone. New Web servers in the U.S. were added at a rate of 12 per day between
April and June of 1994. Furthermore, a terabyte of traffic per month via the WWW in
July of 1994 shows how popular the WWW was becoming (WWW over e-mail, 1994).

The discussions and facts certainly establish some of the reasons why the Internet
and the WWW became so successful in the early 1990’s. Growth in 1994 was also
enormous. The arrival of the WWW, gopher and browser software enabled users to more
easily use the Internet as a communications tool. In September 1994 Mosaic
Communications forecast its release of the commercial version of Mosaic for the fall of

29 The Internet Society is a non-profit, non-governmental, international professional
membership organization that brings diverse interests and factions together to work out
reasonable solutions that generate progress and growth for the Internet.
the same year. The software was to run 10 times faster than the shareware version, thus increasing the ability to load text, graphics and sound faster than ever before (Mosaic Speeds Up, 1994). To further the explosion of the WWW CERN also announced in September a new way to deliver WWW pages via e-mail. This would enable people without full Internet access to view WWW pages if they had a WWW browser installed on their computer. However, this program was short lived and doomed from the start due to the fact that the user requesting a WWW page would need to know its exact address. Mosaic - Netscape changed strategies at the end of October announcing that it would distribute the new commercial version of Mosaic for free over the Internet instead of charging for it and thus this software had a much larger impact on the explosion of the WWW than CERN with its or any other company’s software (Rutkowski, 199).

Certainly, this is a factor why the popularity of the Mosaic - Netscape software continues today.

Yet, the success of the WWW was not only manifested by software or ever faster networks and computers but also by the constant bombardment of Internet facts and predictions by the media and advertisers. A scan through newspapers, news magazines, newsletters and news broadcast transcripts showed that the word “Internet” was only used twice in 1980. By 1993 it had appeared 8,835 and increased to 25,047 by the end of 1994 (St. Petersburg Times 12/19/94 Business p.3). This is clearly an indication of how the media was also influenced by the explosion of the Internet/WWW and electronic information revolution.

1995 experienced another year of immense growth for the WWW. In January The
Library of Congress unveiled the new Web “Thomas” a new service for the general public to browse the full text of any bill introduced in Congress since 1992 (Internet Becomes Road..., 1995). Even though a library in Seattle, Washington, was the first to give free online access to its users the year before, a growing number of libraries were also making their catalogs available via the WWW, gopher and telnet (remote scripting protocol). On January 13, 1995 the “global campus” was introduced where 35 graduate students from the University of Toronto linked up with 25 students from the University of Orleans for a twelve week course on culture and technology (Global Campus Debut, 1995). Today, quite a few universities/institutions are using the Internet/WWW for a long distance learning environment.

1995 was also the year when the browser wars on the WWW started. According to a study published in the New York Times in February that had analyzed the responses of over 72,000 Internet users, 77% of them were reaching the WWW by using the Netscape Navigator, 14% via NCSA Mosaic and the remaining 6% via Spyglass Mosaic (a version of Mosaic licenced to Spyglass by NCSA), Netcom, Netcruiser, IBM WebExplorer and other lesser known browsers (WWW Browser Statistics, 1995). Earlier in the year Microsoft had started to challenge the WWW browser market by not only planning their own global dial-up network but also to licence Spyglass Mosaic for its browser. However, at the beginning of March Microsoft came under scrutiny by the Justice Department for its plans to include its online service software in the Windows 95 release and abandoned the licencing agreement with Spyglass and instead began
developing the Microsoft Internet Explorer\textsuperscript{30} (Microsoft Network..., 1995). To strengthen the position of the Netscape Navigator, nine companies such as Apple, IBM, Sun Microsystems, Bank America, Visa and MasterCard signed agreements to use Netscape’s SSL (secure socket layers) technology for WWW security and financial transactions via the WWW (9 Companies Endorse..., 1995). Furthermore, Adobe Systems and media corporations such as Hearst Corporation, Knight-Ridder, TCI, and Times-Mirror agreed to buy 11% of Netscape Corporation. Even though still not profitable Netscape was seen as the strongest competitor in the browser market by Wall Street analysts (Adobe and Media Companies, 1995). This might be one of the reasons why Netscape is still the most popular WWW browser today.

Other statistics about the WWW showed that by the spring of 1995 married couples made up 53% of Internet users with unmarried males comprising 28%, unmarried females 11% and other families 8% (Who’s on the Net?, 1995). Furthermore, a survey by the Matrix Information Company found that the ratio of men to women with Internet access was 64% male and 34% female (Women and Blacks on the Net, 1995). It clearly shows more information about the demographics of the WWW at that time and that even though change had been taking place, men were still the largest usergroup on the Internet.

Indications that the general public was joining the Internet and that the face of the Internet was changing also came from Internet veterans who felt they were being “chased off” the Internet because novices were taking over Usenet newsgroups posting “useless”

questions or engaging in “senseless” dialogue. The new notion of joining private groups by invitation only was now becoming prevalent according to the president of RSA Security who had been using the Internet for the past 20 years (Online: Internet Pioneers abandon..., 1995).

The discussion above shows how the growth of the Internet/WWW continues at a rapid pace. Certain critics have claimed that the Internet will be overloaded, gridlocked and “crash” but until now no such event has happened. Yet, researchers are proposing a new Internet called Internet II that will be another faster network. Large university centers will be connected via this network enabling researchers to share and transmit vast amounts of information. The “traditional” Internet has moved from 4 bits to six, to eight, to sixteen bits\(^{31}\). It is already evident that today’s standards will be outdated in the near future. Even though it is hard to imagine a protocol other than TCP/IP I am sure a new much faster and more efficient protocol will be developed within the near future. It is important to see that the growth of the Internet is not just merely shown by the increase in subscribers, IP’s, online services but also in the changing attitude of the public, government, business, academia, science and the arts towards this medium as the “new” form of communication. As I have stated previously, my research will concentrate on the visual arts: museums, galleries, artists and concepts such as virtual curating. We have to discover who, what, and how the arts have been integrated on the WWW as the new form

\(^{31}\) In order to understand the term “bits” a comparison using highway lanes can be used. Four bits would represent 4 highway lanes, 6 bits would represent 6 lanes, and so on.
of interactive communication in order to find certain solutions and practices that pertain
to all these. It is impossible to predict the future of the arts via the WWW, its impact on
the traditional art world and education at this point in time. The insight of Lyman Chapin
shows how uncertain every aspect really is:

It doesn’t matter what we extrapolate... It will be too little. It won’t feature the
central thing that becomes important. Those were smart guys in 1969, but they
never thought of mail or news - and twenty years later, those were the principal
uses of bandwidth. A few years ago, I had never imagined a MUD (multi-user
dungeon). I have no idea what will come up next year, much less in 2000.

What will become of the WWW? Although the WWW appears to be the state of the art
today, it really has only been four years since its first appearance. The following chapters
will explore the arts and the WWW and give further insight into my research questions of
this study.
CHAPTER 3

EXHIBITIONS ON THE WWW

Origins of Exhibitions

In order to define what curatorial styles on the WWW entail we will have to take a look at how exhibitions have evolved over time in traditional settings such as galleries, museums and on the Internet. The concept of exhibitions is not so new in the Western World. Exhibitions as we know them today began as an arduous process of collecting and preserving works of art. The process of collecting works of art had for a long time been undertaken by the church or by other wealthy political or religious leaders. Yet, exhibitions at a fixed location for the purpose of demonstrating ideas is about 250 years old. Collections had long been established by rich rulers and bourgeois citizens, but the 18th century brought about the opening of the arts for public consumption. The rise of the French Salon in 1725 had been influenced by the age of the Enlightenment, the rise of the middle class and the establishment of the Académie des Peintures et Sculptures in 1648. The early Salon exhibitions were not open to every artist to submit their work to, but they were open to the public that wanted to visit these shows. With the Salon, the form of public exhibitions received a new quality and level of recognition. It provided
each work of art a function of its own as an accepted entity within an exhibition, which according to Mai (1986) had not been possible until then. Bringing works together in form of an exhibition for a certain length of time for the general public usually has a certain function. Its function was and still is to educate about, present, or preserve cultural knowledge and identities. During that period its role was geared towards the glorification (justification) of mighty rulers of the nations where the works were exhibited. With the Salons the principle of displaying works of art for didactic purposes or displaying them for reasons of excellence was introduced. However, France was not the only nation where the effort of showing exhibitions to the public was taking shape. For example in the Netherlands the furthering of the arts took place through guilds and large artist studios. These were often also accessible to the general public. Mai (1986) remarks that the concept of didacticism, master works and bringing the arts to the public's attention in this way really has not changed much since.

Elizabeth Gilmore Holt (1979) outlines how the French Revolution and the Napoleonic era disrupted 18th century traditional conventions of imperialism and conservatism and propelled art to new levels of public and governmental acceptance. Some examples of the nationalization of the art object and the birth of public museums include four museums in Paris between 1795 and 1804, the British Museum in 1824, the Prussian Museum in Berlin in 1824-28 and others in England and the United States. The fact that many major art collections were now housed in the northern countries of Europe gives a strong indication that Italy’s importance was beginning to fade. In 1802 the Musee Napoleon located in the Louvre opened its doors to the public and, for the first
time, the most comprehensive showing of European art was to be found in France instead of Italy. This might have helped in lifting Paris to the status of the richest art capital in Europe. Italy however with all its assembled treasures did not fade away completely. Many of the most influential artists of the time still studied the classics in Italy. Furthermore, the Prix de Rome was, and still is, considered one of the most influential arts awards that an individual artist can receive in Europe.

**Salon Exhibitions**

With the establishment of the Salons as well as other "prize exhibitions" and the distribution of the arts to the general public also came the dawn of public criticism. The first privately published critical essay entitled "Reflexion sur quelques causes de l'etat present de la peinture en France" by Lafont de St. Yenne in 1746 sought to critique the Salon of that year (Holt, p.XXV). The critic reflected on the shortfall of the Rococo style and certain artists included in the exhibition. Yet, for the first time in French history the critic demanded the right for public criticism. Until then this had been almost impossible due to tight political control. Mai (1986) point out that the development came about through the transfer of control from the monarchies to the general public. Now, exhibitions were not only artistic demonstrations but also a developing social forum for the general public (Mai, p.15-18). The Academy in France gained strength in the matters of the visual arts and other nations followed its examples and philosophies in order to be able to promote the arts and associated politics in their respective nations. By 1756 and then later in 1761 the Society of Arts had organized their first publicly accessible
commercial exhibition. According to Mai (1986) the size of exhibitions grew from a few hundred works to more than a thousand.

As Kluser and Hegewisch (1991) explain, not only were exhibitions huge spectacles with thousands of works, but all of these public exhibitions were multi-artist shows. In 1855 Courbet was the one of the first artists to open to the public a one-person show. Artists had always displayed their works in their own studios but had not made them available in forms of exhibitions as we see them today. Courbet’s exhibition titled "Realism" took place in its own "Pavilion" that had been built for that purpose. The artist was, for the first time in history, able to decide which works to exhibit and install them themselves. The artist in the 19th century had seized the opportunity to curate their own exhibition. Not only could the artist choose which works to include but also how to display them; a very important part of presenting works of art via the WWW. Today’s modern artist on the WWW is also able to curate his or her own exhibition. The artist can choose which works to include, how to display the works and what overall message to convey.

In 1874, under the auspices of Claude Monet, a group of artists joined together to present 165 of their works in a few rented rooms in Paris. This was one of the first exhibitions entirely curated and presented by a group of artists that was not controlled by an academic panel or jurors. In 1884 the famous "Salon des Artistes Independants" is one of the most important modern exhibitions. It publicized the early ideas and notions of individual control not only to the general public, jurors from many institutions, but also to fellow artists. The "Rebel Salon" had also come into existence because the
selection process at the official Salon was influenced by the taste and philosophy of the academy. Impressionism had not yet been accepted by the stately academy but was gaining popularity with the public - a break from lofty ideals, techniques and stylized realism of the end of the 19th century.

**Twentieth Century Exhibitions**

The Secession movements in Europe at the turn of the 20th Century were a reaction against the ideals of the 19th Century and took place in Vienna, Munich and other cities. The Secessions transferred power to the artists themselves. For example, the Secession in Vienna, developed concepts and ideals that are still accepted today at traditional galleries and museums. The concept of the whole artwork as its own entity and new approaches to exhibition design were clearly influenced by this Secession. Exhibitions were laid out in an almost minimalist method: decor from exhibition spaces disappeared and the perfect relationship between wall and artwork was established (Hegebush, p.12). Now one viewed art and not necessarily lived with it as decorative ornamentation in a home. This was a reaction against the ideals of the late Victorian age and the institutionalization of the arts of the 19th century. The artistic exhibition without compromise was the slogan for most cutting edge artists at that time. They believed that everyone should enjoy their artistic freedom and present an exhibition without glamour and unnecessary decor. The exhibition as a self analysis and self presentation was the next step in the continual development of styles. Gustav Klimt’s decisions to promote art in a stark environment that included Jugendstil elements and other movements such as
Dadaism and Surrealism helped tremendously in furthering and promoting these new notions (Kluser & Hegewisch, 1994). George Grosz' and other Dadaist artists' installations and rooms were an entirely new concept. Exhibitions now included artists' talks, other happenings for viewers and self interpretation of the artworks themselves. Avant-garde artists pushed for these new ideals not only to understand and control their own cultural identity but also to break away from the institutionalization of the arts.

Furthermore, wars in the early 20th century also changed certain aspects for exhibitions. The striving for internationalism of exhibitions in the latter part of the 19th century and early parts of the 20th century became an unstable concept (p.13). At the turn of the century World Fairs in France and Great Britain had presented the public with traditional ideals strongly influenced by colonialism. However, the First World War and the rise of nationalism in the 1920's and 1930's brought art back to the local and purely nationally oriented cultural stage of exhibiting. The large international avant-garde exhibitions of the early parts of the 20th century in Europe disappeared. The exhibition titled "Entartete Kunst" that took place in the summer of 1937 in Nazi Germany is just one example of how nationalism was a strong influence on the arts during this time period. The "Entartete Kunst" exhibition included only works by politically accepted artists and the burning of books and artworks by the Nazis during this time period attempted to entrench tight control over artistic creation and taste in Germany. However, looting artworks from other countries by most of the nations involved in World War II also disturbed countries' individual attempts in strengthening their own cultural identity.
The 1950's brought about what Mai (1986) calls the "Hunger for Paintings", especially in Europe, where wars had decimated whole countries, social groups and cultural identities. The rebuilding of economic infrastructures and an increase in wealth helped the arts in the countries which had suffered from these wars. Now, mostly modern exhibitions became one sided in that they showed accepted classics with some avangardistic tendencies as well as group/solo exhibitions and what is understood as "overall views" in curatorial circles. However, the concept with which we are so familiar today of the thematic exhibition was seldom seen during this time period. The concept of exhibiting the principle and letting it speak for itself was the major part of this doctrine until the 1960's (p.54). Later and especially in the 1980's the mega or blockbuster exhibitions replaced many smaller ones. Large exhibitions with hundreds or even thousands of works often appeared to have overtaken the smaller "less" important exhibition. This concept is not so new if one looks back to the Salon of the 19th century where one also could be overwhelmed by thousands of works in one exhibition. The lust for more and more information by the public is a factor that supports the development of today's larger exhibitions. Furthermore, the internationalization of the arts in the latter parts of the 20th century has forced museums to present large blockbuster exhibitions in order to receive world wide attention and to entrench their position in the museum world.

Kluser and Hegewisch (1991) also notice that the actual ability to experience exhibitions has decreased today. Nobody trusts their own instincts anymore. The notion that only what one knows, one believes to "like" or "dislike" seems to be important when interpreting exhibitions and works of art. Both writers also support the notion that the
museum or possibly the curator of the late 20th century is supporting this notion because they are under tremendous pressure from the art market, museums boards, funding organizations and critics to justify themselves. The curator or museum has to justify its notions and curatorial ideas and concepts as much as the commercial gallery is trying to justify the artists' credibility in the increasingly commercial world of art. One cannot forget that the influential critic of today might have the power to destroy a career of an artist. Furthermore, if an exhibition is not presenting new artistic notions it is usually seen as dull. However, when looking back to the 19th century and the world of the Salons the new was seen as “bad.” These notions have changed not only due to the ever increasing frequency of exhibitions and globalization of western art but also because the artist has gained much control in today’s art market.

The discussion above presented some crucial aspects of the historical development of exhibitions from the 17th to the 20th century. It is important to present these developments before taking a close look at how museums, galleries, artist sites and exhibitions have evolved on the WWW in order to distinguish between the traditional and the new. Not only the technological developments of the Internet are constantly changing but also developing aesthetic concepts influence the way the arts are presented via the WWW.

**The Arts on the WWW**

It is important to discover what qualifies as an art site before exploring the different types of art related sites. An art site, like most other WWW sites, consists of an
amalgamation of different types of information and media. As I have pointed out in the previous chapter, most WWW sites use an overabundance of text. In the early stages of the WWW most pages only contained text. Maybe a few scanned images here and there were included but due to the size of the images most sites did not use graphics. This phenomenon was taking place during the time period when a 9,600 baud modem was the norm and transferring graphical imagery was extremely slow by today’s standards. Technical advances have increased the speed for transferring information via the WWW. The average modem speed today is 28,800 baud and the future promises ever faster access to the Internet via traditional telephone, cellular or cable lines. US Robotics for example has already developed the X2 technology that allows transfer rates of up to 56K via traditional copper telephone lines and are also developing a new protocol to increase speed hundredfold even thousandfold within a few years.

A visual art site on the WWW should consist of more than text to qualify for being labeled a visual art site. This brings us back to the concept of media amalgamation that I pointed out at the end of the previous chapter. An art site should contain text, scanned imagery of artworks as well as sound, movies, and other possible interactive qualities in order to set it apart from other non artistic WWW sites. Let us now take a quick look at what a WWW page can incorporate.

Text is one of the most common elements in WWW pages. It can be taken from either the traditional print media and retyped/transformed into HTML\textsuperscript{32} format or it can

\begin{footnote}
HTML is short for Hypertext Markup Language, the language of WWW page coding.
\end{footnote}
be created directly in a computer in HTML format. Text loads faster in any browser and transfers via the WWW quicker than images, other graphical elements or sounds because its format is ASCII based. However, limitations to text are still severe because most browsers only display text in the Times New Roman font. The only options the creator of WWW pages has is to create text in either normal, italic or bold type, (HTML Primer, 1996). In other words a wide variety of text manipulation possibilities that can be found in other well known traditional media like magazines, journals, newspapers and desktop publishing programs such as Pagemaker and Quark Xpress do not exist on the WWW as of January, 1997. Yet, the promised standards of Cascading Style Sheets will provide nearly as much control in layout as the desktop publishing programs mentioned above.

A few sites have displayed text in form of a graphical element (picture) to overcome the current layout problems. However, this forces the user to digitize the selected text as a graphical element and its binary format will slow transfer speeds and load the page much slower than if created in ASCII format. Yet, with new advancing features, the Netscape 3.01 and new versions of the Microsoft Internet Explorer are now able to show certain other fonts. However, the choice of fonts is still limited to a few well known ones such as “Arial” or “Helvetica” and if the computer does not include this font in their choice of fonts it will display text in the default “Times Roman” font.

Graphics are one of the most important elements of visual art sites on the WWW. One can place a picture, let’s say a painting by Robert Rauschenberg, on the WWW only after it has been digitized and transformed into the .gif or .jpg format. This is usually done by using a photograph or slide that is a graphical representation of the original work of art. The image then has to be transformed into one of several digital formats so that the WWW browser can interpret it. This is done with the aid of a flatbed, drum or slide scanner. Unfortunately, these steps do bring about a loss of quality of the image itself. It is also important to note that imagery that can be included in a WWW page can also be created directly on the computer without the need for a scanner or other traditional transforming devices. Computer artists often create works of art directly on the computer platform and thus do not have to go through the extra step to transform the image via a scanner. Yet, most art sites on the WWW are not computer artists displaying their latest creations, but represent artists with a more traditional approach to art. Traditional painters, sculptors, printmakers or other individual artists’ sites make up over 90% of all artist sites\(^34\) on the WWW. Furthermore, the size of binary graphics files is often a deterrent from using many images on one page. I have found from experience that if a page on the WWW takes too long to load due to large image files people will leave the site altogether and continue their exploration somewhere else. This is one of the reasons why so many art sites use thumbnail\(^35\) images that are smaller representations of the


\(^{35}\) A thumbnail is a smaller version of a digitized image.
larger graphic representation of the work of art.

