Exploring transactions: Art museums, access and the Web

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Abstract

This thesis examines the way in which art museums develop and use Web sites to promote greater access to their resources.

It does this by considering the type of transactions that occur between the museum and its visitors in the physical and virtual location. The thesis is based on an investigation of three San Francisco Bay Area art museums, (Fine Arts Museums of San Francisco, University of California Berkeley Art Museum and Pacific Film Archive and San Francisco Museum of Modern Art).

The thesis illustrates the attempts of art museums to adopt innovative approaches to the provision of access through the virtual environment of the World Wide Web.

The thesis concludes that art museums are unsure of their place in the technological foundations of the Internet. Furthermore, museums are unclear in their vision of the purpose of virtual environments. Unlike the world of education, which is familiar with the theory and practice of distance learning, and the world of private enterprise, which focuses, increasingly, on e-commerce, museums lack a singular, clear vision of how best to adapt the user-centric foundation of the Web to provide greater access to their resources. Not until art museums successfully evaluate the needs of their virtual visitors and create a transactional base that caters to those needs, will museums find their place in the Information Age.

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List of Abbreviations

BAM: University of California Berkeley Art Museum and Pacific Film Archive

FAMSF: Fine Arts Museums of San Francisco

SFMOMA: San Francisco Museum of Modern Art

Web: World Wide Web

WWW: World Wide Web

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In its "American Canvas" report (1997) the National Endowment for the Arts found that many look with suspicion at what they perceive as an intimidating and incomprehensible "arts world", whereas the Web offers them "the very attributes – participation, interactivity, collaboration – that are so conspicuously absent from the more traditional media." (Newhouse, 1998, p.267)

Introduction

The aims of the thesis

This thesis is concerned with the way art museums develop and use Web sites to promote greater access to their resources, in particular, exhibitions and collections.

The aims of the thesis are:

1. To describe the current situation with particular reference to three Bay Area art museums;
2. To examine and compare the transactions offered by these three museums in both the physical and virtual location;
3. To consider the literature in relation to the use of the World Wide Web as a means to enhance transactions between museums and their communities; and,
4. To comment on the potential of the Web as a successful interface for the museum and then to indicate both the strengths as well as the shortcomings of current practice at the three nominated Web sites.

Rationale for research

This research topic is of significance for several reasons. My first reason is based on a personal perspective, as a person who worked as a provider of education and visitor programmes in a public art museum during the 1990s. My interest in this topic stems from my experience and subsequent observation of art museum practice. Although my colleagues were aware that we worked with a collection that was principally gifted to

our community, the exhibitions were frequently chosen or curated to meet the needs and interests of curatorial or directorial staff. Exhibitions often did not reflect the interests of people in the community who were rarely, if ever, asked what they wanted to see. With respect to this example, the art museum lives out a paradox, it claims to exist for the public good, but instead, does what the staff believe is good for the public. It is not surprising, then, that the art museum has been criticized for being the bastion of a hierarchical past and present.

Purporting to contain a universal legacy, the museum is said to represent one élite (Bryson, 1997). The art museum is accused of belonging to an international history of bourgeois culture, being a complex and political instrument rather than a neutral entity, and a ritual site reflecting only the rituals of the few (Duncan, 1995). Crimp (1993) and Bryson (1997) suggested that the museum functions in a similar way to Foucault's description of modern institutions of confinement, like an asylum, clinic or prison. Its power is contained in its problematic past, when the museum was representative of the zeal of western culture to loot, to own, to display the artifacts of other's histories.

The second reason why I believe this topic is significant is because we are living in the age of a global revolution. The Internet is revolutionizing the world as we move from the age of the industrial revolution into the age of the information revolution. It is my strong belief that museums, in order to be a part of contemporary life and culture, need to be part of this transformation. Although this is not to say that they cannot survive successfully alongside the technology of the Web, numerous museums will be unaffected if they never adopt the Web into their programmes, especially those who are assured of an audience, regardless. Many of today's art museums, however, are managing to metamorphose in a world of changing technologies, combined with an internal drive and externally caused necessity to exist in an environment of competing forces of recreation, and changing expectations, on behalf of visitors and potential visitors.