One WWW page element that is not as common as the well known graphics and text format is that of sound. Very few art sites use the element of sound in combination with works of art. It might be due to the fact that binary sound files are also often too large to transport via the WWW and the technical difficulties are more prevalent with sound. It can still be an arduous and difficult procedure to digitize high quality sound without expensive technical equipment. Furthermore, most PC soundboards will not produce quality sound files that are platform independent. The incompatibility of different computer platforms when it comes to sound formats makes this even harder. Many WWW browsers cannot interpret .aiff or .midi sound files without the help of special software that the user will have to run in addition to the WWW browser. Manufacturers have tried to overcome this problem with the help of software that is now often bundled with the WWW browser as a plugin\textsuperscript{36}. Progressive Networks and Netscape announced in October 1996 an initiative to develop a protocol that would allow audio from a variety of different formats to interoperate\textsuperscript{37}. This new protocol called Real-Time Streaming Protocol (RTSP) would hopefully simplify communications between Internet audio and non-Internet audio types such as standard telephones, cell-phones and even pagers. This would prove to be major breakthrough for art sites using audio elements.

\textsuperscript{36} A plugin is software that comes bundled with the browser and will run automatically when encountered. Mosaic for example forced the viewer to first download the software manually and then start it.

However, the development of audio elements via the WWW is still in its infancy. Even though Real Audio\(^{38}\) produces the "Real Player" sound and video are still of low quality and often "jerky". The difficulties and limitations in using sound should not deter the creator of an art site from using all of these elements when publishing their pages on the WWW.

Another hard to find element on art sites on the WWW is moving images such as film clips or other information in the form of digital video. Although some sites use them for purposes of explanation, the limitations of platform independence once again play an important role. The average home PC does not have the technical capability\(^{39}\) to render good quality images when it comes to movie formats. The per minute frame rate on a home PC is severely reduced when compared to regular movie or television images thus making the images jerky and of low quality. Of course larger graphics oriented computers can display these images without jerkiness. The general public often does not have access to such machines. This is one of the factors that should be kept in mind when creating moving images for WWW sites. Furthermore, MPEG or Quicktime movies are fairly small in size (the width and height of the frame) when viewed via a low end computer. The last but not least problem is also the size of binary movie file. A few

\(^{38}\) Real Audio, produces plugin software for streaming audio and video via the WWW. (1997). http://www.real.com

\(^{39}\) This is the case when one compares the home PC to a high end UNIX workstation such as Silicon Graphics computers or Macintosh computers that are designed for this type of format.
seconds of high quality moving imagery are usually in the hundreds of thousands of 
bytes. To digitize movies or videos for viewing on the WWW also takes expensive 
equipment and software and most artists, galleries and museums do not have the 
equipment to do so.

One of the most important aspects in regard to WWW art sites is the hyperlink itself. WWW sites are usually structured in a hierarchical, tree-like fashion with a 
starting page that includes hyperlinks to other areas of the same WWW site or even links 
to outside sites that reside anywhere on the WWW. A graphical image, a word, a movie 
or other multimedia items can be hyperlinks to any other form of media element that can 
be displayed or interpreted by a WWW browser or its plugin software. The inclusion of 
hyperlinks and live data\textsuperscript{40} makes this medium exciting and almost limitless in 
possibilities. The discussion below will provide insight into the different types of art sites 
on the WWW.

\textbf{Museums on the WWW}

Visual art sites on the WWW can be divided into several categories - museums, 
galleries, artist sites, and other visual art sites that cannot be categorized in traditional 
terminology. The sites’ quality of information and presentation vary greatly but a closer 
look at each of these categories will determine their differences, strengths and 
weaknesses.

\textsuperscript{40}

See the explanation of live data in Chapter 1.
As I have pointed out before, museums on the WWW have been slow in joining the age of global arts information facilitation. Not only have copyright issues kept museums from creating web sites for their permanent collections but the distrust of computers may have also played an integral part in these judgments. Furthermore, most museums do not even have modern computer networks within the building” (Pinchbeck, 1994).

The range of quality museum sites is astounding. Let’s take a closer look at what information museums actually provide via the Internet. One of the major museum sites on the WWW in terms of fame and recognition is the Metropolitan Museum of Art in New York41. The WWW site follows the “normal” hierarchical tree like structure with an entry home page that is used as a starting point to more pages and further information further down in the hierarchy. The design this page follows is common with many museum sites in that it shows an image of the outside of the museum building followed by a short description about the museum itself and links to membership, calendar, collections, news and museum shop information. One immediately notices that the design of this site, as well as that of most other museum sites, is highly text oriented in their presentation. A “teaser” image here or there in any of the pages at any place in the hierarchical structure are intended to entice the visitor to visit the actual museum. When it comes to presenting the permanent collection one or two thumbnail images per current

exhibition is the norm that this and many other sites follow. One of the shortfalls is that most of the designers of these pages have little curatorial or exhibition design experience. For example at the Metropolitan Museum of Art WWW site the Winslow Homer hyperlink thumbnail praising one of the museum’s most important exhibitions of that season did not lead to a larger image or any further information about the artist or exhibition. Even the title of the work had been omitted.

The Metropolitan Museum of Art as well as the Dallas Museum of Art\(^4^3\) (DMA) show a few “teasers” from the permanent collections but have not yet begun to make their entire collections or exhibitions available via the WWW for research, educational purposes or entertainment. This might result from the lack of monetary resources, or as I pointed out before, the attitude of many museum officials regarding WWW sites might play part in this. Until recently all the Dallas Museum’s images from the permanent collection were entirely served by a gopher server\(^4^4\) that is still accessible today instead of a WWW server. Images do not include any further information pertaining to the work of art other than a digitized representation of the piece itself. Once again the artist, title, date or any other important information that relates to the work of art is not included with


\(^4^4\) The Dallas Museum of Art. (1995). gopher://gopher.unt.edu/11/dfw/dma. A gopher server is an early version of a server that can be compared with a WWW server but is much more limited in its capabilities.
most of the images. Although, the main starting pages of the Dallas Museum of Art follow the tree like site structure that can be found at almost every museum WWW site. The permanent collection of European art is still served by the old gopher server giving little valuable information. The DMA’s Arts of the Americas section now finally includes rudimentary information about each thumbnail image that may also be enlarged to a larger graphical representation by following the thumbnail hyperlink. This is an improvement over the gopher server presentation but in my opinion unacceptable in terms of exhibition and WWW site design. How devastating would it be for a museum exhibition if the works of art displayed on the walls would not include any information about the pieces whatsoever - no artist names, titles, medium or dates?

The Brooklyn Museum of Art, on the other hand, includes curatorial statements and other information with a representative thumbnail of each work of art it publishes on its WWW site. It is then possible to follow the thumbnail to a larger digitized image that also includes important information about the work of art. Although the Brooklyn Museum only shows 19 works of art from the permanent collection that must number


52
close to a million\textsuperscript{48}, the museum has accepted the responsibility and the importance of educational elements geared towards younger generations within their WWW site. According to a speech given by the First Lady of the State of New York, Libby Pataki, "through the power of the Internet I have been able to share this and other incredible pieces of the Museum's collection with my four children. They are big fans of the Brooklyn Museum home page - especially around report time\textsuperscript{49}.

A precise and clear design of the WWW site makes it possible to follow the hierarchy in a user-friendly manner. From the very descriptive Brooklyn Museum home page the viewer has the option to select from a number of hyperlinks. Locational information as well as different collections are clearly outlined. Once following the link to any one of the collections the viewer will first reach the main page of this collection and learn general information before proceeding to more in-depth information and representations about certain works of art in the collection\textsuperscript{50}. The viewer is then able to select a certain artist or work of art and proceed to a thumbnail image with curatorial statements\textsuperscript{51}. From there the viewer may then select a larger digitized version of the work

\begin{flushleft}
\textsuperscript{48} The Brooklyn Museum claims that it does not have the financial resources to enlarge its site, (Telephone Interview, Ann Marie Sekeres, November 1996).
\end{flushleft}
of art that still includes the name of the artist, title, date and other information. In other words a hyperlink from anywhere in the world could lead directly to the large digitized version of the piece and the visitor would still know what he or she is viewing. Most museums on the WWW do not include this information and thus make most of the larger digitized images more difficult to interpret. Furthermore, the Brooklyn Museum is also one of the only museums on the WWW that includes hyperlinks to other sites. The Painting, Sculpture, Prints, Drawings, and Photography collection page\textsuperscript{52} includes hyperlinks to the Web Louvre\textsuperscript{53}. Most others appear to be afraid that the visitor will leave their site altogether when including links to other museums or gallery sites that offer information that might educate the WWW visitor further. Thus close to 100\% of WWW museum sites are self-contained sites promoting only their goals instead of making this a global arts information and education facilitation medium.

There are also a large number of museums that only present a little information about the collection, programs or any other areas of the museum. For example the Hartwick Pines Lumbering Museum\textsuperscript{54} in Michigan does not even show any images from their art collection or museum at all. This site appears to be more of a marketing


\textsuperscript{54} Hartwick Pines Lumbering Museum, Michigan. (1996). This is an living history museum that also exhibits art, historic technical equipment and architectural elements. http://www.sos.state.mi.us/history/museum/museum.html
publication than a well designed, education or information oriented WWW site. This brings us back to the first examples like The Metropolitan Museum of Art where the emphasis seems to be on selling gifts from the museum shop rather than the presentation of the permanent collection, present or past exhibitions. Another example is the Wexner Center for the Arts located in Columbus, Ohio. Their WWW site offers information like most other museum sites on the Internet. The emphasis once again seems to be on marketing aspects rather than on educational ones. It is evident that there is a lack of information that relates to exhibitions, performances or video presentations. In the case of the Wexner Center the site appears to be so marketing oriented because its creation was the responsibility of the marketing department. It is necessary for the curatorial, educational and marketing departments to work together to develop content for their WWW site.

No museum represented on the WWW has yet presented an entire exhibition to the public via this medium. A few “teasers” with explanatory text make up all of the museum sites presently found on the WWW. The museum world has not yet understood that visitors via the WWW might also be counted as real visitors in the near future. This might encourage the museum to come to terms with the shortfalls of the present WWW site content and to create a site that offers possibilities for education, research and


56 Mr. Adelman (director of marketing) oversaw the entire creation of the WWW site.
entertainment that have not yet been explored by any museum. Past museum exhibitions for example could be documented for future generations to view. How exciting it would be to be able to walk through an exhibition that took place two years ago in Tokyo. It would make exhibitions accessible from all across the world, open their doors and information to all members of the public, and even further the exposure, impact and marketing aspects of the exhibiting institution. It could also create a new form of exhibition where not all works included are actually shown at one physical location. It could aid teachers with WWW access to view exhibitions prior to visiting the actual exhibition with their class or make it possible for a classroom in Australia to view an exhibition in Germany. It could benefit curators from many institutions to communicate, plan exhibitions in a more efficient manner and aid academic researchers in their work. Marketing departments that are responsible for elements relating to traveling shows could form a group of experts. This group would lessen the workload for each institution. The museums’ concern for losing “real” visitors if they present too much information via the WWW is evident. Yet, there is another category of museum that has not yet been discussed and might already approach some of these considerations when designing their WWW sites: the virtual museum.

**Virtual Museums on the WWW**

Throughout history the task of a museum has been to educate, preserve and exhibit works of art as well as to preserve and further certain cultural identities and then make this information accessible to the general public (Mai, 1986). The virtual museum
is important when considering the relationship between the historical and future responsibilities of any museum.

There are three different types of virtual museums that can be found on the WWW. The first category of the virtual museum represents a museum that does not exist at a physical location for the general public to visit. For example, the Paintings of Vermeer site\textsuperscript{57}, located at the California Technical University server, provides information about the famous artist and all of his known works of art. This virtual museum includes traditional and contemporary interpretations about the artist’s work and life\textsuperscript{58}. Although dedicated to one artist, this site offers educational elements intermixed with curatorial statements and other information pertaining to the artist in such a bold way that it cannot be found at any other museum on the WWW. This site qualifies as a virtual museum because it preserves the works of art not in the traditional physical sense but it preserves representations of the imagery and information in a form of virtual preservation. It also makes it accessible in an educational manner to everyone on the WWW just like a real museum should do with any traditional exhibitions. Furthermore, it brings all of Vermeer’s works together; a task that has never been accomplished by one museum.

\begin{footnotesize}
\textsuperscript{57} Paintings of Vermeer. (1996). http://www.ccsf.caltech.edu/~roy/vermeer/

\textsuperscript{58} This reminds me of the Musee Picasso in Paris, France. (1996). http://www.paris.org/Musees/Picasso/
\end{footnotesize}
The second category of the virtual museum is a phenomenon that has not yet been explored at all on the WWW and is more of a hypothetical concept than present reality. This hypothetical virtual museum would be entirely created and maintained by the general public visiting via the WWW. This museum does not exist in physical reality but can provide as much information, education, preservation and as varied exhibitions as a traditional museum. The general public could create, maintain and even curate exhibitions at this type of virtual museum via the WWW with the aid of interactive computer programs\(^9\). Furthermore, the public could decide, vote and discuss which works of art should be included in the virtual museum, thus making it the first truly democratic curatorial process. It would even lead to the possibilities where every user and visitor could create their own version of the virtual museum and include their favorite works of art from all over the world. This concept would not be a favorite for established museum curators because it would relinquish their fundamental control over the curatorial process and give the power to the public. Yet, it could help curators in their choices for selecting works for exhibitions. This even leads to the possibility that the public in conjunction with the curators of an exhibition at the Museum of Modern Art in New York could curate and lay out the exhibition design and didactic elements for upcoming shows at the museum. Through this process the museum could involve the

\(^9\) CGI scripts enable interaction via a WWW browser and WWW server so that the user could upload text, images, create new pages, hyperlinks and maintain let’s say sites anywhere in the world. One also has to note that the advancement of the JAVA language will create platform independent computer applications.
public globally. The truly democratic museum without walls could be invented through these means.

The third category of the virtual museum is the museum that is entirely created in the computer by a computer artist. Through computer software and languages such as VRML\textsuperscript{60} the artist could create a virtual environment that would make it possible to navigate through. This museum could, for example, include works of contemporary artists, artistic interpretations of works by Leonardo da Vinci or any other virtual work of art that a computer artist decides to create. With the underlying concepts of the traditional museum this virtual museum could take these concepts even further by including an amalgamation of media such as text, graphics, interactive virtual environments, sound and moving images while educating, preserving and displaying works of art to the public via the WWW. According to Gigliotti (1994) interactive virtual environments are essential to the success of the arts via the Internet and it can be presumed that the success of this type of virtual museum would also depend on these qualities. This type of the virtual museum would create these important interactive characteristics in such a way that has yet to be fully explored.

The discussion pertaining to museums on the WWW has developed the strengths and weaknesses of approaches by traditional museums and the possibilities of virtual museums. However, it is important to take a look at all the other types of art sites on the

\textsuperscript{60} VRML - Virtual Reality Modeling Language is a language that makes it possible to create physical environments that a user can move through with the aid of a WWW browser that of course would be able to understand the VRML language.
WWW before approaching the important concepts of virtual curating that are so vital to
the success of the visual arts on the WWW.

**Art Galleries on the WWW**

Art galleries and virtual art galleries on the WWW have entered the information
facilitation era at a much more rapid pace than museums\(^{61}\). This is evident by the number
of gallery sites that can be found on the WWW. Galleries range from little known
commercial and non-commercial galleries to well known powerhouses in the
international art market to obscure virtual commercial and non-commercial galleries.
However, as with museums it is not surprising to find a wide range of quality among
gallery sites. Most galleries on the WWW have attempted to further their marketing
strategies via this new medium. Not only does this offer more exposure, an opportunity
to sell a work of art, but it also makes it easier for galleries to interact with one another.

The PaceWildenstein Gallery, an internationally known player in the art market,
located in New York and Los Angeles, has offered a WWW presence since early 1995\(^{62}\).
Following much of the same structure as most museums, the tree like approach with a
main home page and following hierarchical elements lead to information pertaining to
most aspects of the gallery. Exhibition schedules for both locations in New York and Los
Angeles invite the viewer to discover more information further down the hierarchical

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\(^{61}\) Arts Indices on the WWW have a much larger number of galleries than museums.

structure, to enlarge thumbnails from the exhibition as well as read relevant information about each artist. The layout of the Samaras exhibition page\textsuperscript{63}, for example, allows the viewer to not only enjoy a few samples from the exhibition but also offers links to the artist’s biography, selected public collections (including hyperlinks outside the PaceWildenstein WWW site), and other WWW sites that offer relevant information. This well structured site offers very clear and well designed information via the WWW but it does not market the gallery or exhibition in a way that is often found at other commercial art galleries.

Most commercial galleries on the WWW take a more marketing oriented approach. Shopping carts\textsuperscript{64} and online order forms are not an uncommon focus of many of these sites. The emphasis appears to be on selling the actual work of art with little or no educational concern. Two different approaches seem to distinguish commercial galleries from one another. First, high quality commercial galleries focus more on exhibition calendars and actual examples of works in terms of added marketing exposure without a strong emphasis on online selling. The other type of gallery that is traditionally not so highly regarded in art market circles concentrates more on the actual selling of the work of art online. The quality of art made accessible via the WWW by this type of gallery is usually of lesser quality with a higher emphasis on selling and promoting the


\textsuperscript{64}\ A shopping cart is an interactive WWW element that allows the visitor to select items for purchase and later order any of them online.
gallery itself. For example the Aerodrome Gallery\textsuperscript{65}, located in Australia, is offering signed limited edition prints to the general public via the WWW. A thumbnail representation and a short description about each work of art are to lure the WWW visitor to order the work via an insecure\textsuperscript{66} online order form\textsuperscript{67} that allows the user to enter a credit card number. The emphasis at this site is so much on selling that the creators neglected to even include any exhibition schedules. Many commercial galleries of this type follow this highly mercantile oriented interface. Often one can also find flashing buttons that advertise specials and other “enticing” marketing options at these sites.

Moreover, the interface elements one finds most often at commercial WWW galleries is a hastily designed site that includes some information about the gallery and works that are for sale. For example, the Adorn Gallery\textsuperscript{68} follows this most common form: a short descriptive paragraph about the gallery, a few thumbnails, possibly larger graphical representations from exhibitions and individual artists as well as the contact address and sales information.

A possibility that no commercial gallery has explored yet is that the gallery would


\textsuperscript{66} Insecure online order forms do not encrypt the information the WWW user sends via the WWW, therefore making it possible for computer criminals to intercept the information.


not actually need to carry the works in their inventory. For example, a WWW site could represent the works of art from all across the world. The gallery would only need to be the facilitator between artist and buyer in that the work could reside anywhere in the world. When the buyer is interested in the piece arrangements could be made to ship the work for preview or actual purchase.

Non-commercial galleries on the other hand concentrate more on educational, non-commercial marketing aspects as well as nicely designed presentational features of the WWW site. One can find many university galleries on the WWW that are trying to market the image of the gallery in a balanced way. For example The Ohio State University Newark, Art Gallery\(^6\) made all its exhibitions available to the public for the 1994-1995 season. Following the tree like hierarchical structure, the gallery attempted to make all images from the exhibitions available via the WWW in such as way that it would almost mirror an actual visit to the gallery. Curatorial statements with thumbnails that lead to larger images and other pertinent information allows the visitor to navigate current as well as past exhibitions. The attempt of this gallery was to bypass well known university galleries in order to gain more exposure in the university gallery arena via the WWW. Yet, this gallery followed the practice of most exhibiting WWW sites in that it did not present entire exhibitions.

Quite a large number of non-commercial online galleries have appeared on the

\(^6\) The Ohio State University, Newark Art Gallery. (1996). http://www.crgo.ohio-state.edu/~mkruse/osu.html
WWW. However, most of these galleries fall either into the category of university
galleries, personal artist galleries, or virtual non-commercial galleries. The latter has
been explored by these parties to such an extent that most museums or commercial
gallery sites could only dream of. The way they have presented information via this
medium has been in the forefront of WWW exhibitions and design.

Virtual Galleries

The @Art gallery\textsuperscript{70} site is a virtual electronic art gallery affiliated with the School
of Art and Design at the University of Illinois at Urbana-Champaign. This site is curated
by faculty members with an intention to further the inclusion of young artists in the
global electronic community as well as to offer a place for these artists to showcase their
works. This gallery not only presents current electronic exhibitions but also archives them
for future visitors to have the opportunity to view works from past exhibitions. For
example, the Peter Campus exhibition “Grayscale Fields”\textsuperscript{71} includes an artist statement as
well as a vita, thumbnail and larger images that make up the exhibition. An
unprecedented strength of this exhibition is that it was designed entirely for the WWW as
a virtual exhibition taking full advantage of the medium itself\textsuperscript{72}. The artist however

\textsuperscript{70} @Art. (1996) http://gertrude.art.uiuc.edu/@art/gallery.html

\textsuperscript{71} @Art, Peter Campus Exhibition. (1996).
http://gertrude.art.uiuc.edu/@art/peter_campus/peter_campus.html

\textsuperscript{72} The exhibition does not have to rely on scanned representations of actual artworks or
other limiting factors when transferring traditional exhibitions to the WWW. See the
leaves out pertinent information about each image - it does not include the medium, date, size or any other information. Yet, the artist might have intended it this way.

Another well known virtual gallery is the “Abulafia Gallery”\textsuperscript{73} that was created by the artist Matthew Lewis from the Advanced Computing Center for the Arts and Design\textsuperscript{74} in early 1995. The Abulafia Gallery is one of the first virtual galleries on the WWW that allows the visitor to navigate through a virtual environment to view the works via VRML or an approach interface that lets the user navigate forward, backwards, left and right\textsuperscript{75}. According to Lewis (1996), the gallery’s purpose was twofold. First, the artist did not have an outlet to show his paintings at the university because he was not eligible to be included in exhibitions that were organized by the art department due to his university department affiliations. Lewis used the virtual gallery to bypass official exhibition channels to showcase his work via the WWW. The second intention was to find out how many people would actually visit this virtual gallery in order to explore if there was an actual interest in virtual galleries. Although, this gallery is very innovative in its approach it misses vital educational elements that so often can be found at other non commercial gallery sites. Only a short statement has been included in the gallery that discussion of limiting factors earlier in this chapter.


\textsuperscript{74} ACCAD. (1996). http://www.crg.oheo-state.edu

\textsuperscript{75} The navigational possibilities remind me of the layout of a compass.
does not further the understanding of the actual works of art. Perhaps the artist and creator of this site excluded these elements on purpose.

Mixed Type Exhibitions

One can also find exhibitions that mix the traditional with the virtual. A few groups of art professionals have tried to fuse these media. At SIGGRAPH\textsuperscript{76} conferences one can find WWW based exhibitions that have been included in traditional exhibition settings. In certain instances museums have also included computer terminals in their museums to help the visitor to navigate through the exhibition space and offer information about their collections. Most of these have however fallen short in that they should introduce the WWW as a new medium for displaying art rather than use these opportunities to only present a map of the museum or exhibition space. These possibilities create a new opportunity for the entity or institution that is organizing these types of mixed media exhibitions. In order to be effective they have to fully understand both types of media, its possibilities and limitations, and ways they might alter the entire concept of the exhibition. It is easier for the viewer to fully understand the meaning of each medium when being immersed in one of them at one time. Yet, this new approach might also help establish a better acceptance of the visual arts on the WWW by the art establishment and the general public.

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Artists Sites

Individual artist sites also follow the familiar formats. Most artist sites are presented in the traditional manner: explanatory text, images, vitae and contact information. Many of these sites are a scaled down version of a catalogue raisonné with a marketing twist to bypass traditional channels i.e. galleries and dealers. By the beginning of 1996, over 3,000 individual sites had been registered at World Wide Arts Resources77. Most traditional artist sites are not necessarily commercially oriented but attempt to further the exposure of the artist itself. For example the John P. Civitello78 art site includes information about the artist: biographical information, selected exhibitions and collections as well as awards and honors. The site also offers a selection from his paintings that are first presented in the thumbnail style that lead to larger images. Most other artist sites showcasing the traditional artist follow this format.

Yet, there is also the artist site that pushes the WWW medium itself to the present limits79. For example the WWW site of well known computer arts pioneer Charles

79 With the ever changing nature of the WWW in terms of technological aspects today’s limitations might be overcome by technical advances in the near future.
Csuri\textsuperscript{80} does not only include biographical information\textsuperscript{81}, a selection of images, animations and stills, a commercial corner but also a virtual playground\textsuperscript{82} that lets the visitor create their own versions of his work. It introduces the digital art object in a new light. According to Csuri (1996), the playground lets the viewer move from a passive position to one of participation. Through a forms interface\textsuperscript{83} the visitor may select from six examples of his works and create “new” versions. For example, figures may be rearranged, elements can be pushed to the left or to right of the composition and the viewer may even choose the resolution of the resulting work of art. This offers a form of limited interactivity\textsuperscript{84} that has not yet been explored anywhere else in combination with these traditional elements. It is important to think not only about the digital art object itself but also the fact that the viewer is allowed to participate in a new form of interaction that Corcoran calls the digital art activity.


\textsuperscript{31} Unfortunately, this information is limited in scale and the artist seems to neglect to present important portions pertaining to his body of work before concentrating on the computer medium.


\textsuperscript{33} A forms interface lets the WWW visitor submit information via the WWW so that a server related CGI program may interpret this information and present results from the variables that the visitor submitted.

\textsuperscript{34} There is a limited number of possibilities for rearranging the images via the form. The CGI-script does not actually create the works themselves but pulls them from a library where all the possibilities reside.
Virtual Artists Collective

Another type of artist site is the virtual artist collective where a number of artists present their works of art via the WWW. This type of site is also an attempt to bypass traditional art market channels like galleries and dealers to heighten the exposure of each individual artist through this medium. Furthermore, these collectives also represent artists who do not have the possibility to be represented by a gallery or dealer for several reasons - their body of work does not meet the standards of the gallery or their work is inaccessible to a gallery because of monetary or geographical difficulties.\textsuperscript{85} The collective is a new way of marketing works to the general public as well as to commercial galleries that might be searching the WWW for new potential artists.

The Artist’s Den\textsuperscript{86} is one of the few arts collectives on the WWW that approaches the medium itself in a traditional way but pushes it to its limits. The Den is also the first collective that is open to every artist on the Internet. Artists may add their works to the Den via the WWW themselves immediately. The works are then accepted in the gallery in real-time and can be viewed by every visitor. The virtual artists collective has been born with this site. It approaches technical problems in a revolutionary way. Until now most WWW pages have been served by a WWW server. The Artist’s Den on the other hand confronts technical limitations in form of an interactive database that could also be

\textsuperscript{85} It would be possible for artists in remote geographical locations to exhibit, market and sell their works.

called the first truly democratic virtual artists collective. It is the first artists database on
the WWW where the artist can add his or her own works immediately. A special VRML
interface also allows the visitor to navigate through the collective. This is what makes
this virtual artists collective so innovative in its attempt to create a "stimulating,
educational and inspirational environment for art enthusiasts". The commercial
marketing aspects at this site have been kept to a minimum because funding for this
project originated at the New Mexico Technical College. Since the university and
creator of this site received government funding for this project the site and project are
legally owned by the State of New Mexico. Therefore, the state is now dealing in art
objects. Furthermore, some images on this site depict nudity and certain critics would
surely call them pornographic. If this situation is not handled with caution its critics
could claim that this site and therefore the State of New Mexico is pandering
pornography. Yet, the potential for this site is immense in terms of exposure for artists
from around the world.

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88 Personal Conversation with the creator of the Artist’s Den, Matthew Wells.
(January, 1997).
Other Arts Sites

Other visual art sites follow the traditional or virtual format much like museums, galleries and artist sites. Educational departments, publications and e-zines\(^{89}\) offer information that relates to their individual interests. Most university art departments represented on the WWW offer course descriptions, faculty information and general information related to curricular elements like courses of study. Unfortunately, only a few of these departments also present student work that would offer the viewer a closer insight into the actual quality of teaching approaches in that department. This could also offer the possibility to prospective students to take an actual look at the department before deciding to enroll in courses at that institution.

Visual arts publications on the WWW often follow the traditional approach of mimicking magazines or newspapers in their site layout and design. For example Art Daily\(^{90}\) the first virtual daily art newspaper on the WWW located in Monterey, Mexico presents four to five cover stories every day. The stories usually relate to the arts market, auction market, museums and galleries. The layout of the site and design elements very much represent a traditional newspaper with no interactive elements that could really push this publication to exciting new possibilities. Most other arts publications are usually a collection of articles with a few representational thumbnails. Yet, it is important to note that these publications also offer an outlet to scholars and enthusiasts

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\(^{89}\) E-zines or “electronic magazines” are another form of Internet publications.

who otherwise could not necessarily publish their writings in traditional scholarly magazines or journals. They might give rise to new critics, writers and artists who would otherwise not have this exposure.

It is important to note that most sites on the WWW follow a format that by now has been accepted as the norm and standard by the public as well as creators. In my opinion, since the WWW is so young, we are at a point in time where the traditional marketers, sponsors and enthusiasts of the visual arts will have to learn a new form of communication. This new communications medium will have to be learned and at the present time only a few individuals are understanding the limitless possibilities and are pushing the boundaries. Art sites on the WWW often remind me of a young infant that is learning a new form of communication. However, the infant is attempting to communicate in a way that others have yet to learn in order to make the communication effective. The infant’s language is so new to even the creators of the language that it makes it very hard to communicate ideas and information in a responsible manner. Furthermore, the vocabulary both parties use is also still in its infancy. Before a full vocabulary and understanding of the language has been developed it will be an arduous process to communicate via this medium. The following chapter on virtual curating will explore the necessary ground rules for this new form of communication.
CHAPTER 4

VIRTUAL CURATING ON THE WWW

Background

What does an exhibition represent to the viewer and the creator of such an event? According to Karp (1988) exhibitions are placed in settings that differ in age, collections, contents, target audiences, national, regional orientations and missions. In his statement he specifically talks about museums but one can take these same notions and apply them to galleries, artist studios, and even art related WWW sites. An exhibition is usually a representational display of objects, at a certain location, for a certain period of time and for a certain purpose. The objects themselves in an exhibition vary greatly. They can be traditional paintings, sculpture and other artistic creations; or it can be an idea, a notion, or constructed entity that can be physically displayed for an audience. Gurian (1988) separates the object to be exhibited from the presentation. She points out that the producer of such an event can and should choose ways that the viewer is either empowered or isolated by the display. The location can vary from a museum, gallery, artist studio to even the WWW. However, the location is also often politically influenced. Gurian (1988) explains that in the case of museums most fall into three
delineated political categories: "establishment institutions, self-consciously liberal museums, and counterculture museums".

The location is also important in terms of spatial arrangement; the area for display must be accessible to the viewer, observer or interpreter. The time period of an exhibition can also vary greatly in terms of how long the display of art objects is made available to the visitor. A performance can last a few seconds, minutes, hours or even days. An exhibition can be displayed in traditional museum, gallery, or studio settings for weeks, months and even years. On the WWW an exhibition will exist for as long as it is made accessible via the server. The purpose of an exhibition is usually determined by the curator of this event and also varies tremendously not only in terms of location and length of time but also in terms of notions and concepts.

The curator is responsible for researching the ideas, objects, and artist(s) to be embraced in the display of objects. Yet, the curator develops a very individualized presentation. As Malik and Tawadros (1996) point out, visitors to an exhibition should be aware that what they are seeing is a constructed entity:

We are being told a story, a very particular story, based on the decisions and assertions of a curator or a group of curators... It would perhaps be easier if curators of exhibitions could somehow inform their audiences that what they are seeing is not material that “speaks for itself”, but material filtered through the tastes, interests, politics, and state of knowledge of particular individuals at a particular moment in time (Malik and Tawadros, p.113).

Until now Western traditions have dictated that the curator has the overall control and power when it comes to presenting his or her individualized story. The audience can
accept or reject these personalized visions and presentation of ideas. It is not only a struggle to decide which art objects to display but also a struggle for the curators to justify their ideals to the art world and the visitor. This has been the case since the beginning of the modern museum. The Salons of the 18th century were the continual presentation of institutionalized ideals and aesthetics. Courbet’s one person exhibition was the presentation of one person’s concepts or story. Not much has changed since then. Malik and Tawadros (1996) point out that the power lies with those who name, define, and bestow identity. In this case it is the curator. Yet, the curator works within the institution that is also trying to justify its own existence. Duncan (1990, Exhibiting Cultures) points out that the justification is not merely aesthetic. He explains that the museum is a necessary political fixture in what he calls a well-furnished state. Furthermore, he supports his argument by pointing out how “Third World Countries” joined in the race to establish large national museums. This is to signal to the Western Powers that the nation is a reliable political ally with respect for Western symbols and ideals. For example, in 1975 The Metropolitan Museum of Manila was rapidly established by Imelda Marcos within a few weeks. The collection’s emphasis surprisingly concentrated on American and European art. Most works were on loan from the Brooklyn Museum, Los Angeles County Museum and other notable western private collections. Its inaugural exhibition coincided with a meeting of the International Monetary Fund (IMF). It is evident that this new museum’s intention was to impress foreign bankers visiting Manila (Duncan, p.89). The museum was attempting to establish a respect for the country and its political leaders through the showcasing of Western art.
Furthermore, it demonstrated an understanding for traditional Western aesthetics. Both of these factors must have been very important to the creators of the museum and the meeting of the IMF.

But how has the Western tradition presented its identity? It is not necessarily the presentation or selection of objects that are important. It is the continual aesthetic power struggle that is of utmost significance. According to Gerardo Mosequera (1994) the art world is divided into two camps: curating cultures and curated cultures. For example, an exhibition at a conservative institution displaying Aboriginal art objects is often a modern Western interpretation of Aboriginal art and not about what these artists from Australia intended. This is very important when looking at the opportunities the WWW has to offer. With the possibility for the globalization of the arts the concept of cultures curating other cultures might lose its present day dominance. National identities might be able to be displayed in ways that would further not only a Western understanding of ethnic cultural aesthetics but also an understanding of modern global aesthetics.

MacDonald (1992) uses the example of the Canadian Museum of Civilization (CMC) and talks about the concepts of identity as “the community”. He describes the community as diverse groups of visitors that include different ethnic groups and different identities. He points out that the CMC covers over 350 cultures in its presentation of information and exhibitions. Its multicultural approach is different from that of many museums in the United States where the notion of the melting pot still takes precedence over the representation of a multicultural character. Even though all museums’ most fundamental role is the dissemination of information, MacDonald (1992) points out that it
will be hard for museums to reflect an identity that has validity not only on a national and
global level but also an identity that is relevant to individual ethnic groups on a national
and international level. The WWW offers the possibility for sharing this identity or even
creating a new identity that would truly be global. Interactive input by members of ethnic
groups via a computer could impact the decision making process of the alienated curator
or museum professional.

Yet, it is impossible to forget the role the visitor plays in a museum. Not only is
the visitor the self appointed critic but the viewer is also the justifier - the Siskel and
Ebert of the general population. Perin (1992) points out that the visitor’s conceptual
receptiveness only becomes fruitful in their response. Visitors to blockbuster exhibitions
validate not only the artworks but also the creative ideals and presentations of curators.
Dr. Robert Kelly (1992, MacDonnalld) of the University of British Columbia notes that
there are three fundamental needs visitors to exhibitions in museums have: intellectual,
sacred, and social. Fyfe and Ross (1996) take this concept further by pointing towards
the class struggles that a museum is constantly involved in: the distinction between the
Kantian aesthetic and the popular aesthetic.

The Kantian, or pure aesthetic, entails an orientation of distanced assessment in
relation to art which is at once a refusal of the immediacy of popular art. The
former celebrates form over content, the latter content over form, these are related
encodings of a struggle for distinction which is an aspect of class formation.
Where the former has its centre of gravity amongst intellectuals, cultural workers
etc., who monopolize elite cultural production, the latter is most closely
associated with the working class, with those who are least able to distance
themselves from necessity (Fyfe, Ross, 1996, p.133).
Are all classes and groups really catered to in modern museums? Exhibitions are not designed, created and implemented with the "less fortunate" class in mind. It is assumed in most situations that the visitor to a museum or exhibition has a certain intellectual and aesthetic understanding. Without this knowledge the visitor is alienated in the dialogue between the artwork and ones own aesthetics and ideals. If there is little understanding of the works of art included in an exhibition, the visitor usually feels threatened and rejects most of the information that is presented in the display. It is therefore of utmost importance that the visitor is given the opportunity to engage in a constructive dialogue. It may be aesthetic, visual, intellectual or educational.

This is where the education department in an institution comes into play. The field of museum education is still a fairly new venue in this country. During the 1980's the National Endowment for the Arts greatly supported museums that would provide educational opportunities. Yet, most museums struggle not with educational elements geared towards the young, but how to improve the dialogue between the art object and the adult visitor. The museum education department has two roles: to justify the curator's concepts and to bridge or create the dialogue between the art object and the visitor. Often this dialogue is hampered by the position the education department has in the decision making process within a museum. Many education departments are at the lower end of the museum hierarchy. Their acting power is also often kept at a bare minimum by the administration. This might be the result of limited monetary resources. The curator might also feel threatened by an independently acting education department. It depends on whose point of view is presented to the visitor: the curator's or the education
departments’? However, the fundamental success of an exhibition lies in the constructive dialogue between the art object and the visitor and not in the administrative power struggle. This can only be achieved by both departments working closely with each other. Perin (1992) also supports this point by stressing that the entire community within a museum needs to work together in order to create an effective dialogue between the internal departments. Furthermore, she stresses that the internal sociology, politics and cultural structures significantly effect the dialogue between the audience and the creator of an exhibition. The WWW offers great opportunities to further this kind of dialogue. Interactive input by the visitor could make each department understand its shortfalls and successes. Yet, most museums still take an elitist position and are probably not willing to break down the barrier between the internal and external community in order to create this dialogue. The WWW offers a safe opportunity for increased dialogue between all parties and communities. The interaction via the WWW could be in form of e-mail, discussion groups, bulletin board postings, selection of works for an exhibition, chat rooms, and even with programs that let the audience interact more with the art object.

**Possibilities for Curators, Museums, Educators on the WWW**

The WWW offers many opportunities to constructively improve the situation not only for the creators and participants of an exhibition but also for the audience. The WWW could also involve the curator in a constructive dialogue with the audience. This could also increase the power a curator has over exhibitions, ideals and aesthetic notions because the curator’s personal exposure would be presented to visitors from all across the
world. The curator could engage in a critical dialogue via the WWW. Yet, the dialogue could also be held in an almost anonymous fashion. The curator might never meet the visitors from Australia but the curator might be influenced by their ideals and notions and possibly include them in the decision making process. A further option for the virtual curator is to present his or her own vision and also include a different viewpoint and exhibition design.

Exhibition design on the WWW, at the moment, still mostly mimics the printed media. Yet, once the virtual curator has understood the possibilities and aesthetics of the medium itself he or she does not have to present the exhibition from only one conceptual understanding. Virtual exhibition environments offer the possibility to not only present the exhibition from a Western standpoint but also from an ethnic or multicultural one simultaneously. The visitor could then choose the viewpoint which best matches his or her own understanding, ideals and interests. A virtual exhibition environment could also coexist with the actual exhibition. In other words a WWW site could present the same exhibition in many different ways - from an ethnic viewpoint, from the artist’s viewpoint, the curator’s viewpoint, from a popular viewpoint, and also from a historical viewpoint.