In this thesis, my aim is to explore whether or not the art museum, as it has been attempting to move away from its image of élitism, has provided to a wider public greater access to itself through the use of the Internet as it navigates a path into the digital age. There is no argument that the art museum in general has taken great strides

to make itself a more user friendly place, and to eradicate the critical judgments still being laid upon it, even as late as the close of the twentieth century, and continuing into the twenty-first. As I mentioned above, it may be that it still reflects much of the élitist position it has both exuded and had cast upon it. However, many art museums have at least endeavoured to veer away from this unhappy distinction, and make themselves more accessible, enjoyable places for visitors, and viable recreational centers within their communities, by adding value to the visitors' experience through a range of visitor programmes.

There are several reasons why I have chosen to compare the physical museum with the virtual museum. Firstly because I consider the Web site to be a continuum of the innovative interpretive practices already in place in the art museum, such as extended labels, catalogues and videos. Secondly, I believe that it could become a stand-alone entity, providing all that the museum does and does not do in the physical space, unlike the other interpretive mechanisms, such as a catalogue. Thirdly, because the Web site is a multimedia environment it becomes an aggregation of the other interpretive practices that are already available.

Taking into consideration that the museum is providing greater access by introducing new programmes to make visits to the art museum more appealing for all visitors, (and to draw in potential and non-visitors), I have introduced a term for these functions, now practiced in the museum and on the Web, and called them *transactions.* For the purpose of this investigation, I have produced a definition of transaction that is: *a communicative action or activity between two parties or things that reciprocally affect or influence each other.* In order to answer my question, I explore the transactions that are provided on the physical and virtual sites of the Fine Arts Museums of San Francisco (FAMSF) and the University of California Berkeley Art Museum [and Pacific Film Archive] (BAM) and the San Francisco Museum of Modern Art (SFMOMA).

Thirdly, this topic is significant because after years of learning to supply access through transactions in the physical spaces, museums now have the opportunity to do the same thing online. We do not know yet if access, in whatever form, is being achieved successfully on the World Wide Web, and many questions arise when contemplating the notion of online access to a museum's resources. For instance, a museum may be

placing all of its collection online, but in what form, for whom, and what value do the recipients get out of it? As Donovan (1997) stated, access alone is not really enough, museums need to add value, to entertain, to supply information. Others such as Marable (1999) and Hermann (1999) discussed their emphasis on storytelling, something they both consider that museums, which hold collections with many stories to tell, should be using the Web for. Keene (1997) was aware that museums have defended their existence by claiming that museums preserve collections for the benefit of future generations, and now on the Web museums have the opportunity to show how they can communicate these benefits. The Web is important and so is the museum's use of it, but are museums aware of and responding to what their visitors want, now that the tools are available to provide transactions in the digital age?

The structure of the thesis

In Chapter One, Access and new technologies, I first discuss the notion of access and its history in the museum, followed by an examination of the introduction of new technologies into the art museum environment, and the changes this is bringing about. Although earlier technologies known as multimedia are briefly mentioned, the concentration in this thesis is on digital technology in the form of the Internet's graphical interface, the World Wide Web (the Web). I also introduce advantages and disadvantages that arise for museums when using a Web site.

In Chapter Two, I outline the definition of the term transaction, and describe how it is used in this thesis. I explain the meaning of the different parts of the definition, and describe the different forms of transaction that can take place in the art museum, both in the physical and virtual sites. I also include a discussion of the factors that can affect transactions, such as the control of the museum over material provided and the spatial settings. The transactions that are supplied in the physical museums are described in Appendix B, and in Chapter Three, I explore the different transactions that take place on the Web sites of the three museums. The World Wide Web case studies are preceded by a short discussion of the transactions that might be included on a Web site, and in addition, I ask what should be included. The case studies are accompanied by excerpts from extensive interviews with staff involved in the creation and production of the Web sites at each museum. The case study information mostly draws on the prominent

features of each of the Web sites, those that are exclusive to each site, as well as content that differs between sites.

In the Analysis in Chapter Four, I begin by asking why the Web can do what it does, and introduce the notion of value-adding on the Web. I then compare and contrast the transactions in the three art museums with the transactions on the Web sites, followed by comparing and contrasting the transactions across all of the museum Web sites. I determine what transactions are offered in each space, what are unique to the different sites, and assess the ways that visitors are provided with greater access to the museum's resources on either type of site. By doing this, I am able to make conclusions in Chapter Five about how and what transactions on the Web are able to provide greater access to the museum's resources. Transactions that do this may be either those that are similar to what is provided in the physical space, therefore providing a continuum of innovations and practices that already occur in the physical museum, or those that are new and different therefore providing innovations only accessed through the Web site.