Let’s take a look at different options a virtual environment presents to a curator. It has been established earlier in the chapter that the curator is the presenter of ideals, concepts and aesthetics. In the traditional sense the curator has made this information available via physical exhibitions in a museum or gallery. The WWW, however, offers many more possibilities. Woolley (1992) explains that many events that happen in actual reality will only generate their full meaning and take on their own reality via the
television. Woolley for example had personally witnessed the immediate aftermath of the Clapham train disaster in England and was struck how he had not realized the full extent of the disaster until he witnessed the news coverage on television. The event became real only at that point. The WWW is part of this medium in that it creates an immediate reality or virtual reality for viewers from all across the world. Taking the virtual museum and exhibition into consideration it is interesting to note that the presentation of an exhibition on the WWW is no different to that of a television. It creates its own reality that the curator has to understand and explore in order to make it effective. This is where the newest technology about to be included in the WWW comes into play. Netscape has just announced the inclusion of Netcaster into its browser. Netcaster will allow push delivery of information and offline browsing\(^1\) via Marimba Castanet\(^2\) technology. This technology will allow the creation of channels via the WWW. A channel will allow a registered user to keep updated on the information that the user hopes to find. It will also enable the creator of the channel to push and update the information on each registered user’s hard drive without them having to go and get the new information. It will

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Marimba’s Castanet technology is integrated and bundled with Netscape Netcaster, the newest component of Netscape Communicator. This means Communicator customers can seamlessly view Castanet channels using the Netcaster component. And, companies developing channels can take advantage of Castanet to build channels viewable by the millions of Netscape client customers.
automatically download new updates each time the user activates the channel. In other words, the creator of a channel becomes not just a WWW publisher but also a broadcaster. This new technology seems to be the integration of television-like elements into the WWW. However useful this will be to curators and museum exhibition specialists will only be established with time. Early channels already available for viewing via the Marimba Castanet tuner are very similar to television broadcasting and a bombardment of advertising. Yet, this new technology will also offer the integration of HTML, Java\textsuperscript{93} and other multimedia applications such as streaming video and sound on the desktop of a computer.

To come back to the WWW, the curator’s options are not just merely one of presentational qualities but also aesthetic ones. Chapter 3 established how art sites are presented via the WWW today. Most of the WWW sites include a mixture of different types of media such as text, graphics, possibly sound and video. An exhibition usually includes a few thumbnails and didactic text. Yet, the virtual exhibition environment offers many more possibilities than one can find today. It is essential to once again differentiate virtual exhibitions from traditional ones. Virtual exhibition can be created only for viewing via the WWW or a computer. An entire exhibition can also be made

\textsuperscript{93} Java is a newer programming language that is platform independent. Programs written in Java will run on a Macintosh, Unix or PC based platform provided the user has a Java interpreter installed. It is also used for WWW based applications. The user downloads the Java program to their computer and then can interact with it via the WWW browser. The language however is still in the early stages of development and new standards are set, and changes are made to the language and its programming options all the time.

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available via this medium. A site would not be made up of a few thumbnails from an
exhibition but would also include works from other museums that are not necessarily
located in the same country. VRML would allow the visitor to navigate through this
exhibition in a user controlled interactive fashion. In a traditional exhibition setting the
viewer usually walks from room to room in a linear fashion. In the virtual exhibition
environment the viewer could be able to navigate in a fashion that is not dictated by the
curator but by the viewer themselves. One would be able to jump from room to room not
in a linear fashion much like it can found in the traditional setting but in a truly hypertext
manner. The visitor could at his or her own pace decide what information to confront
first. For example, a virtual exhibition of Egyptian artifacts could let the visitor see and
understand the real environment where the works were taken from by creating hyperlinks
to information about present day Egypt. At the same time the visitor could learn and
explore more information through a hyperlink that would lead let's say to the Brooklyn
Museum of Art. Once arrived at the Brooklyn Museum the visitor could either return to
the original starting point or the visitor could gather more information on the topic of
interest. Most museums until now have approached exhibitions in a linear fashion. Yet,
with the advances of the WWW the hypertext hierarchy can be explored to its fullest
potential.

The Museum of Modern Art will approach art in a different way within the next
nine years. With its upcoming expansion the museum will attempt to break down what
Lowry (1996) called "the mazelike qualities" of the current layout. Until now the
museum had produced a linear march through modern art history. However, with its new
expansion it is rethinking the layout and will “afford people more choices, rather than
imposing one inescapable path.” (Rosenbaum, Feb.97, p. 25). This is extremely
important when taking the entire exhibition experience into consideration. The “new”
Museum of Modern Art would allow the visitor to choose his or her own way of how to
approach an exhibition. One could for example jump more easily from early modern art
to contemporary art, from painting to photography and maybe even industrial design. It
would clearly give the audience more freedom and control over their movements and
interpretations. The constructive dialogue between the art object and the visitor will
change dramatically. This traditional museum is not only approaching this concept in
terms of exhibition design but also in terms of the aesthetic museum experience.

Until now online exhibitions have only been explored as a one sided experience.
The WWW visitor is provided with information by the server that can only be
interpreted instead of interacted with. Once again the WWW offers many more
possibilities. The visitor could navigate through a virtual exhibition and meet other
visitors who are viewing the same exhibition in real time. Online interaction among these
visitors via a chat forum\textsuperscript{94} could offer a chance for dialogue between them. Visitors
would not have to come to the actual exhibition any longer to experience it but they could
be located in different continents. The curator could also join the dialogue within this
virtual community and shed more light on some of the concepts that made up this

\textsuperscript{94} Chat rooms are virtual meeting places where computer users can interact with each other
in real time by using the keyboard as the main input device.
exhibition. Furthermore, the visitor to the virtual exhibition could take on a virtual identity as well. This identity could be taken from a different ethnic group, age or gender. Would this change the way the visitor would experience the exhibition? The curator could also discover if the exhibition really is producing the results that he or she had hoped for. The curator could also justify his or her decision to the museum administration. By monitoring the conversations of the visitors the curator could suggest further information or explain why he or she included certain works. Another important aspect of the dialogue is that the curator or educator would not necessarily have to be involved in furthering the knowledge of the visitor. Visitors could point out further resources to each other online. Yet, it is important to understand that the information presented on the WWW is not always the truth but often an individual’s viewpoint or opinion. The medium therefore has to be approached with a grain of salt. But is television or a newspaper different in that respect?

Works in a virtual exhibition could serve the audience in terms of educational background information or they could be included in the overall presentation to create a new form of a virtual aesthetic presentation. The possibilities for true interaction in a virtual environment have yet to be explored in the museum world. Furthermore, the virtual environment has a language of its own that has yet to be fully developed. Holtzman (1996) explores language as one of the most fundamental vehicles with which to present knowledge. He points out the complexity of underlying hierarchical rules of the traditional natural language. In the virtual environment it is not merely the spoken words that a computer has to understand but, most importantly, their meaning. Terry
Winograd’s\textsuperscript{95} (Holtzman, 1996) world of blocks in 1966 attempted to create an understanding of the “natural” language environment for communication between a human and computer. The world of blocks was made up of five rectangular blocks and three pyramids of different colors: red, blue and green. All elements were put into one box in order to ease the understanding of the spatial environment. Winograd then included a robot with a single hand in this environment. The robot had limited motor functions. It could move up/down and around. The robot also was given one eye in order to be able to “understand” itself in the spatial arrangement in relationship with the blocks and pyramids. The researcher then tried to communicate with the robot.\textsuperscript{96} Even though the communication between Winograd and the robot appeared to be somewhat successful, its shortfall was the robot’s lack of understanding of the natural language used by humans. Today’s virtual environment language is at a similar stage.

According to Holtzman (1996) visual art can be thought of in terms of grammar much like any other language.

The artists of the future will sculpt using the materials from which virtual realities are made rather than clay - that is, data, pure information. Within the computer, virtual reality is a pattern of information. Just as for language, music, and visual languages, the foundation for building these new worlds will be the explicit description of the structure of these worlds: basic elements, deep structures, surface structures, as well as fractal representations (Holtzman, 1996, p. 210).

\textsuperscript{95} Terry Winograd was an artificial intelligence researcher at the Massachusetts Institute for Technology in the 1960’s.

\textsuperscript{96} A transcript of the conversation can be found in Holtzman’s publication “Digital Mantras, The Languages of Abstract and Virtual Worlds”, 1996, MIT Press, Cambridge Massachusetts.
The exhibition environment is no different than that. A curator presents his or her own thoughts through the language of the visual arts. Virtual exhibition environments do the same. Yet, they need to have rules that permit interpretation. Artists do invent new realities by creating art objects. The curator is not so different to an artist. The traditional curator can often create a different reality by choosing certain works of art for exhibition. The usage of a Monet or a Kandinsky as part of an exhibition would create very different aesthetic interpretations and realities. Yet, the modern virtual curator’s task is also to determine which reality and identity should be presented to the visitor of the museum either online or in the traditional setting. The curator also has to understand that the computer should not only be used as a tool but as a creative partner in the process of exhibition development.

The WWW should also be understood as a creative partner and not as a static medium such as the traditional print medium. Virtual multimedia environments clearly have to be learned and understood before their full potential can be explored by the creator or the audience. Virtual exhibitions on the WWW will also offer an immediacy that can not be explored in traditional exhibitions. The virtual exhibition could take place in conjunction with a traditional one or it could only take place on the WWW. A virtual exhibition will also change over time in terms of information and experience provided that the audience is allowed to interact with it. A virtual exhibition could be updated much faster than a traditional one provided that the art object is available in a digital format. This might also help the proponents that promote the constant preservation of art objects. For example an unstable Jackson Pollock painting would not have to leave the
actual museum vault any longer in order to be included in an exhibition. The Sistine Chapel could be brought home via the WWW. A VRML browser would allow the user to fly through the space to view the works of art from all different kinds of angles that would not be possible in a traditional setting. Moreover, transportation costs of artworks would no longer be relevant. Within a few seconds a work could be virtually shipped from England to a virtual exhibition in Japan. The Mona Lisa could be brought into each class room with WWW access. Not only could the students interact with the work of art with traditional discourse but through partnering with the computer the class could explore other aesthetic elements such as overlaying other paintings or works of art, changing color patterns or view change the proportions of the work of art itself. What kind of viewing experience would this work invent if the viewer were able to change the colors, angles, or other compositional elements? The viewer could save an image from a virtual exhibition for later viewing or for inclusion in a personalized version of a “World Museum”. The viewer might also want to expand the dialogue between the work and its audience by creating a completely new work of art. In partnership with the computer the viewer could take elements from virtual exhibitions and create new works of art with it, upload it to the same virtual exhibition and enlarge the exhibition by displaying their personal interpretations next to the original. In other words the activity of creating new art objects becomes as important as analyzing existing ones.

In the future flat screen technology might replace the traditional work of art so that every American could have his own “Mona Lisa” hanging over the couch. The audience could then also take a work home from a virtual exhibition in a museum or
commercial gallery and continue their dialogue with the art object on their own terms. These possibilities in conjunction with the WWW would offer quite a few more possibilities. The museum for example could use the Netcast server push\textsuperscript{97} concept and deliver new works of art into the homes of thousands of people located all across the world. The museum could then change the works of art daily, weekly or monthly. This might entice the viewer to engage in an aesthetic dialogue wanting see the work in reality. It could increase visitors to the traditional museum.

As Corcoran (1996) points out, the aesthetic of digital transfer is very important. In the future it might even overtake the actual dialogue a viewer has with a work of art. She approaches the WWW in terms of time not space. She points out that often the experience of downloading a work of art staring at the transfer rate overtakes the actual experience once the work has completely loaded on the screen. Today more time is spent in receiving the information via the WWW than interacting with it. This once again points to the clear need of interaction and the breaking away from the one sided WWW presentation. The virtual curator of the future will have to include interactive elements in order to make the exhibition a success. The artwork of the future WWW will have to break away from just the visual tradition and force the audience to interact with it. The work should not be presentable with one screen view but the viewer should have to create the work of art in an interactive dialogue in partnership with the computer. The question

\textsuperscript{97} Server Push: The WWW server will push certain information via the WWW to the receiving end. This could for example change an image on the screen of a visitor or alert the user about new exhibitions.
is then: will the visual arts object on the WWW be transformed and enter the arena of the performing arts? This is exactly what a WWW arts project titled "Blastdrama" is trying to establish. By linking scenarios together the interactive work of art is created. The interactive elements almost become a performance.

The curator of the future will have to be a well rounded individual who understands the aesthetics of technology and the concepts of successful museum education. Only through an amalgamation of this will the traditional and virtual curator be effective. Furthermore, the curator of the future will have to accept a lesser role in the whole process of decision making that goes into an exhibition. Through this the close knit group environment exhibitions will be successful and meaningful to the virtual visitor, curator, artist and curator. The possibilities are endless and it is time to act now, break down the traditional barriers of elitism and accept new challenges.

It is also important for the virtual curator to understand the virtual artist if a successful curatorial relationship is to be established. As London (1997) explains:

"For an artist, the creation of a virtual artist is a contemporary form of self-portraiture. The artist who gazes into a mirror and puts paint on canvas aims to capture much more than a self-likeness. Similarly, an artist working in virtual reality both discovers and creates the links between subject and image. In fashioning a virtual artist, the artist presents an exploration of his or her artistic self, a process akin to making a series of self-portraits in the studio, posing with palette and brush."

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The virtual artist of course presents more than just a pixelation of ideals and notions. Virtual artists however will still have to approach the medium somewhat traditionally if this form of art is to be accepted into the art market. Yet, the virtual art object will have to break traditional barriers and approach the WWW on its own terms, aesthetics and ideals.

Interaction between the viewer and the art work is another crucial factor in the dialogue between the virtual art object and the virtual visitor. As Robert Atkins pointed out in the Fall of 1996, will the online media live up to their technological potential? He also questions whether the online world has only offered poor choices so far and that readers and viewers are so passive that they are not interested in any kind of intellectual stretch. He tries to solve this problem by proposing new forms of emerging interactivity with the purpose of creating a community rather than concentrating on building audiences. This is a crucial point for virtual artists, curators and visitors to accept. Jane Veeder (1996) sees a progression in what she called a decentralized, interactive environment -- an emergent, adaptive environment for online media. This environment of course will create the virtual community that it needs to stay alive and prosper, to change and grow. Yet, Margaret Morse (1996) cautions us with her views of interactivity. She sees interactivity as a way to relate to machines. She believes that

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interactivity has been mistakenly interpreted as emancipatory and expressive that may change the very nature of communication. I believe that the interactive qualities between the virtual object, curator, artist, visitor and exhibition are not just an operational or instrumental element, but that interactive qualities enable the virtual community to create an aesthetic dialogue that will enable virtual visitors to museums, galleries and other art sites to understand the art object itself. Isn’t this the most important aspect of interpreting art?

With the constant flux of the WWW, artistic expression and current aesthetic thought it will be impossible to standardize the styles for virtual curating at this point in time. The medium has not yet been fully explored. One can only dream about its possibilities or failures. Strict guidelines and “proper” practices would only limit the virtual curator, artists and virtual visitor to produce a generic exhibition. The virtual curatorial team needs to push not only today’s technological possibilities to their fullest extent, but also current thought, aesthetics and acceptance of this medium. Through these continuous situations of trial and error we might be able to establish certain curatorial standards in the future. Yet, we have not fully understood the medium and its potential and should therefore not limit it by establishing stringent controls.

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CHAPTER 5

INTELLECTUAL PROPERTY

Background

Intellectual property laws and electronic media, be it the Internet or "multimedia" works such as WWW publications or computer software, all have been under tremendous scrutiny over the last few years. It is important to take a look at some of these developments and how they relate and may impact published WWW art sites.

The founding fathers of this country already recognized the benefits new creative endeavors would bring to the people and creators of such works. The United States Constitution written in 1787 included a copyright clause in the section concerned with legislative scope stating: "The Congress shall have Power... To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." (Article I, Section VIII)

As it has been the case with many other types of media, the challenges to the copyright laws as we know them today are really not so new. With the invention of telephones and musical recordings, as well as photocopiers (Xerox machines) or television, came constitutional challenges. The courts in this country have tried to keep
up by constantly struggling with how new technological advances might be interpreted in
the scope of intellectual property or copyright laws.

This section of the dissertation shall only give an overview on the issues
pertaining to the "new" electronic media rather than television broadcasts, radio
transmissions, satellite feeds or other forms of "older" electronic formats.

Copyright and Electronic Media

It is essential to present the main aspects of copyright law that apply to electronic
media and the WWW. The Copyright Act of 1976, As Amended (1994) (17 USCS &
sect; &sect; 101-1010) clearly establishes the parameters of what should be considered a
work that is able to be placed under copyright protection. Section 102 of the law states
that "works of authorship fixed in any tangible medium of expression, now known or
later developed, from which they can be perceived, reproduced, or otherwise
communicated, either directly or with the aid of a machine or device" would have
copyright protection. It goes further to describe different media that would also be
protected by the law:

(1) literary works;
(2) musical works, including any accompanying words;
(3) dramatic works, including any accompanying music;
(4) pantomimes and choreographic works;
(5) pictorial, graphic, and sculptural works;
(6) motion picture and other audiovisual works;
(7) sound recordings; and
(8) architectural works.
(17 USCS, sec. 102)
Let us establish what rights the creator of a work of art has. According to section 106 of the Copyright Act of 1976 the author of a work has the following rights:

(1) to reproduce the copyrighted work in copies or phonorecords;
(2) to prepare derivative works based upon the copyrighted work;
(3) to distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending;
(4) in the case of literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works, to perform the copyrighted work publicly; and
(5) in the case of literary, musical, dramatic, and choreographic works, pantomimes, and pictorial, graphic, or sculptural works, including the individual images of a motion picture or other audiovisual work, to display the copyrighted work publicly (17 USCS, sec. 106).

This is where the laws already become confusing. As Loundy (1995, Copyright Issues) notes, the element of fixation is one of the most important issues of the copyright laws. A work that is not fixed in any tangible medium or expression is not covered by the statute. He uses the example of a live concert. If it is not recorded in a tangible medium the concert cannot be copyrighted. In other words ideas or expressions are not fixed in a tangible manner. Artists take ideas from other artists or artistic styles every day. Often ideas are taken from other artists to further or interpret current or past aesthetic principles. It is often called "influenced by" and even though these ideas are “stolen” they are not copyrightable.

Information Infrastructure Task Force

To return to the concept of the most important intellectual copyright laws and electronic media, one has to look at the concept of copies, fair usage and transmission of
copyrightable works. The Clinton Administration formed the Information Infrastructure Task Force in 1993 to look at prospects for the National Information Infrastructure (Brown, 1995, p.1). The Report of the Working Group on Intellectual Property Rights presented to President Clinton in September 1994, laid out the proposed changes that should be made to the copyright laws of this country and how to further the development of the National Information Infrastructure i.e, the Internet and WWW.

The working group found that the fundamental right to reproduce (copy) a copyrighted work and the National Information Infrastructure would clearly be violated (Brown, 1995, p.51). The report points out that once a work is transferred from one computer to another a copy is made even if it only exists in the computer's memory, i.e. RAM. However, Loundy (1995, Revising the Copyright Law) goes further in differentiating the different types of RAM and how they might influence the revisions of the Copyright Act that are clearly needed in this area. Dynamic Random-Access Memory (DRAM) and Static Random-Access Memory (SRAM) both hold information for as long as the computer is switched on. This would mean that a temporary fixation takes place for as long as the computer is switched on. However, Read Only Memory (ROM) keeps information permanently (p.7). New types of RAM such as EDO RAM or other methods such as caching might confuse this issue even further. The Netscape and Microsoft browsers take the practice of caching to its limits. Once the browser has downloaded a page from another computer the page and all its elements such as graphics and text are stored in the receiving computer’s cache. When exiting the program most of the information is lost from the memory allocation where it had been stored and the cache is
sometimes emptied. However, once the user accesses the site again a few days later some of the images or the text might still be in the program's cache "memory". One clearly notices that the program can differentiate whether the browser has accessed the site before. By storing this information in the cache a copy has clearly been made. It is often possible to set the size of the cache as well. A larger cache allocation will allow for more information to be stored. Netscape also offers the opportunity to set site verification. This means that the browser actually checks for new elements in each page that is being accessed. However, it is possible to set the verification so that it will compare the page with its cache only once. Does this mean that once the page is in cache that a copy has been made? The National Information Infrastructure Report clearly agrees that a copy has been made if any of the circumstances mentioned above take place and they would be a clear violation of the copyright law.

With decreasing costs of data storage and expanding computer networks, Loundy (1995, Copyright Issues) sees a tremendous increase in computer archives. Naturally, artworks will be part of these archives and, once a painting has been transferred to a digitized format, one can conclude that a copy has also been made. Now, the archive will be made public via the Internet and each time a user looks at one of the images a copy has been made. This could pose a severe copyright infringement and Loundy (1995, Internet Case Shows) suggests that system operators will have to be part of the copyright police snooping through archives on their sites searching for copyrightable material. This however will be an impossible task. The system operator could be held liable and as one can see in the case of Religious Technology Center v. Netcom On-Line Communications
Services, Inc., (1995, No.C-95-20091 RMW) laws have not been clearly interpreted in all cases.

This case deals with Dennis Erlich, a former minister of the Church of Scientology who over time has become a critic of the Church and the teachings of L. Ron Hubbard whose works have been copyrighted by the Religious Technology Center and Bridge Publications. Erlich posted secret religious texts to newsgroups accessible via the Internet. Erlich also received access to the Internet via Tom Klemesrud's bulletin board (BBS). The Church of Scientology requested that Erlich be denied access to the Internet so that the infringements could be stopped. The Church went even as far as to include Klemesrud and Netcom in the lawsuit (p.1). And as Rosenoer (1995, Internet Infringement) points out it would be extremely difficult if not impossible for Netcom to be able to editorially monitor 150 megabytes of information that pass through its networks every day.

To take the concept of making unauthorized copies even further, Lance Rose (1997, SPA Copyright Bullies) points to the Software Publishers Association (SPA) that according to him is using disinformation tactics to instill fear into innocent computer users. In September, 1996 the SPA sent letters to Internet Presence Providers (IPPs) stating that they were guilty of copyright infringement. The SPA stated that some of the WWW sites that were stored on WWW servers at theses IPPs were providing hypertext links to WWW sites that offered pirated software or cracker tools. The IPPs were therefore guilty of contributory copyright infringement. Almost immediately twenty-five IPPs agreed to accept SPA’s strict monitoring policies. Three others were sued by the
SPA. Holding IPPs legally responsible for piracy by outsiders visiting outside Web sites doesn't intuitively make the least ethical sense\textsuperscript{103}.

Furthermore Usenet news groups are potentially transmitted to every computer on the Internet. Would this make every computer user into a potential criminal? Certain computers store Usenet information in its entirety in archives and thus make illegal copies of messages and information. Once a person posts a message or pirated program to a Usenet newsgroup thousands upon thousands of computers store this information in their Usenet server files. This means that thousands upon thousands of unauthorized copies have been made. It has the possibility to absurdly complicate the matter and, if only one person has infringed certain copyrights, all of the users of the Internet could be held liable. This clearly shows that the Internet provider and system operator with or without prior knowledge could possibly be held liable for direct, conduit or vicarious infringement of a copyrighted work in the future.

The Information Infrastructure Task Force (IITF) also looked at the case of libraries and the concept of copies. It states that section 108 of the Copyright Act gives certain exemptions to certain situations. Libraries or archives clearly fall within this framework. The reproductions or distributions must be made without any purpose or direct or indirect commercial advantage. Second, the collections of the library must be open to the public or available not only to the researchers affiliated with the library, but also to other persons doing research in a specialized field. Third, the reproductions or

distribution of the work must include a notice of copyright and a specific exemption in subsections (Brown, 1995, p.67). However it is also very interesting to note that "the rights of reproduction and distribution under this section do not apply to a musical work, a pictorial, graphic or sculptural work, a motion picture or other audiovisual work other than an audiovisual work dealing with news..." (17 USCS, Section 108). However, libraries also have traditionally been allowed to operate under the "first sale" doctrine.

This means there is the right to redistribute your own copy of a work after the publisher's first sale of it to you. This also gives the library the right to let the user see or read a work on a computer monitor. Yet, as Loundy (1995, Revising copyright law) points out the library is only permitted to show one copy of the electronic work at the same time. The IITF on the other hand notes that the first sale doctrine should also apply to transmissions, as long as the transmitter destroys the material after using it (Brown, 1995, p.73). The report also notes that it is not a question of whether there exist the same number of copies at the end of the transaction, but whether the transmission when viewed as a whole violates one or more rights. This would mean that there would be no exception from liability. Therefore the process of making a copy takes place and invalidates the reproduction right. To further limit the distribution of knowledge libraries could not make these electronic works available via the Internet according to the IITF recommendations. Section 109c of the Copyright Act would invalidate the exemptions libraries have until now been part of because the public display in traditional libraries would no longer apply (Loundy, 1995, Revising the Copyright, p.22). But then there is the question whether transferring information via the Internet would really constitute a
public display. To transmit the work and to make a "copy" of it might infringe on the copyright laws but to transmit it to another terminal might not be considered a "public display" since many users view the information at home or at work and there are no more than a few people present (p.16).

**Fair Usage**

Maybe the concept of "fair usage" confuses the entire issue at stake even more. The IITF Task Force called this the most significant and, perhaps the murky issue of the limitations that a copyright owner might hold on her or his own work. Even the framers of the Constitution made sure that the exchange of information should not be hindered and "To promote the progress of science and useful arts..." (USC, 1787). They were trying to encourage independent thinking and the only way one could do that was to accept the concept of "fair usage". Not every book or work created is based on totally new ideas. John S. Erickson (1995) also notes that creative works must be accessible to be of value. With the emergence of the easily accessible digital work the factor of vulnerability to infringing on distribution might be on the rise. In order to determine whether information from a work has been used fairly the following criteria has to be taken into consideration:

1. the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
2. the nature of the copyrighted work;
3. the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
4. the effect of the use upon the potential market for or value of the copyrighted work (17 USCS, 1994, sec. 107).
The Copyright Act states that the following uses do not constitute an infringement:
"criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research (17 USCS Section 107). Samuelson (1995) points out that the IITF’s report\textsuperscript{104} is actually attempting to ban fair use rights by interpreting existing laws so that fair use has no application when a use could be licensed. She also speculates that the "maximalists" believe that every use however small can be licensed.

The case of Sony Corp. of Am. v. Universal City Studios, Inc., (1984) showed that Universal City Studios tried to stop Sony from distributing betamax video recorders because many people used them to record television programs and movies. The courts however agreed that it was a matter of fair use for consumers to copy programs off the air for time-shifting purposes. The court went even further to state that private, noncommercial copying should be presumed fair use (Samuelson, 1995, p.5). The last statement confuses the issue of making electronic copies in RAM or for archival purposes even more. Most people using the WWW use it for research, educational or personal use. Therefore, one could reinterpret the issue of copies once again. But only tests in the courts over time will clarify these issues. One should not interpret the laws personally due to the high risk that one court might have a completely different opinion from another.

Another interesting case was Sega v. Accolade where Accolade did not pay a licensing fee to Sega but decompiled the program in order to tailor its own cartridges so

\textsuperscript{104} This report has also been called the White Paper.
that they would also run in a Sega machine. Surprisingly, the court decided that this usage was fair because it would otherwise give Sega a broader monopoly over the program than intended (Samuelson, 1995, p.5). This interpretation clearly offers a good example of what fair use was meant to be. However, if control over these issues become tighter the "maximalists" might gain too much control over the fair use agenda.

Samuelson (1995) also remarks that the IITF White Paper of course does not mention any of these issues (p.7). Maybe the report is too influenced by large and powerful corporations that have a vested interest in broadening their powers. It seems as if the "maximalists" are too frightened of losing out on trying to cash in on cyberspace and the Internet. Since electronic publishing might eventually take over traditional means of publishing one can clearly understand the "maximalists" point of view. However, it is also important to look at this from another perspective. The Greatful Dead, an American rock band, almost an icon in American culture, has let concert goers since the early 1970's record actual live concerts wherever and whenever they wanted. One knows that a concert in itself is not copyrightable until it has been fixed in any tangible medium i.e. tape recordings. According to Barlow (1994) this did not diminish the interest in their product, but it actually heightened it to such a degree that the Greatful Dead as of 1994 were the largest concert draw in this country. He claims that the concert tape recordings actually attributed to the popularity of the band (p.126). By successfully adopting the corporate agenda we would destroy the intent of the above mentioned case. The more information one makes available for everyone's use the more that information will be in demand. This might be an issue the "maximalists" forgot to consider.
However the courts may decide in the future what constitutes fair use and one has to be a strong proponent of the distribution of ideas and thus further the advancement of culture for the populous and not for the few media corporations and their profit oriented attitudes. This leads us to the last issue of fair use.

Most courts seem to have taken into consideration whether the supposed fair use infringements have been instances where profit orientation was the motive. In *Wainwright Securities, Inc. v. Wall Street Transcript Corp.* (1977) fair use "distinguishes between a true scholar and a chiseler who infringes a work for personal profit" (Fishman, 1994, 11/5). Fishman also argues that photocopying for purposes other than educational or research might not be considered fair use. Publishers and others who hold large quantities of copyrighted materials are actively trying to enforce their rights against commercial infringement. As one can find in *Basic Books, Inc. v. Kinko's Graphics Corp.*, a group of seven major publishers received a $510,000 judgement against Kinko's for copying excerpts from books to be used in packages compiled for educational use. These packages were then sold to students to use as reading material for their classes. It is arguable whether this constituted fair use because according to Fishman courts have also held that copying large amounts of scientific and technical journals for research even if there was a for profit motive involved to be fair use (Fishman, 1994, 11/10-11). Once again it seems that one has entered a gray area and without doubt fair use will also depend on whether the parties that are infringing on the fair use statute are libraries, educational institutions or other corporations such as software program manufacturers. The media companies once again will try to lessen the availability of the fair use clause in
order to further their financial gain. With advancing secure financial transactions over the Internet it should be easy for publishers to charge a licencing fee for each use. This will also enable them to tell who is looking at what materials. This could become the classic "Big Brother" scenario of the early twenty-first century.

**Derivative Usage**

Derivative use is of course an area that cannot be neglected in this discussion. First we must establish what a derivative work is. Fishman gives a nice example: "If you take a molten lump of copper and add tin to it you'll end up with something new: bronze (Fishman, 1994, 7/2)." In other words a work becomes a derivative work if a substantial amount has been changed or transformed from the original. The IITF White Paper also recognizes the rights of a person using the derivative use statute: "A user who modifies by annotating, editing, translating or otherwise significantly changing -- the contents of a downloaded file creates a derivative work" (Brown, 1995, pp.53-4.). However, the report fails to consider the issue of computer graphics or computer art. Traditionally, the right to translate a text or written work into another language has constituted derivative use. Yet, let us assume that a person can take an image by a computer artist in "gif" format and translate that same image into "jpeg" format. One could argue that the image has been translated into another language. If this would stand up in court, it would have far reaching effects on how computer generated images are perceived. I should also point out that a computer generated image can be as much of a work of art as a traditional painting.
However, the Copyright Act does not recognize a representative image as a work of art if the edition of the image, sculpture, print or photograph is larger than 200 representations. Taking the example of a newsgroup posting: an artist who would post an original image to rec.arts.fine\textsuperscript{105} would within seconds have an “edition” of one million because other Usenet servers would store the image all across the world. Would this be considered as an edition or as a copy of the original work of art? However, the Copyright Act is fairly strict of what does not constitute a work of art:

...any poster, map, globe, chart, technical drawing, diagram, model, applied art, motion picture or other audiovisual work, book, magazine, newspaper, periodical, data base, electronic information service, electronic publication, or similar publication (17 USCS, Section 101).

Of course the computer generated image would not change substantially if translated from one file format to another, but one could argue that this would fall into the category that would not constitute an infringement. But then would this image be considered an original work of authorship?

Another important issue that needs to be discussed is the factor of how the Copyright Act and the IITF White Paper recommendations approach the issue of internationalization of information and copyrighted works. A good starting point would be the case of an electronic version of works by certain writers whose works have not yet been transferred into public domain in every country. Let us assume that the electronic publication resides in a computer archive located in the United Kingdom. The texts have

\textsuperscript{105} This is one of the many arts Usenet newsgroups that can be found on the Internet.
already been transferred into the public domain in the United Kingdom or other British
Common Wealth members such as Canada but publishers still hold the copyrights for the
texts in the United States. If one were located in the USA and would point a WWW
browser to Books On-Line\textsuperscript{106}, one could find works by D.H. Lawrence, Arthur Eddington
or James Joyce. Yet, one is not allowed to access this material via the WWW (Warning!
Restricted Access, 1995) because they remain copyrighted in the USA but have entered
the public domain in other countries. The issues discussed above are clearly a limitation
and shortfall of copyright issues at stake here. Disregarding the issue of copies and
transmissions, how will this limit the growth of the Global Information Infrastructure that
the Clinton Administration and others are so eager to promote and support?

\textbf{Internationalization of Information}

The World Intellectual Property Organization (WIPO) takes responsibility of the
administration of international intellectual property treaties. However, the Berne
Convention could be called the principal international copyright convention. Only in
However, the United States joined the Universal Copyright Convention (UCC) on
September 16, 1955. Whether a country has signed both the Berne Convention or the
UCC Conventions the Berne Convention takes priority over the UCC (Fishman, 1994,
13/4). The main concept of the Berne convention is to assure other nationals the rights to

their works in the United States as well as other Berne Convention countries. However, one can only speculate how laws will be interpreted in countries where rights are based on the anglo-common laws versus other types of law. No formalities such as the notice of registration will be needed, but some countries offer greater protection if a copyright registration includes a certain type of notice. Fishman (1994) uses the example of Japan and Canada where registration creates ways of making the work a public record which might lessen the possibility of infringement. Yet, other countries have certain requirements that have to be met before the work is distributed within that nation's borders (Fishman, 1994,13/3). For example everyone remembers the situations where it was possible to buy a "fake" Lacoste T-shirt from China for about half the price of the "real" one. The only difference in the shirt might have been that the little trademark crocodile was made in China and not under license from Lacoste or other agreements but purely for the profit of Chinese entrepreneurs. It is arguable whether the little crocodile made any difference in the quality of the merchandise, but clearly, it was an infringement of copyright and trademark laws.

Yet, there is one more scenario to be explored. To come back to our example of the James Joyce novels. One can expand on this issue. Let us say an individual in a country that has not signed any of the Berne or UCC conventions decides to steal art images from thousands of famous living artists. They could serve all the information from several computers in their own country and make all of the information available via the Internet. There would be no way to police the copyright infringements since that nation is not a member of the conventions. The user looking at the imagery, however,
would infringe whether vicariously or not and could be held liable for their actions. Yet, how will the “cyberspace police” ever be able to police the many billions of bytes going from one nation to another and from one computer to another via the Internet?

It is important to consider all these issues in order to be able to find a sensible solution that will promote the exchange of knowledge via the Internet and not give control to a few selected parties. The USA is far ahead of many nations developing their National Information Infrastructure and this might make it the leader in decision making on issues pertaining to copyright and the Internet. I am sure that changes to the Berne and UCC will be dictated by the USA. Is this another form of modern international colonialism? Is information becoming more important than fixed expressions? The Global Information Infrastructure laws will have to be created by all nations and not just the powerful G-7, or this will not be a Global Information Infrastructure but rather a Western commercial attempt to control information and citizens of the world.

It is therefore important for museums, curators, artists and WWW art site designers to understand these copyright principles before indulging in site creation. These laws could severely limit the WWW community from enjoying “free” information via the Internet. Furthermore, a curator could be held liable for including a work from another WWW museum in a virtual exhibition. Court cases in the future and the constant reinterpretation of laws will establish a reasonable basis for this new medium.

Yet, in my opinion it is important to note that the laws as we know them today should not be tailored towards the WWW/Internet but that entirely new laws should be
developed instead. Otherwise it might severely damage the advancement of knowledge that the fathers of the Constitution tried to protect so diligently.
CHAPTER 6

WORLD WIDE ARTS RESOURCES SURVEY

Research Methodology

The research methodology used as part of this study falls under survey research. According to Moser and Kalton (1972, p.2) the purpose of a survey is simply to provide someone with information. In my opinion this is a rather simplified statement that has been analyzed further by Jaeger (1988). He states that the purpose of survey is to describe specific characteristics of a large group of persons, objects, or institutions. The WWW provides fertile ground for surveying a large number of people or in terms of the survey research populations. Yet, the Internet also provides the researcher with several unique problems.

Limitations of the Survey

It is important to point out several limitations of conducting surveys via the WWW. Research texts at this point in time take mail, telephone or interview surveys into consideration but leave the WWW or Internet out altogether. As one might already know, the earliest valid research that has been conducted on the WWW was undertaken
by the Graphics, Visualization, & Usability Center (GVU) at Georgia Institute of Technology in Atlanta\textsuperscript{107}. Historically, survey research as we know it today can be traced back to the 1880's with such studies as the classical poverty surveys, regional planning surveys, government social surveys and early market, audience and opinion research (Moser, Kalton, 1972). According to Dippo and Norwood (1992) Federal agencies have also had a long history of research. However, the validity of these studies were hampered early on by sampling errors. Until about ten years ago most federal government surveys were carried out through field studies. As Jaeger (1988) points out survey research is part of a much broader category of inquiry called field studies. However, the survey research that will be discussed in this dissertation shall deal with survey research only.

The WWW severely limits the possibilities to create a truly scientific survey. Its main problem is that of sampling. Internet users are not registered and catalogued in one distinct database. This means that one cannot even know the exact size of the entire possible population. It is impossible and would be financially prohibitive to contact every Internet user. Therefore, my study selected only a subset of all Internet users. Of this subset only people actually visiting World Wide Arts Resources were selected to participate in the study. No email messages, newsgroup postings or any other way to contact the entire population of the Internet took place. The process of self-selection once again played an important part in this survey in that according to the experienced researchers at GVU, in order to simplify the problem of self-selection, surveys of the

\textsuperscript{107} GVU. (1994). http://www.cc.gatech.edu/gvu/user_surveys/
Internet focus on a particular region of users, which is typically the United States, although surveys of European, Asian and Oceanic users have also been conducted.\textsuperscript{108} It was possible to determine in this survey that over 90\% of the participants answering the survey were located in the USA.

Self-selection was a downfall of my survey. No announcements over the WWW were made about my survey and only visitors to World Wide Arts Resources' site were able to answer the questionnaire. Furthermore, visitors to the site had the choice to decide whether or not to participate in my survey. As in the case of the GVU surveys it reduced the possibility to generalize about the entire population.\textsuperscript{109} As the researchers at GVU once again point out this also decreases the confidence in a survey because the participating visitor may differ from the one not answering the survey in some manner. However, in my survey it was possible to assume that the participant has a genuine interest in the visual arts because World Wide Arts Resources only provides information about the arts and visitors would have no other reason to visit wwar.com other than if they are interested in the arts. Therefore, it is possible to carefully generalize only about the survey participants that visit World Wide Arts Resources and not about the entire Internet population. Although my survey excluded the validity of a truly scientific random sampling survey, it will provide the reader with results that can be carefully


interpreted. Out of 176,000 people being presented with an invitation to participate in the survey at World Wide Arts Resources 843 actually looked at the survey page. Out of those 843 people 279 actually submitted a valid questionnaire response. This means that the rate of response was 33.1%. The obvious starting point for the theoretical planning of this survey was problem definition. The right questions for the questionnaire had to be developed so one could examine what Sudman and Bradburn (1974) called the concept of "response effect". This is also closely related to the length of the questionnaire. The general rule of the shorter the better is essential to eliminate all superfluous questions. In the case of the WWW this proved to be even more valid than when taking an interview, mail, or telephone survey into consideration because of the danger of short "spacial" attention span on the WWW. If the information on a page does not seem to be enticing the visitor will leave the site. However, the traditional part of the survey research yielded results that could be interpreted via common standards and techniques. The WWW visitor will most likely move on to another site if the material presented before them appears dull or badly designed. Therefore, the survey has been designed with the target population in mind. Jaeger (1988) also points out that with many survey research studies the exact definition of the target population might be difficult.