The methodology

The methodology I used to assist me to write this paper was to conduct interviews with museum staff closely involved with the production of the museum Web sites. In addition to this, I made frequent visits to the physical and virtual sites of each museum to assess both their contents and my experiences as a visitor, and reviewed a great amount of the recent literature on museums and the Web. There are some limitations in my research, being that if I had surveyed visitors to the Web sites this would have assisted me to better answer who is visiting the sites, what they are looking for and whether visitors are getting what they want. As always in the museum field, it would also have assisted me had I been able to survey the non-visitors to the Web sites, and both surveys may have helped the respective museums to make adjustments accordingly. I consider such qualitative research to be the next step in this investigative process for these museums and an important responsibility that these institutions should be considering in the near future.

I would have liked to make more comparisons with a wider range of museum Web sites, but this type of research is for another study with larger scope. Another limitation to my

research was caused by the technology itself. During the period of my study, one of the museums has been creating its new Web site, which is now a year behind the scheduled unveiling. Due to staff changes, the site has altered considerably, thus demonstrating that with this new technology nothing is static. Therefore, either subtle or large changes have been made to sites since my assessments of them during 1998-9. The sites that are discussed in this thesis may not exist at all within the next year, unlike their physical representations. Additionally, the transactions that I state the Web sites are not providing, or cannot provide, now, may be included online within the next six months.

The capabilities and changes that this new Information Technology offers also expose the limitations that my research reveals about the use of such new technology by museums. In the three cases that I observed, the staff is working in a very new field. Having only recently come to terms with how to provide successful visitor transactions inside the museum, they are still discovering the best ways to provide access through their Web sites. The museums are concentrating on how to provide access to resource material. Some access is far too textual for the Web, other material is not interactive enough, and some consists of too much data, lacking the transformation into valuable information through the stories that the data could yield. One museum is working on its fourth site, still attempting to 'get it right' as the staff now believes it understands just what the visitors want.

I state that the museum's use of the Web is important, therefore, why does the Web offer special opportunities for museums? The museum Web site can be accessed all day long, therefore providing its museum with extended opening hours for certain functions. Due to my proximity to computers, the Web gives the museum the opportunity to inform me, as an avid visitor to art museums, of present and forthcoming exhibitions and associated events, in a format that is easy to access and navigate. It is also useful as an information tool to guide me through an exhibition, thus assisting me to arrive at the museum feeling confident and prepared. On the occasions that I visit with others, I am able to give adequate information about the exhibition, all obtained from the Web site beforehand.

The Web also provides the opportunity for museums to use an infinite space and place much of their collections, as well as associated contextual information, online for

researching or exploring. The museum now has a way of combining the physical and virtual spaces to provide an overall picture of its permanent and temporary holdings. Objects are important in the physical space, and their stories can be made important in the virtual. The question here is whether or not all museums with Web sites are attempting to provide those stories. It seems that they are not all adopting the opportunity to do so. Perhaps it is less time consuming to place images and data online than to research and add their stories, or perhaps museums have not had enough time to perceive what the Web can do for them.

The Web offers the opportunity for museums to reach out globally and bring in new audiences, firstly as virtual visitors, and potentially, later as physical visitors to the museum itself. The museum may now reach out to them through information, by providing the context that brings the visitors in to see the content (Capucci, 1997).

All of these museums seem to have taken ad hoc approaches to the use of the Web, eagerly adopting it into their programmes but without real policy, and still without having ventured to find out what their virtual visitors want. Several opportunities are also being missed by them, such as collaborations between art educators and schools, and between museums. They have most definitely attempted to provide the same production values as those found in the museum, but have not ventured to assess whether or not the content provided is what visitors are looking for. Another limitation is on the type of visitor. If museums are using the Web to attract visitors, there is no evidence to say that they will be, or are, receiving a different visitor, and thus catering to a more diverse audience, than the one in the physical museum.

These, and many other issues arose as I studied transactions provided at these art museums both on the Web and in their physical spaces. It is understandable that art museums should want to adopt such technology, and as MacDonald and Alsford (1991) indicated, it would be foolish and detrimental not to join the technological information age. But for what purpose? Are the museums using the Web to provide the same types of transactions provided in their physical premises, or is it an avenue through which museums may continue their willingness to change, and thus to provide further innovative transactions on the Web?

I believe that this research topic is significant because museums have had to change, but have had to find new avenues through which to make their changes. Now, as the greatest revolution since the industrial revolution, the information revolution, occurs, museums have the opportunity to take a new role within society, that of a place of access in cyberspace. But it is not just an open door that they provide any longer, it is the opportunity to add more value to what they offer in the physical space. By this I mean using the digital technology to provide more information, a context, the story that exists behind what is prized in the collections – the object. As the world is revolutionized by the Internet, so too can the museum be, if it learns how to use this new access tool in effective and creative ways.

By assessing the types of transactions supplied on the museum Web sites, and how successful they are, I am able to come to several conclusions about the provision of access through the museum's Web site. I find that the new technology, when used as a learning tool without a holistic perspective of the needs and requirements of visitors, although providing a global presence for the museum and greater access to its resources, is not necessarily providing greater access, in all ways, to virtual visitors.

Chapter One

Access and new technologies

The aim of this chapter is to explore how digital technology, primarily the World Wide Web (Web), has changed access to the museum and its collection. In my discussion I will establish the lead-up to the use of the World Wide Web by museums, by reviewing the means of access in use in art museums, and reviewing the introduction of technology and the subsequent move to the Web, and issues that have arisen as the museum has had to become a provider in the face of challenges of accountability.

Establishing the Lead-Up to the Use of the World Wide Web

In this section, I briefly explore the lack of access to the museum in the past, and give examples of the types of transactions that have been introduced to provide access. Issues that are important to this discussion are that the museum is a provider of such things as objects and information, yet it has had a history of not always fulfilling its function and providing the latter. The museum has had to recognise its role as a provider and de-conceal itself to meet with the demands of modern times by providing creative forms of access to remain in existence. The World Wide Web, preceded by multimedia, has played a very recent role in assisting visitors by providing another form of access to what the museum has to offer.

Providers and gatherers

Bowen, Bennett, and Johnson (1998) refer to museums as information providers that draw on and interpret the collections for visitors. School students, the general public, tourists, scholars, etc., are information gatherers who potentially visit the providers. Now that museums are on the Web, these gatherers can visit them from outside of the museum. Instinctively we might say that all people have the right to be gatherers of information from the museum, but that 'right' has not always been distributed on an equal basis by the providers, particularly art museums, both historically, and occasionally today. Education or interpretive programmes are a relatively new phenomenon, and although mostly successful, in some instances when information is available, it is not always provided in a form accessible to everyone. For example, an

explanatory panel may be written in "art-historians' speak," unintelligible to an average reader inexperienced with the lexicon of art history.

Museums learn to 'de-conceal'.

I may appear to contradict this stereotype of a provider as a non-provider when I state that the museum in the past viewed its very existence as 'educational'. This thinking was based on the assumption that they existed for the good of the community, and that the public, especially the working classes, when they were permitted to visit, would gain knowledge through the experience of encountering and viewing unique and unusual objects. However, museums still retained the power over what was made available to the public, and when it was available. For information on the history and nature of the museum, see Hooper-Greenhill (1992) and Wittlin (1970). Peter Samis (1995) offers an answer to this dilemma, which he calls "de-concealing", when he discusses the new challenges of accountability facing museums that are said to be dedicated to the public good. In his article, he shares what he refers to as "radical tenets", a list of negative realities about heritage institutions. These negative realities are that: museums contain, imply, or conceal more than they reveal; a collection is not self explanatory and access to it does not give access to its meanings; and artifacts tend to be culturally specific, while audiences are very diverse (p.25). Museums, on the whole, have acknowledged these negative factors, and interpretation programmes are now provided to help to 'de-conceal' the museum. Administered by education or visitor programmes staff, these programmes have evolved because most museums concluded that they would not be able to keep operating solely on the basis of the traditional collection-curator model. Collecting, preserving and researching objects, while providing little or no methods of interpretation for the public outside of the curator's exhibitions of objects, (a negative reality), would not help to retain visitors who were seeking a new experience (Weil, 1997, p.265). There do exist, however, art museums that, due to the fame, nature and vastness of the collections, are assured of such a large audience everyday that interpretation programmes make little difference to the image of the institution, (yet they do make a difference to the visitors' experience). Examples of such art museums include the Metropolitan Museum of Art and the Museum of Modern Art in New York; the National Gallery of Art and the Hirshhorn Museum and Sculpture Garden in Washington D.C.; and the Louvre and Musée d'Orsay in Paris.