The findings or generalization are central to all research and according to Jaeger (1988) are the essence of survey research. However, the actual act of drawing conclusions is an act of faith that can be supported by logic and theory (p.324). The results in survey research are partly statistical and partly substantive. In order for results
of substantive generalizations to be valid Jaeger (1988) points out a number of assumptions that have to be taken into consideration:

1. The questions were "construct valid."
2. The respondents understood the questions.
3. The respondents interpreted the questions as intended.
4. The respondents were willing to respond.
5. The respondents had the knowledge or information needed to respond.
6. The respondents were honest in their responses.
7. Responses were recorded accurately.
8. Responses were interpreted accurately.
9. Responses were transcribed and aggregated accurately (p.326).

As with all survey research the construct validity of the questions had to be determined clearly. As one can tell from the questionnaires in the appendices all questions have been constructed with validity in mind. For survey researchers it is sometimes difficult to determine whether the respondent will actually provide honest responses. The WWW made this an even more valid question. We do not know who the respondents actually are. In this study I assume that they have an interest in the arts. I could have included questions in the questionnaire that would have forced the respondent to answer honestly, but often this will break the trust that is presumed to be existing between the researcher and respondent. As Jaeger (1988) suggests, in reality the perfection of a survey is unlikely to be realized.

After relevant research in the area of art education it came to my attention that very little research had been conducted with the arts and the WWW in mind. Thus recent research studies using survey methodology could only be found in the general area of education as well as the WWW itself. By now I should point out again that one of the
main surveys undertaken on the WWW has been conducted by Graphics, Visualization, & Usability Center at the Georgia Institute of Technology in Atlanta, Georgia.\textsuperscript{110} GVU as of October 1996 conducted six major surveys. The first survey was officially announced on January 17, 1994 and ran for exactly one month. The second survey took place from October 10, 1994 until November 16, 1994. Both surveys asked general demographic questions that required no prior knowledge of the WWW. However, both also included sections on HTML authoring as well as a consumer survey. The Third WWW User Survey was undertaken from April 10, 1995 through May 10, 1995 with the now familiar format of questions regarding demographics, HTML authoring and consumer related information. The Fourth WWW User survey, following prior formats took place from October 10, 1995 through November 10, 1995 and was endorsed by the World Wide Web Consortium\textsuperscript{111}, NCSA's Software Development Group\textsuperscript{112} (SDG) and INRIA\textsuperscript{113} (GVU, 1995, 4th Survey).

It is important to look at the experimental confounds of these surveys. The highly distributed, heterogenous, electronic survey via the WWW is an extremely new field.

\textsuperscript{110} GVU. (1995). http://www.cc.gatech.edu/

\textsuperscript{111} The World Wide Web Consortium attempts to develop common standards for the evolution of the WWW.

\textsuperscript{112} NCSA's Software Development Group (SDG) developed Mosaic and other web technologies.

\textsuperscript{113} INRA is the acting European host for the W3C and collaborates with CERN, where the WWW originated.
According to GVU (1994, 1st Survey), the adaptive WWW based surveying techniques undertaken by Pitkow and other researchers are pioneering and as such require conservative interpretation of all collected data due to the absence of time-tested validation and correction metrics. This is due to the fact that the surveys at GVU as well as the survey I undertook suffer from two confounds: namely, sampling and self-selection. Random selection which is an integral part of survey methods to ensure equal representation amongst populations cannot take place via the WWW because of the selection process the WWW user has to go through to find pages in the first place. Furthermore, there is no broadcast mechanism on the WWW that would make it possible to contact or select participants at random.\textsuperscript{114}

It is interesting to note how GVU's surveys have either increased in popularity or exposure by the number of respondents. The first survey received only 1,500 responses. The second survey received 18,000 responses. The third received 13,000 responses and the fourth received 23,000 responses.\textsuperscript{115} The fifth survey received 11,700 unique responses and the sixth survey was answered by 15,000 individuals. By telling us the number of unique responses to the surveys it tells us little of how many participants actually answered these questionnaires. By expanding the number of questions in the survey the responses could have of course been greater. Yet little is published on how

\textsuperscript{114} GVU. (1996). \url{http://www.cc.gatech.edu/gvu/user_surveys/survey-10-1996/#methodology}

\textsuperscript{115} GVU. (1994). \url{http://www.cc.gatech.edu/gvu/user_surveys/background.html}
many visitors actually accessed the pages in later surveys and neglected to answer the questionnaires. I believe after reading other studies in the field of education that the actual amount of response was not as high as a researcher can hope. As a survey of Inner London Head teachers (West & Pennell, 1995) showed of the 148 questionnaires distributed only 68 were returned. This was not a strong showing of returns but a much higher rate of return than can be expected for this survey via the Internet.

Other researchers such as Mims and Lankford (1995) point out the importance of an adequate number needed for adequate sampling. Their research involving elementary art teachers used a frame with over 3,508 art teachers and a stratified sample of over 797 names which according to The Ohio State University Polimetrics Laboratory for Social and Political Research was twice the number needed for this sample. As in the case of the GVU the response was smaller than anticipated. Dillman (1978, p.27) notes that the response rates for general public surveys is expected to be around 70%, a very high and almost unreachable figure when one compares this to past WWW surveys. I could have forced the visitor to answer my survey before being given permission to enter any pages further down in the WWW hierarchy at World Wide Arts Resources. Yet, this would have certainly invalidated responses.

An interesting study on Curriculum Posted to the Internet (Stahl, Sumner, Owen, 1995) points out that as in the case of badly designed surveys most curriculum presented on the Internet today is a compilation of loosely structured sources of information. It was important to carefully plan and execute the questions in this survey. The questions could not be too long, too vague, have too many categories, or be too loosely structured. As
Dillmann (1978) suggests one should choose from three possible ways of presenting questions: open-ended, close-ended with ordered choice and close-ended with unordered response choices. The survey's design was best suited to the close-ended with unordered response choice because each choice could have been an independent alternative representing a different concept. As Dillman (1978) also points out, questions of this type are often used to establish priorities among issues and to decide among alternative policies. As you will notice in the questionnaire this is exactly what is taking place. Although the questions might be more difficult to answer, they will provide the researcher with more control.

The Questionnaire Design for the WWW Survey

The survey's questions used in this study included questions\textsuperscript{116} that were pertinent to the survey environment. The questionnaire was designed in HTML format and published at World Wide Arts Resources.\textsuperscript{117} The questionnaire consisted of a total of fourteen close-ended questions with the possibility for comments at the end. As was noted by the first GVU survey the lack of participation made the study extremely hard to analyze. By keeping the number of questions in my survey at fourteen I hoped that people were more likely to participate. The questions asked the respondent about general

\textsuperscript{116} See appendix A for a complete listing of the questions. Or access them via the WWW at: http://wwar.com/survey/index.html.

\textsuperscript{117} World Wide Arts Resources. (1996). http://wwar.com/
demographic information as well as their perceptions and preferences while interacting with art sites on the WWW. The respondent was only able to select one answer per question in the questionnaire. This was implemented via HTML radio buttons\textsuperscript{118}. This only offered the option of one choice, thereby avoiding any confusion for the respondent.

Participants/Location of Research

As I pointed out before, the survey was located on the World Wide Arts Resources (wwar.com) WWW server. Only visitors from over the WWW were able to participate in this survey. Yet, every visitor at World Wide Arts Resources had the opportunity to participate in the survey. My goal in this study was to concentrate on visitors to the WWAR server.

Data Collection

Data collection took place in several different ways. First, I placed a link to the questionnaire on the main page of WWAR for anyone to have access. This enabled visitors who might not actually follow any hypertext links from the home page to explore further in the hierarchy of the site to answer the questionnaire. Second, I placed a link to

\textsuperscript{118} HTML radio buttons enable the user to make a selection via clicking on a box-like image that will then include a check and mark the choice as a selection.
the questionnaire on the index pages and other individual pages at the WWAR site (i.e. museum, gallery, artist index or artist listings starting with for example the alphabetic letter B or even conservation resources).

Reduction and Editing of Data

According to Jaeger (1988), data collected on questionnaires or through interviews are not typically in a format that permits immediate analysis. Some of the data resulting from the questionnaire might actually be faulty. However, in this case the close-ended questions did not permit for invalid responses and a certain factor of trust between the researcher and the participant is always evident in survey research. The questionnaire had also been designed in such a way that it was impossible to submit the data via the submit button unless all questions had been answered. This offered the possibility to exclude incomplete questionnaires. The step prior to analysis took place via a Perl script\textsuperscript{119} that performed the task of data collection and reduction. This script compiled each individual questionnaire response without the HTML related comments and e-mailed the data from the WWW server to a specific email address. It then converted the questionnaire responses into a format which made it possible to import them into the Microsoft Access database for later analysis.

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The Perl script collected all the data, mailed the information to an email address, and also appended the information to a database file.
Analysis of Data collected from Questionnaires

Jaeger (1988) points out that it will be impossible to specify all the desirable data analysis prior to collecting survey data. I analyzed the data through cross tabulation queries and the Pearson Chi-Square analysis. The Pearson Chi-Square test enables the researcher to discover if there are any relationships between the population and the resulting answers to certain questions. Cross tabulation tables also showed the results of how answers from several questions related to one another. These tables made it possible to compute, for example, the percentage of respondents that have doctoral degrees and are willing to pay for access to WWW galleries, museums or artist studios. This chapter will clearly lay out the results from the survey and explain how they relate to notions and concepts that were pointed out in other chapters included in this study.

Hypothesis

When looking at the dynamic relationships between art and viewers on the WWW, it is necessary to determine how viewers perceive a work of art. This study will attempt to determine whether age and the level of education completed are important factors in how users view artworks on the WWW. Does the age of an individual have an impact on how the artwork is perceived? Is the work seen as a representation of the art object or is the representative image perceived as the real work of art?
Summary

The survey consisted of a continuous page questionnaire with 14 close-ended questions and the opportunity for each participant to express his opinions at the end of the survey.\textsuperscript{120} The survey at World Wide Arts Resources was conducted from January 17, 1997 until March 17, 1997 and yielded 279 completed questionnaires from 843 participants that had looked at the questionnaire page. Double submissions (tracked by I.P. address) were deleted from the collected data and each participant was allowed to answer the questionnaire only once. This kept spamming\textsuperscript{121} or falsification of the population to a minimum.

Questionnaire Summary

As the hypothesis states, the survey was attempting to establish whether age and education are determining factors to how a visitor to a WWW art site perceives a work of art. The survey also requested general demographic information such as how long participants had used the WWW, how many hours per week they spent on the WWW, the level of education completed, age, disabilities, their primary use of the WWW, their knowledge of the visual arts and how many times they had visited a traditional art gallery or museum. The questionnaire furthermore inquired about the participant’s perception

\textsuperscript{120} See the appendix for a copy of the original questionnaire.

\textsuperscript{121} Spamming is when an Internet user sends out hundreds or even millions of messages to unsolicited Internet users’ addresses. Spamming also takes place when an Internet user submits forms of email message over and over to the same address.
and preferences. It asked the participant her perception of a visit to a WWW art site and artwork on the WWW, which art item they would be most willing to buy via the WWW, how they interpreted a work of art on the WWW and how they would compare art exhibited on the WWW with a traditional gallery or museum exhibition.

High Level Summary

Question 1: How Long Have You Used the WWW?

The largest group of respondents (48.7%) said that they had used the WWW for less than six months. Closely, following this trend WWW usage between 6 to 12 months and one to 2 years were 18.6% and 17.2% respectively. Of the respondents (8.6%) had used the WWW for two to three years. Not surprisingly only a small group of respondents (6.8%) had used the WWW for longer than 3 years. It is interesting to find that World Wide Arts Resources has such a high number of “new” WWW users. However, this might have been influenced by the fact that many of the visitors to World Wide Arts Resources come from the America Online Service\textsuperscript{122} WWW gateway. For this survey over 24% of all completed questionnaires were answered by visitors from AOL. An explosion in AOL users in recent months and thereby more visitors from AOL at www.ar.com is one of the factors that influenced the results of this question in the survey.

\textsuperscript{122} America Online. (1997). http://www.aol.com

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Question 2: How Many Hours per Week Do You Spend on the WWW?

The highest number of users (37.6%) in this survey spend between two and five hours per week on the WWW. Following was 26.5% of respondents spending between six and ten hours. The usage of eleven to twenty hours per week was a group of 16.1%; 10.4% spend twenty-one hours or more and only 9.3% spends under one hour per week. I found that a large number of the respondents 64.2% spent somewhere between two and ten hours per week on the WWW. Also, after analyzing access logs at World Wide Arts Resources for more than two years and logs at such institutions such as Wittenberg University it has come to my attention that the highest rate of accesses occurs between 11 o’clock in the morning and 4 o’clock in the afternoon. This means that a large number of people use their time on the Internet during work or lunch hours.

Question 3: Please Indicate Highest Level of Education Completed.

Not surprisingly the largest group (40.1%) of respondents were college or university graduates. As the GVU surveys have shown it is a well known fact that most WWW users are college educated. The surveys at GVU support this as well. A group of respondents (23.3%) in my survey reported that they had some college or university education and 16.5% reported graduate degrees. The other educational groups in this survey were much smaller with 8.6% saying that they only had a high school degree, 2.9% reported to have doctoral degrees and 4.3% had professional degrees. A total of 87.1% of the respondents had been educated in a college or university environment.
Question 4: What is Your Age?

The average age of all respondents in this survey was 38.5 years of age. The youngest respondent was 13 years of age and the oldest 73. It is interesting to note that in comparison to the GVU 6th survey the average age of the respondents in my survey was 4.5 years older. Since the time frame for my survey was so short it is impossible to establish whether a change in the age structure of WWW users is taking place. However, as the GVU surveys have shown in the past the average age of the WWW user has increased slowly (4th survey 32.7, 5th survey 33 and sixth survey 34.9).\textsuperscript{123} Pitkow has also (GVU, 1996) pointed out that the stability in demographics of WWW users are now becoming more evident. Before the 6th survey in the second half of 1996 changes to demographics of WWW had been quite erratic. In the analysis section following this summary age groups have been divided into the following: first group includes 17 participants to 18 years of age; second group includes 46 participants from the age of 19 to 26; the third group is made up of 143 participants from the age of 27 to 46; and the fourth category includes 73 participants of 47 and older.

Question 5: Are You Disabled?

A figure of 90.3\% of all participants showed that they had no disability. However, the highest rate of disability of respondents was motor impaired (5.0\%) and astonishingly second to that turned out to be vision impaired (3.6\%). It is possible for vision impaired


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WWW users to use the WWW by using a special display unit that prints out text from a WWW page in Braille. The WWW user can then read these words. However, it becomes much more of a complex problem with graphic images. The Braille display unit is not yet capable of displaying imagery to these users.

**Question 6: What is Your Primary Use of the WWW?**

This section of the survey turned out to be one of the most interesting in terms of how participants responded. The largest group of participants overwhelmingly claimed that they used the WWW for research and education (59.5%). The second closest group of respondents said that their primary usage was work (15.8%). The number of 13.6% stated that they used it for entertainment purposes. Of all respondents 10.4% claimed to primarily use the WWW for browsing purposes. Only 0.7% of they participants said that their primary usage was for shopping purposes. It is an obvious concern that WWW users are not as likely to use the Internet for shopping because of security concerns but is interesting that only such a small number of respondents primarily used the WWW for shopping.

**Question 7: How Would You Describe Your Knowledge of the Visual Arts?**

Of the respondents 48% stated to have a good knowledge of the arts. Seventeen point nine percent said that they had an expert knowledge and 25.1% responded with some knowledge. Only 7.5% said to have little knowledge and 1.4% had no knowledge. These results are not unexpected considering the educational level of the participants. As other
WWW surveys have discovered most WWW users are highly educated. This question posed a situation of self analysis. However, it should not alter the validity of results because as Jaeger (1988) pointed out, it is important to build trust between the participant and person creating the survey. Furthermore, visitors to World Wide Arts Resources are obviously interested in the arts because of the information provided at this site is solely arts oriented. Therefore, the results should be taken at face value.

*Question 8: How Do You Interpret a Visit to a WWW Gallery, Museum, Artist's Site?*

It is not surprising to find that 38% of the respondents interpreted a visit like a preview before visiting a gallery, museum or artist studio. Thirty-five point eight percent interpreted it as a magazine or book and only 14.3% saw it as an actual visit. Eleven point eight percent responded that they did not know. Since most WWW art sites today do not offer interactive qualities it is not surprising to find that almost 74% of the respondents interpreted a visit to a WWW art site as either a preview or a printed medium.

*Question 9: Which Item Would You Be Most Willing to Buy via the WWW?*

The largest group of responses came from the sample population that would not buy any art via the WWW (34.8%). Thirty point five percent said that they would buy an arts publication. This is not unexpected when comparing the factor that such a large number of respondents interpreted a visit to a WWW art site as a presentation of the printed media. Question 13 also showed the same results. Nineteen point seven percent of users
said that they would buy a mechanical reproduction via the WWW. Only 15.1% claimed they would be willing to buy an original work of art via the Internet.

*Question 10: How Many Times Have You Physically Visited an Art Gallery, Museum within the Last 6 months?*

The users seem to be fairly active in the visual arts. In the last six months 43.4% said that they had visited a gallery or museum one to three times. Twenty-six point five percent claimed to have been to a gallery or museum seven or more times. Twenty point one percent responded four to six times. Only 10% said that they had never been to a gallery or museum. Over 46.6% of all respondents had been to a gallery or museum at least 4 times over the last six months. Since World Wide Arts Resources only provides arts information it is not surprising to see that such a large number of respondents had been so active in the visual arts. However, it is important to point out again that we cannot generalize these results to the entire WWW population.

*Question 11: What Would You Like to See Most of on the WWW?*

The clear message seems to be that most users would like to see more works of art, museum, galleries, artists information, arts publications and academic arts information. Fifty-two point seven percent expressed their desire to see more of all the above mentioned categories. Seventeen point nine percent wanted to see more works of art via the WWW and 10% wished for more information on artists. Five point seven desired to find more information on museums followed by 4.7% that wanted to see receive more
academic arts information. Four point three percent desired more art galleries and 3.2% wanted to see more arts publications. It is interesting to note that only 1.4% said that the WWW already offers enough arts information. The overall implications mean that not enough arts information is available via this medium yet.

Question 12: Would You be Willing to Pay for Access to Museums, Galleries, Artist Studios, Arts Publications Via the WWW?

From the earlier question about purchasing behavior it would be assumed that most of the respondents would not be willing to pay for access to art sites via the WWW. This study found that 49.8% of the users said that they would not be willing to pay for access. Only 15.4% of the responses resulted in a positive decision to pay for access. However, the surprise was that 34.8% claimed to be undecided at this point in time. Yet, many WWW users already indirectly pay for access to arts information via the WWW and thus the question might have been misleading altogether. AOL users until very recently were paying for access to the WWW at an hourly rate. Thus they were paying indirectly for this information. Most WWW users today pay a flat monthly access fee in order to use the Internet. Therefore, they already pay for access to museums, galleries and other art sites. Yet, art sites do not receive monetary compensation from this. Internet access providers receive all the income for this service. Today, we have a situation of indirectly versus directly paying for access to art sites. There is hope for sites that do charge access because 34.8% claimed that they were undecided to pay for access. Yet, in order to make this viable the information provided at such a site will have to be exceptional.
Question 13: How Do You Interpret/Perceive a Work of Art on the WWW?

After having summarized questions above it is not surprising to find that the largest group of respondents, 48.7%, interpreted/perceived a work of art via the WWW as looking at a magazine/book. Nineteen point seven percent of the users saw it as watching television. I am sure this is a result of lacking interactivity. Today’s WWW is quite comparable to television in that it only offers a one sided way of presenting information. However, it is interesting to note that 12.2% of the respondents interpreted it as viewing the art object. Only 7.2% viewed it as virtual reality and 12.2% as none of the choices available to the respondent.

Question 14: How do you Compare Art Exhibited on the WWW with an Actual Exhibition?

As it was to be expected after seeing the results of earlier summaries more than half of the respondents (54.5%) said that one could not compare viewing artwork via the WWW with an actual visit to an exhibition. It is also interesting to find out that 26.9% saw viewing artwork via the WWW not nearly as fulfilling as visiting the actual exhibition. Eleven point one percent of all participants stated that one could not compare an exhibition on the WWW with an actual one. Only 7.5% of the respondents saw viewing artworks via the WWW as going to an exhibition.
Analysis

The survey established that most of the users responding to the questionnaire were fairly new to the WWW. With the high number of responses from AOL members it was not surprising to find that many had only been using the WWW for less than six months. This group was also the oldest age group with an average age of 40. WWW users with little experience might have a different perception of the WWW and its possibilities, opportunities and information provided than “experienced” ones. Through constant monitoring of email feedback at World Wide Arts Resources it has come to my attention that many inexperienced users actually think that much more information in the visual arts would be available on the WWW than it is. Little understanding that all possible information cannot be available at this point in time due to the maturity and clear limitations of the present WWW seems to exist.

The Chi-Square analysis offered an opportunity to establish whether there is a dependency between the level of education or age and the perception of an art object via the WWW. First, we will take a look at whether age is a factor. As mentioned before, I divided the sample into four balanced age groups: under the age of 18, ages 19 to 26, ages 27 to 47 and age 48 and older. This made it possible to use the Chi-Square analysis. Question 13 of the questionnaire provided interesting results. The Chi-Square test enabled us to find with 95% confidence that there is a relationship between the age and their respondents.\textsuperscript{124} It provided us with information that there is a tendency that

\textsuperscript{124} See Figure 1 in Appendix B for the Chi-Square analysis.

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respondents under the age of 18 were likely to interpret a work of art via the WWW as virtual reality. Participants with ages 19 to 26 had a tendency to perceive it as viewing a magazine or book. Ages 27 to 46 were also most likely to perceive it as a magazine or book. Yet, it was interesting to find that the age group 47 and older had a tendency to perceive the art object as the real work of art. The analysis also showed us that the number of older participants viewing it as a magazine or book was much lower than expected. I assumed that mostly younger participants would interpret the work as real due to their high level of exposure and immersion into many kinds of technology and media. Yet, I found the complete opposite. The factor of how long participants from the fourth age group had been using the WWW might have been a strong influence in how they perceived the work of art. A group of 75.3% of the fourth age group had been using the WWW for less than 12 months. Yet, when looking at how long the youngest age group had been using the WWW I found that it was about equal to the oldest age group. Seventy point five percent of the participants from this age group had also been using the WWW for less than twelve months. However, the lack of experience in terms of how long they had used the WWW might be an important factor of why the oldest age group did perceive it as the real. It might have also arisen from the fact that the oldest age group was spending much more time on the WWW than the youngest group. It is hard to say whether the oldest age group is spending more time on the WWW because they cannot obtain all the information that they are searching for. Or it might be the case that they accept information via the WWW much more readily and thus spend much more time via the WWW. A high tendency to spend more than 21 hours per week on the
WWW showed a strong usage of this new medium in the oldest age group. The tendency for spending between six to ten hours weekly was also stronger than expected with a 22 to 19.4 frequency. On the other hand the youngest age group spent much less time on the WWW. A high tendency to spend under one hour per week was found in this group with a 6 to 1.6 frequency. Eighty two point four percent of these respondents spent less than five hours weekly on the WWW compared to only 38.4% of the oldest age group. Even though it is evident that younger users have more exposure to computer, electronic media and WWW it might be possible that the older user in the fourth category “believes” and interprets information more often as “real” because of the amount of time spent on the WWW.

It is also interesting to note that only a small fraction of the oldest age group, 17.8%, interpreted a visit to a WWW gallery, museum, artist site as the actual visit. Forty five point two percent perceived it as a preview before visiting the actual gallery, museum or artist’s studio. The group of participants under 18 years of age had a high tendency to interpret it as an actual visit: 23.5%. This is not as surprising as the first observation because of their level of education and also their frequency of having recently visited an actual art gallery or museum. Of the youngest age group 88.2% had visited a gallery or museum less than four times in the last six months compared with the oldest age group where 64.4% had visited a gallery or museum more than four times in the last 6 months. Education was also an interesting factor for this question on how participants perceived a work of art. In this analysis high school graduates had a strong tendency to perceive the work as real or as watching television. Participants with masters degrees
also had a tendency to perceive it as the real or watching television. Respondents who
had some college experience or had graduated from college had a tendency to interpret it
as viewing a magazine, book or as virtual reality.

Question 14 pertains to how the respondent would compare art exhibited via the
WWW with an actual exhibition and also allowed us to do a Chi-Square analysis\textsuperscript{125}. High
school students had a high tendency to interpret viewing art via the WWW like going to
an exhibition. College graduates and respondents with masters degrees had the tendency
to state that one could not compare it with the actual visit. Participants with some college
experience either had no opinion or a tendency that it was not nearly as fulfilling as a real
visit. It is interesting to note that the frequency for respondents with some college
education was much lower than expected: 1 to 4.7. Although the confidence level was
not as high when looking at the relationship between the age groups and their
interpretations of question 14 some interesting factors were established. The first age
group had a strong tendency to interpret it as going to an actual exhibition and also
stating that it was not nearly as fulfilling. Yet, it was interesting to find that the
frequency was much lower than expected in the response that one can not compare the
two.

Question 11 provided further analysis.\textsuperscript{126} We have previously established that
certain age and educational groups had specific tendencies in interpreting art works via

\textsuperscript{125} See Figure 2 in Appendix B for the Chi-Square analysis.

\textsuperscript{126} See Figure 3 in Appendix B for the Chi-Square analysis.
the WWW. Question 11 established that the youngest age group had a tendency to request more galleries and works of art on the WWW. Ages 19 to 26 were much more diversified in their requests. This age group had a tendency to desire more artists, academic information, art publications, and museums on the WWW. The third age group was fairly diversified in their desires and had a tendency to request more academic, artists, galleries, museums and arts publication information. The oldest age group clearly had a tendency to desire more of all the choices that were given (61.6%) followed by works of art. Education also showed specific tendencies. High school graduates showed a tendency to request more works of art, galleries, art publications and academic information. Participants with some college experience were also fairly diversified. It showed a strong tendency to request all of the possible elements followed by academic information, and arts publications. College graduates had a tendency to desire more artists and works of art on the WWW. Participants with masters degrees showed a strong tendency to request more academic information and museums. However, it is interesting to note that the frequency of requesting more museums in this educational group was not nearly as high as expected. The frequency showed 2 instead of the expected 5. It is also not surprising that all educational groups showed a strong preference to request more arts information via the WWW. This is an important factor when creating WWW sites for museums, galleries, and artists. The creator of a WWW site will have to publish more than just the basic WWW site in order to have a successful site.

It is important to take a look at which participants were willing to purchase art over the WWW. It is a well known fact that consumers are not eager to spend money via
the WWW because of security concerns. This is reflected in the response of all age
groups in this survey. Of the youngest age group 47.1% claimed that they would not buy
any work of art via the WWW. Although this is percentage is fairly high when compared
to other age groups it is not surprising because young arts enthusiasts are less likely to
buy real art as well. Thirty nine point one percent of participants in the second age
category responded that they were not willing to buy any art via the WWW. The third
age group was the lowest with only 30.1% stating that they would not buy any. The
fourth category on the other hand was higher with 38.4% of the participants not willing to
buy via this medium. Yet, it was interesting that this age group was also the highest
willing to buy a real work of art. Twenty point six percent responded they would buy an
actual work of art via the WWW. The first and third age categories were similar in their
responses: Seventeen point seven percent and 15.4% were willing to buy the actual work.
It was surprising to find that only 4.4% were willing to buy an actual work. In this age
group I found that 30.4% were willing to buy a poster instead. Yet, other observations
showed that most age categories were similar in their response to buying arts publications
via the WWW. This is surprising because it is a known fact that since The Wall Street
Journal started charging visitors admission to their online subscriptions their visitor rate
dropped dramatically. After the finding that 30.5% were willing to pay for arts
publications via the WWW it is essential to point out how respondents answered
Question 12. Although they claimed to be willing to pay for access to publications their
responses were very straight forward when it came to paying for access to museums,
galleries, artist studios and arts publications. Of the youngest age group, 64.7% said that
they were not willing to pay for access. None of the respondents in this group said that they were willing to pay for access to any of these types of sites. 35.0% claimed to be undecided. 63.0% of the second age group also claimed that they were not willing to pay for access with 22.7% being undecided and 15.2% stating their willingness to pay. The third and fourth age groups were fairly similar in their responses. 46.9% of the third age group were willing to pay for access compared with 43.8% of the fourth age group. Both of these groups had the largest number of undecided responses. 37.8% of the third and 37.0% of the fourth group were unsure. Yet, both these age groups were also the most willing to pay for access, 15.4% of the third and 19.2% of the fourth were willing to pay for access to museums, galleries, artist studios and arts publications.

Conclusion

As I pointed out in previous chapters it is not surprising to find that many of the respondents interpreted a visit like a magazine or book because of the design of WWW pages today. It is also not surprising to find that participants were most willing to buy a publication rather than an original work of art. Most of the sites today offer pages that actually look like a magazine or book. Publishing on the WWW today is one sided and mimics the printed media. Few interactive elements are offered at most WWW art sites. It is possible to assume that site design and more interactive elements like those used by Netcast will change the perception of the visitor. If sites are created and designed specifically for the WWW it might also be possible to change people’s perceptions on how they interpret the media and works of art.
It is essential after analyzing the results of this survey that future WWW designers and creators take the age and education factor into consideration. It is of utmost importance that the creators know their target audience. Virtual curators should not only create sites and content for multicultural groups but also for certain age groups. Visitors from specific age and educational groups will have very different experiences and interactions with an art object via the WWW if the site is created for their age and educational level. It will not only offer them the choice to learn and communicate better but it will also offer the visitor more insight. This will of course require more monetary resources for the WWW site creators but it will also offer them greater rewards and success.

Purchasing behavior of visitors will also change in the future when the medium becomes more mainstream and more accepted as a medium for financial transactions. I doubt that many people will buy traditional works of art via the WWW without having seen them in reality first. But art specifically created for the medium might create a different scenario. Yet, the art world and the collector will have to embrace the WWW and computer created aesthetic expression as a viable artistic medium before this will be the case.

It is impossible to draw sweeping conclusions from this survey because no other surveys have been conducted that take the artwork and the WWW into consideration and the process of self selection and the relatively small group of respondents surely play an important part. There are surveys such as the ones at GVU that have questioned participants about site layout but none that actually ask the visitor to reveal their aesthetic
thoughts and acceptances in relationship with a work of art. Future researchers will have
to duplicate this survey in order to find out whether age, education and time spent on the
WWW actually influences how the visitor perceives a work of art via this medium.
However, it will also be difficult to do long term studies in this form of medium because
of the rapid technological changes that will occur on the WWW. Future researchers will
also have to overcome the difficulties of random sampling and the process of self-
selection when undertaking future surveys. Yet, the WWW as a survey medium itself is
very promising. Only constant research and knowledge of current information,
techniques and technical possibilities will make the museum’s, galleries’ and artist’s
WWW site truly exciting, informative and educational. All elements have to be carefully
taken into consideration. To know one’s target group an amalgamation of differing
approaches will prove to be the most successful.
CHAPTER 7

SUMMARY AND RECOMMENDATIONS

Summary of the Study

The invention of the WWW in 1994 was a logical and timely development that has its roots in the steady growth of the Internet that began in this country in the 1950's. The early Internet’s use was mostly restricted to military researchers but was later opened up to university researchers and scientists from all across the world. The tremendous military and government support for the Internet, its opening to the general public, and tremendous advances in networking technology made Tim Berners-Lee’s invention (the World Wide Web) possible. Despite its current popularity in this country and tremendous technological advances one cannot forget that only a fraction of the world’s population is actually connected to it today.

This study is concerned with the development of the World Wide Web and how it relates to the visual arts on the WWW. Visual arts information has been readily available since the creation of the WWW in 1994. But, only certain members of the arts establishment have embraced this relatively new medium. Traditional museums have generally been slower in developing and integrating informative and qualitative WWW
sites into their overall presentation of the arts to the general public. However, individual artists, artists’ collectives, publishers, commercial and non-commercial galleries have eagerly embraced the medium. The latter group uses it as a primary marketing, exhibition and aesthetic communications medium by publishing large numbers of traditional and virtual works of art.

This study also questions the concepts of traditional curating and how they relate to the emerging possibilities of virtual curating. Traditionally, curating has been controlled by a relatively small number of members of the traditional arts institution and arts establishment. The concept of virtual curating opens this medium to new possibilities and opportunities such as transferring control to a group of people such as artists, curators, educators, marketing professionals, designers and the general public.

Another important part of this study is the concept of Intellectual Property and legal hurdles and safeguards that are associated with publishing the arts via the WWW. Copyright laws at this point in time are being reinterpreted by the courts in this country and will only derive definitive standards and laws by trial and error. However, we have to remember that this issue is definitely a global problem and not only a national one. By establishing a global network laws need to be reinterpreted on a global rather than national level. Copyright laws and their interpretations vary greatly from country to country. Protecting the artist, museum or art work on the WWW using global rather than national or local laws will be the only way to accomplish real security for all parties involved.
A survey undertaken at World Wide Arts Resources provides insight into current views and how they relate to age when it comes to the situation of the arts on the WWW. Museums, galleries, artists and educators are exploring the new possibilities of the WWW. With the ever changing nature of the WWW this study is by no means a comprehensive report on the status of the arts via the WWW. It can only examine a tiny portion of the development of the WWW and the arts as a whole. Yet, it may be among the first of many future studies that will examine the arts, aesthetics and their relationship with the WWW.

One of the most important findings of this study is the fact that curators, art professionals, business and marketing departments as well as the general public will have to work together on creating certain standards for virtual curating and aesthetic concepts for art sites on the WWW. The WWW is not merely for publishing arts information in a graphic or written form but it is also a new medium for aesthetic communication. The lack of acceptance of this medium by members of the traditional arts establishment is evident and does not ease the progression of the digital publications process on the WWW.

**Conclusion**

This study centered around the following questions: what and how have art museums, art galleries and artists presented artistic information via the WWW; what are the styles of virtual curating and if there are any how does the concept of virtual curating relate to the museum, gallery, artist and art object?
It became very clear to me early on when developing this study that an educated understanding of the visual arts as well as a knowledge of technological aspects and the WWW are necessary in order to publish a qualitative and informative WWW arts site. A visual arts site on the WWW, much like traditional publications, offers little “useful” information if the creator is not well educated or able to present aesthetic notions and concepts that relate to the visual arts. Only publishing a few images and some explanatory text on a WWW page does not make a good site. The arts site needs to be multifaceted in terms of the information presented and the way a visitor will likely to experience it. An amalgamation of different media such as text, graphics, animations, interactive written communication, voice and e-mail capabilities, sound and two way video need to be presented to the visitor so that the visit itself becomes a meaningful experience. Interactive elements that allow the visitor to genuinely interact with the content of the site or the artwork presented are of utmost importance. Without these interactive elements the publisher of the site is often not using the medium to its fullest potential and possibilities. Current technological features of WWW sites are already outdated in most instances and the arts community as well as individual publishers and curators have to push for new technological and aesthetic advances in order to carve out a stronger presence and impact on the WWW.

Today’s one sided method of publishing is a very limiting factor when taking the success of an artistic WWW site into consideration. Many of the arts related WWW sites offer an interface design that strongly mimics traditional ways of publishing because of a lack of understanding on the publishers part. Page layout and placing of text as well as
graphic imagery are often not very intriguing and too garish, appear unprofessional, and do not allow for the integration of interactive elements. Interactive elements are essential and will prove to be “the” element of any successful arts site in the future. We will need to learn to understand and be able to interact with a traditional work of art as well as with a virtual one. Today’s technological and aesthetic limitations in most instances do not allow the visitor to genuinely interact with a traditional work of art. This is not only due to the fact that most art sites do not even include these possibilities but also a lack of understanding by the creator/publisher and the visitor to an art site as to what possibilities and techniques are available today.

Let’s take the example of a traditional sculpture and explore its current and future possibilities. Today’s accepted interactivity is limited to enlarging a graphic representation from a thumbnail to a full screen view on a two dimensional monitor. No museum connected to the WWW has yet offered a solution of how to literally interact with a traditional sculpture. The viewer is not able to walk around the sculpture and interpret it in its true three dimensional and traditional setting that is often critical for installations. Advanced three dimensional modeling has made it possible to “scan/map” in a sculpture and apply texture to millions of polygons. However, today’s technological possibilities such as texture mapping do not enable the exact representation, replication or duplication of the sculpture’s surface texture. Important and minute elements of course would be lost in this process. A shiny Brancusi bronze sculpture would appear lifeless, inorganic and artificial in this virtual environment. Furthermore, it raises the question of whether this computer sculpture would truly be the original sculpture or merely an
attempt at reproducing and transforming it to another medium. Would the viewer be able
to appreciate the massive artistic and tactile qualities of a bronze, steel or granite
sculpture after it has been published on the WWW in the form of a three dimensional
computer model? Would this sculpture genuinely present its underlying aesthetic and
colossal structure through a digital construction made of thousands and even millions of
polygons? I believe that today’s understanding of the WWW and its acceptance with
traditional aesthetic thought limits its capabilities and potential. Seen through traditional
aesthetic interpretation the viewer of a traditional WWW based sculpture would not be
able to fully experience the scale and environmental impact of the sculpture itself. I
believe that virtual sculpture, entirely created in and for this medium, will be more
successful and true in this medium than an attempt to transfer a piece from one medium
to another. Holographic sculptures and virtual reality environments will offer new forms
for artistic expression. To present their fullest potential they cannot and should not be
interpreted in a traditional manner. Programming languages like VRML and Java might
also offer opportunities to advance the development of the visual arts on the WWW and
further future changes in aesthetic interpretation.

Today, VRML offers a form of limited interaction between the art object and the
visitor. The visitor is not forced to view a sculpture as a two dimensional representation
but is able to virtually navigate around it in a make believe three-dimensional
environment. With the possibilities of VRML the artist or curator can create the
environment envisioned for one work or a group of works. Although, visual complexity is
still in its infancy, one cannot deny the importance of today’s virtual work of art. A
virtual work much like its traditional counterpart is important in its contemporary or historical setting and displays some form of intellectual discourse that is an element within every work of art. This form and complexity of intellectual and or aesthetic discourse does not necessarily have to follow traditional rules and concepts but should explore new possibilities such as a reinterpretation or rejection of traditional values and artistic styles. This, much like any new, emerging artistic style, develops from the rejections and reinterpretations of traditional values and therefore makes it an important part of the continuous longing to discover newer and more sophisticated artistic styles. Furthermore, the struggle becomes part of the historical continuum that has taken place for well over ten thousand years. Yet, VRML offers only one further step in this process and is not the final solution to this ongoing struggle. VRML will not be “the” new form or medium of artistic expression, but, as I said before, an integral part of the continuous process.

Java also offers the possibility for improved interaction between the art object and the visitor. However, its technological infancy and capability also offer one more step in the development process of reinterpreting the arts via this medium. We have to understand that what many people see as special effects or hi-tech today may be integrated into the mainstream of artistic impression or be looked upon as completely outdated in the near future. We cannot reject the integration of technological interpretations, representations or creations in the visual arts if technology has become such an integral part of every day life already. Old Walt Disney animations/stills are accepted, traded and sold as real works of art. Then, why are computer generated

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animations or VRML sculptures not equally accepted? By continuously pushing accepted boundaries of artistic expression artists, curators, museum and gallery professionals will be able to overcome today’s double standards that exist because of the traditional arts establishment’s lack of knowledge and understanding of the virtual arts.

It is important to understand that the development of the arts on the WWW is somewhat similar to the traditional arts in that new styles are constantly created. We cannot assume that new programming languages will be the answer to technological limitations either but rather one more step in the development process. Today’s monitors and graphics standards on the WWW are also still in its infancy. It is a very different experience when one stands in front of an original painting or views it on the WWW. The graphical representation viewed on a computer monitor today is not comparable to the original just like the example of the Brancusi sculpture that I mentioned before. In most instances the computer image is scaled down from the original and surface texture elements are lost. Access to information via ultra fast computer networks is only a few years away and with further improvement of computer monitors it will most likely enable us to view surface texture of traditional as well as virtual works of art. Today, the electronics giant Philips is already offering fourteen inch flat screen monitors and a forty-two inch wide television screen that is only 4 inches thick. It won’t be too long before we will have flat display units capable of displaying texture hanging on our living room walls. This way we can rent Picassos or any work of art from any museum or gallery for a minimal fee. The artist of the future will not have to use traditional methods such as
printmaking to be able to sell multiple copies of their work but simply rent or sell a virtual version over the WWW to any interested customer.

However, the WWW also offers possibilities for the teaching of art history and art education. Most art history classes in the past have been taught using slides as the preferred medium. Today, the WWW offers the teacher the opportunity to pull images from databases or web sites anywhere in the world. The hypertext medium, multimedia capabilities and today’s computers make it possible to access much more information than a few years back. But, we cannot always assume that the information is always correct or accurate. The teacher and student therefore still have to carefully review and interpret web sites that might be used as part of the curriculum. The WWW is beneficial for providing self-paced access to vast amounts of information, but with the current layout of so many art sites mimicking the traditional publishing medium, one might just as well pick up a book and read, instead of spending hours in front of a computer screen hunting for bits and pieces of information. Of course certain information is only available in either medium. Therefore, the WWW, when used for teaching in current environments, should be integrated into a curriculum that includes both the traditional and the new.

Today’s full potential however might also prove to be a double edged sword. Current software and hardware have advanced tremendously when compared to ten years ago. However, software and hardware will be further advanced within the next ten years. A virtual sculpture or work of art might be easily viewed and enjoyed today but might be
inaccessible in 20 years because of further rapid software and hardware advances\textsuperscript{127}. Most traditional works of art like paintings use different types of materials and it is still possible to view a painting from the 15\textsuperscript{th} century but it might not be possible to view a 1990's virtual work in 2200. This of course should not hinder an artist from creating virtual works of art, but it should warn future archivists in museums and galleries about a potential concern when maintaining virtual works of art for future generations to enjoy. Will the gallery in 2200 have to sell the customer an ancient computer as well as the work that is stored on the hard drive? What will happen if one of the old computers fails and there are no parts available any longer?

One of the most evident downfalls of the WWW is also reflected in many arts sites. The WWW offers bits and pieces of information but often lacks comprehensive and well structured knowledge. It makes me wonder if the WWW today is not unlike television in the 1990's. Traditional mass media such as three minute news coverage and news-magazines that barely scratch the surface of important issues or solutions are broadcast and embraced by the general public every day. This might be one of the reasons why the WWW is so popular today. Museums offering one important work of art from their permanent collections on their WWW site with little educational or explanatory information can be found just one mouse click away. However, both, the traditional mass media and the new Internet mass media, bombard us with bits and pieces and it makes me wonder if this information is really worth absorbing. Is it the task of a

\textsuperscript{127} For example, most of today's software cannot interpret early PCX graphics files.
WWW arts site to just merely spark our interest or to involve us in the process of visual interpretation? Should the creator of a WWW site make all the interactive decisions for us? Visitors to a museum site should be able to choose their own pace, way of navigation, and interactive aesthetic experience. A work of art via the WWW or in more traditional settings will only be successful if the viewer can actually interact with it. A possible solution to this issue might be a futuristic integration of both media into one. Museums today already offer self-guided tours that are not necessarily linear in their layout but offer the visitor the opportunity to choose their own way of navigating through the space. The integration of both traditional approaches and new mass media creations would allow the viewer to make their own decisions if the one bit or byte of information is enough to spark their interest or satisfy their visual interpretation. Dynamic HTML\textsuperscript{128} (DHTML) might be an early attempt to solve this problem. The strength of DHTML is its ability to more efficiently interact with databases and create pages “on the fly” that would be necessary to build truly interactive art sites. With Cascading Style Sheets and the features of DHTML the author finally has more creative control such as the manipulation of any page element, change styles, positioning, and content at any time. Interactive tours could be created with immediate results and be geared towards a personalized version of a virtual museum visit. Each visitor could thereby experience a visit much like how they would interpret it in the traditional museum setting. Today’s traditional museums offer

\textsuperscript{128} Dynamic HTML (DHTML) gives authors creative control so they can manipulate any page element and change styles, positioning, and content at any time -- not only when the page is loaded.
the possibility for the visitor to control their experience individually. However, WWW sites often do not offer free navigational possibilities and lead the virtual visitor through the two dimensional space in the fashion of a linear presentation.

Art museums will have to carefully take these notions into consideration when creating WWW sites. It is not enough to place a few images from the permanent collection and some exhibitions calendars on their sites. The effective and informative museum site needs to be virtually curated by an entire group of professionals such as curators, educators, designers and marketing professionals. The traditional concepts of one sided curating, where one person’s view and opinion is accepted by all, will have to adapt to the concept of virtual curating where the entire group of professionals will be involved in the process of presenting, not just mere bits of information but in providing well structured and qualitative amounts of information. This process includes aesthetic, technical, interactive information design and marketing issues. By doing this, the group will also have to give interactive and aesthetic freedom to the visitor as well. The aesthetic experience and interaction with the art object needs to be open and a continuously developing process in order to succeed. By allowing the communicative and interpretive process to develop between the creators/curators of WWW sites and visitors will have a more meaningful experience. It will be less of a one sided experience but a meaningful, educational, visually and intellectually stimulating one.

The virtual museum will not only be a traditional institution in terms of preserving art objects and knowledge, creating a dialogue between the art object and the visitor, but it will also have to accept its new role as a media house, publishing valuable
information on the WWW. It will also have to find its role as a broadcasting entity in a network of constant flux and change. Skills such as program interpretation, production analysis, exhibition design and aesthetic communication design will all play a crucial part in the success of the virtual museum and virtually curated exhibitions. The virtual curator will have to be versed in traditional museology as well as in current aesthetic concepts, interpretation/presentation and future trends of interactive information design. Virtual art sites should not necessarily be divided into museums, galleries, artist sites and publications but the virtual art site should take on its own identity and category that has yet to be fully established. Present ideals and notions are too limiting to the development of this new communication process and form of aesthetic identity.

The museum, gallery and artist will have the opportunity to break down local, national and international barriers to information exchange via this medium. Yet, the new aesthetic expression on the WWW will not come to maturity from one day to another but through a long process of trial and error. Museums galleries, artists and creators of art sites will have to embrace the WWW without reservations in order to further this new form of interactive aesthetic communication. Furthermore, museums will have to develop WWW sites as an integral part of the entire operating process instead of viewing it purely as a marketing tool, as many museums, galleries and artists do today. Curatorial and presentation concepts as well as educational outreach opportunities are limitless for the museum via this medium.

Imagine a dynamic personalized visit to a museum in Australia where the visitor may choose their own level of interactivity and involvement in the aesthetic
communicative process - no dictated and didactic presentation but a transfer of control to the visitors themselves. The museum and gallery will also have to develop a WWW site that provides easy navigation and is comfortable for the novice to use without advanced knowledge of the arts and technology. The site needs to be cutting edge in terms of interactive information design but should not require superior technical requirements for usage. The inclusion of interactive technical elements should not outweigh the aesthetic communicative process. This is where the concept of have-and-have-nots comes into play once again. Today’s virtual artist creating works on expensive high end computers limits the opportunity for everyone to enjoy the work in the medium in which it was created because of the end-users technological capabilities. One should also not forget that publications on the WWW look different with all the different types of WWW browsers that are available today. For example, Microsoft’s Internet Explorer and Netscape’s Navigator both use proprietary HTML language tags that the other can not display. The WWW publisher therefore has to decide stylistically whether to create multiple versions of virtual works of art for each browser or develop a generic version of the work.

I believe that many of these problems could be averted by the acceptance of the medium by the art establishment and the establishment of one WWW based World Arts Association. This association would not only coordinate the collecting and presenting qualitative information from museums, galleries, and artists in many different countries but also offer online resources from where less endowed museums, galleries, and artists could draw. This association and the art establishment could establish new standards for
publishing, curating and interactivity.\textsuperscript{129} with works of art on the WWW. The association could aid in current marketing activities in addition to conserving and preserving aesthetic education and appreciation. It could also establish a truly international view of art. Of course there are technological limitations to this idea today, but historically, artists have always pushed aesthetic ideals. I do not see a reason why they cannot break today’s limitations. Technology should not dictate the limits to creative expression. This process would integrate the artist in an exchange of world cultural aesthetics instead of promoting and exporting national ideals and aesthetics. With the establishment of this association there would not be thousands of individual museums sites struggling to provide qualitative information but only one that has integrated all others into an unbiased knowledge base. Finally, the visual arts would become truly beneficial to the virtual visitor: no more countless, frustrating hours spent on the WWW hunting for bits and pieces of information. It is impossible to foresee exactly how the globalization of aesthetic exchange and thought via today’s WWW will influence future art movements. Yet, we have to take this step to offer free and unrestricted artistic development.

Current artistic developments on the WWW are limited by today’s technological possibilities in that they force the artist to be an expert in both their own field and computer programming. Who really is today’s artist presenting aesthetic information via the WWW? Is it the creator and designer of the site or the artists presenting their works

\textsuperscript{129} Today’s chatrooms, bulletin boards and VRML worlds are just the beginning of the possibilities of interactive elements.
of art? The visual and technological two dimensionality of the medium make it impossible to genuinely have a qualitative, interactive experience with a traditional work of art via the WWW. Important elements such as smell, touch, tactile and environmental qualities are lost in this medium. It is difficult to imagine and experience from a WWW publication how a site specific art installation interacts with surrounding elements unless they are entirely created for the virtual environment. I do not believe that virtual reality as we know it today will be the final answer either, but rather one step in the continuing advancement of the understanding of the technology and how it interacts with present aesthetic acceptance. Who wants to have to put on a virtual reality body suit in order to be able to feel the artistic qualities of a granite sculpture? Possible technological advancements in computer-human interface design such as devices that are steered by brain waves rather than a pointing device such as a mouse or virtual reality glove might make it possible to overcome some of these problems. Today one can either accept the WWW as a timely phenomenon or as the beginning of a new form of aesthetic communication.

The medium itself may also change how the arts are interpreted altogether. If its current form of presentation becomes more popular, we might however devalue the work or art itself. In the future the virtual art object might become more important than the real. It might not be the body of works of art that make an artist successful, but a few images presented on a WWW site or futurist flat-panel display screens in every American household. It would then be possible to “borrow” a virtual Picasso from a museum that is
located thousands of miles away instead of collecting traditional works of art such as paintings and sculpture.

Virtual curating at this stage of the development of the virtual arts on the WWW and its integration into traditional media and challenges of traditional thought will surely play a stronger role in the future. We are however at such an early point in the development process that it is impossible to foresee how exactly it will impact the visual arts in the long run. I can assume that the virtual arts will play an important role but we cannot definitively state that they will replace the traditional. No definitive styles of virtual curating have yet evolved in this medium. Today, the concept of virtual curating is more an issue of interactive information design rather than one of traditional standardization. Design standards of course play into the notion of virtual curating. As I have stated before in this study it is important to have an amalgamation of different media, graphics, text and information in order to have a well curated art site or virtual exhibition. However, with the ever changing nature of the WWW and improvements in technology I cannot accept the usefulness of establishing strict standards and rules for the concept of virtual curating at this point in time. It would clearly restrain the integration of the virtual arts into the main stream by limiting the curator of a virtual exhibition to certain accepted practices. Curators, artists, art educators, marketing professionals and business advocates all have to work together to further this medium to create worthwhile WWW based exhibitions. Without constantly re-evaluating the traditional visual arts and their applicability for today, the future virtual curator and curatorial team will never be able to push this medium to its fullest potential.
Recommendations for Further Research

Like many other research studies that have been conducted in such a new field, this study presents as many questions as answers. With the constantly changing aspects of the WWW and the arts in general this study will allow future researchers to refer to it in an historical analysis as well as a timely interpretation of the state of the WWW in the late 1990's. It is important to understand that the WWW is only in the early stages of development. The WWW will be different within a few years due to the constant technological advances in the computer industry. We can only hope that the network will offer everyone an equal chance to experience and further the visual arts via this medium. We must be careful that the problem of the monetary and technological have and have-nots will not arise from this push to further the arts via this medium. It would be a disaster for this medium to create a small group of elitist users and creators. If a work is created purely for the WWW or Internet it has to be accessible to everyone. If this is not the case, the work would be inaccessible and could well be compared to works of art getting “lost” in a museum vault. It is therefore important to face research and the furthering of the arts via this medium with the technological opportunities and limitations in mind.

The long term impact of intellectual property laws and how they will relate to the development of the arts on the WWW will only be decided with continual challenges to present laws within the judicial system. It is important that future laws not limit free expression and the availability of information. It is also important that these laws will continue to protect the rights of the creator of works of art on a global rather than national
level. It is crucial that the individual artist, designer and creator of WWW sites will be able to further the visual arts via this medium without being challenged by outdated laws or special interest groups that might desire to dictate future aesthetic expression and communication. Furthermore, it is essential that museums, galleries and artists understand the principles of the intellectual property laws before setting out to create their own sites. These laws can aid but also restrict the entire process. Information might not be as readily available if the laws in the future are narrowly construed. Yet, museums already deal with many of these questions in their traditional publications and it is important that they embrace this new medium and overcome their reservations concerning publishing on the WWW. Museums should aid each other and join together to help redefine current intellectual property laws.

It may be necessary for future researchers to replicate the survey undertaken at World Wide Arts Resources in order to establish whether perceptions and interpretations of art published on the WWW have changed. Ten years from now it might seem strange to contemplate how people perceived art on the WWW in the 1990's. It will also offer future researchers a chance to take a look at an early slice of WWW history and how it related to the arts during that time.

Final Comments

When I think about the recent developments on the WWW and the visual arts I am confident that this medium will offer artists, museums and galleries the opportunity to further globalize the arts. Yet, we have to be open to constant change in technology and
also aesthetic expression. We also have to be careful that one cultural viewpoint will not be dictated to the rest of the world via this medium. Today, English is the most used language on the WWW. The possible danger of a new form of information colonialism does exist and should be faced now. However, we do not yet know how this will impact the arts via this medium. We cannot and should not compare the arts on the WWW with only traditional notions and concepts. We have to embrace the opportunities of this medium and let the medium itself steer us in new directions of artistic expression and communication. By being unbiased we will give the artists of the early WWW the opportunity to lead us into the future and possibly reinterpret traditional aesthetics and ideals. Interactivity will have to be approached not as a way to relate to machines but as an opportunity to create an aesthetic dialogue between visitors and art objects in virtual artistic communities.
APPENDIX A

ONLINE QUESTIONNAIRE

WE WANT TO KNOW WHAT YOU THINK

We are interested in how you see the arts on the WWW and would like to thank you for taking the time to answer this survey. There are 14 questions that should take no time at all. By giving us your comments you will improve the arts on the Internet! We will post results to this questionnaire on this site after completion of the survey. If you would like to receive e-mail with the results please send you name and email address to

survey@wwar.com

1. HOW LONG HAVE YOU USED THE WWW?

You may only select one option

A: Less than 6 months
B: 6 to 12 months
C: 1 to 2 years
D: 2 to 3 years
E: 3 years or more
2. HOW MANY HOURS PER WEEK DO YOU SPEND ON THE WWW?

You may only select one option

A: under 1 hour
B: 2 - 5 hours
C: 6 - 10 hours
D: 11 - 20 hours
E: 21 or more hours

3. PLEASE INDICATE HIGHEST LEVEL OF EDUCATION COMPLETED

You may only select one option

A: Grammar School
B: High School
C: Some College/University
D: College/University Graduate
E: Master's Degree
F: Doctoral Degree
G: Professional Degree
H: Other

4. WHAT IS YOUR AGE?

(Enter age into field)
5. ARE YOU DISABLED?
You may only select one option
A: Vision Impaired
B: Hearing Impaired
C: Motor Impaired
D: Cognitively Impaired
E: More than one of the above
F: None of the above

6. WHAT IS YOUR PRIMARY USE OF THE WWW?
You may only select one option
A: Entertainment
B: Work
C: Research / Education
D: Shopping
E: Browsing

7. HOW WOULD YOU DESCRIBE YOUR KNOWLEDGE OF THE VISUAL ARTS?
You may only select one option
A: Expert knowledge
B: Good knowledge
C: Some knowledge
D: Little knowledge
E: No knowledge

8. HOW DO YOU INTERPRET A VISIT TO A WWW GALLERY, MUSEUM, ARTIST'S SITE?

You may only select one option

A: Like an actual visit
B: Like a preview before visiting the gallery, museum, artist's studio
C: Like a magazine or book
D: I don't know

9. WHICH ITEM WOULD YOU BE MOST WILLING TO BUY VIA THE WWW?

You may only select one option

A: An original work of art i.e. painting, sculpture, computer art, animation
B: A mechanical reproduction i.e. poster
C: An art publication
D: I would not buy any art via the WWW

10. HOW MANY TIMES HAVE YOU PHYSICALLY VISITED AN ART GALLERY, MUSEUM WITHIN THE LAST 6 MONTHS?

You may only select one option

A: Never
B: 1 to 3 times
C: 4 to 6 times
D: 7 or more times

11. WHAT WOULD YOU LIKE TO SEE MOST OF ON THE WWW?
You may only select one option
A: Works of art
B: Museums
C: Galleries
D: Artists information
E: Arts publications
F: Academic arts information
G: All of the above
H: The WWW offers enough arts information already

12. WOULD YOU BE WILLING TO PAY FOR ACCESS TO MUSEUMS, GALLERIES, ARTIST STUDIO'S, ARTS PUBLICATIONS VIA THE WWW?
You may only select one option
A: Yes
B: No
C: Undecided
13. HOW DO YOU INTERPRET / PERCEIVE A WORK OF ART ON THE WWW?

You may only select one option

A: Like viewing the art object
B: Like watching television
C: Like looking at a magazine / book
D: Like virtual reality
E: None of the above

14. HOW DO YOU COMPARE ART EXHIBITED ON THE WWW WITH AN ACTUAL EXHIBITION?

You may only select one option

A: Viewing artwork via the WWW is like going to an exhibition
B: Viewing artwork via the WWW is not nearly as fulfilling as visiting the actual exhibition
C: You cannot compare viewing artwork via the WWW with an actual visit to an exhibition
D: No opinion
## APPENDIX B

### CHI-SQUARE ANALYSES

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Age Category by Question 13

Figure 1: Chi-Square Analysis, Age Category by Question 13
### Education

**Frequency**

**Percent**

**Row Pct**

**Col Pct**

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| **Total**      |                                           |            |                          |       |
| 136            | 18                                        | 25         | 68                       | 247   |
| 55.06          | 7.29                                      | 10.12      | 27.53                    | 100   |

**Statistics**

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**Education by Question 14**

Figure 2: Chi-Square Analysis, Education by Question 14
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<tr>
<td>Total</td>
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<td>9</td>
<td>28</td>
<td>12</td>
<td>16</td>
<td>4</td>
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#### Statistics

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Figure 3: Chi-Square Analysis, Age Category by Question 11
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