The museum as a place for recreation

Besides those institutions with a guaranteed visitor base, art museums today are well aware that there are many places, including other museums, competing with them for the spare recreation hours and dollars of the public, and that the potential visitor is now looking for something more than a passive experience through room after room of displays. This is an expectation of the public that has moved across the spectrum of museums. Art museums have worked at different speeds to open themselves up to provide new services, and therefore a more fulfilling transaction. Changes are widely recognised, both within the profession and by critical outside observers such as the popular press: "Today's museum aims both to entertain audiences with splendid promenade spaces, stylish restaurants, upscale shopping and blockbuster exhibitions, all of which combine to fulfill Situationist theorist Guy Debord's ideas about the society of the spectacle, and to upgrade its education programmes and community outreach. Richard Rogers and Renzo Piano, architects of Paris' Pompidou Center, which initiated the latest phase of museum transformation when it opened in 1977, called their building "a live center of information and entertainment". Museums now try to be all things to all people, and skyrocketing attendance figures - more Americans visit museums than sports events - testify to the fact that they must be doing something right." (Bonetti, 1999, p. C-7).

Kenneth Hudson (1987) stated that museums must give visitors confidence by supplying information programmes. He expressed doubt that very large or the very small museums could do this, however, in contrast to his opinions at that time, size of museum has not been a factor in providing access. Although access to funds can make a difference concerning whether a project is carried out, and smaller museums may have access to lesser funds, this change has rested more on the will and foresight of staff, at times combined with a desperate need to change.

What Are Museums Doing to Provide Access?

Introduction of interpretation programmes

To provide access, museums have developed a variety of transactions in the form of interpretation programmes inside and outside of the museum. Today, a range of generic interpretative strategies is being used across the field of museums, to provide access to

the collections. Some examples of these are: free tours by docents or staff are offered regularly; exhibit labels are extended to supply additional information about a whole exhibition or an individual object; flyers and brochures are supplied in galleries; theatre and music are performed to provide a context for exhibits; catalogues are produced; artists are brought in to talk about their work; lectures and symposia are scheduled; interactive push-button technology and computers are made available to provide additional information in the gallery spaces. In her paper, Teather (1998) expanded on these many forms of interpretive methods that assist access, and what museums are attempting to do, including outreach programmes. She also explained that there are several ways to discuss access, for instance by noting who does come to the museum, the type of information provided for them while they are there, and by viewing the whole museum and whether or not it is successful in communicating its messages to visitors. In addition to these methods, the art museum now permeates its walls by encouraging access through its Web site.

The museum has improved its reputation with the public

Still respected, perhaps revered, and frequently considered a place of mystery by the public, the museum has successfully provided greater access to itself, and gained a new found status as a place of recreation, indicated by increases in visitor numbers over the last decade. It is now somewhere to go in a person's spare time, alone or in the company of friends, to look, to enjoy, to be entertained, to learn. As the art museum has created a higher profile, it is clearer now in the public mind that they too may have a stake in their city or country's art collection, that they have the right to partake in the pastimes once reserved for the wealthy and élite. This is not to say that the museum, and in particular the art museum, has shed its connection to power, but rather that it has changed its image in the public's minds and eyes. Although no doubt biased in favour of museums, a recent article by Glenn Lowry (1999) the director of the Museum of Modern Art in New York, confirmed the newfound popularity of the museum in modern times. He makes a significant point that the public still go to the art museum to view objects, even in this age of a preoccupation with what he refers to as the 'ephemeral nature' of virtual reality. Lowry (1999) also stated that many museums are amongst the most important buildings in their communities, [as the SFMOMA has quickly become]. Lowry (1999) confirmed "Once seen as élite, these institutions enjoy broad popular appeal, diverse audiences and a substantial amount of private as well as

public support... What is certain though, is that museums provide a distinct kind of public space. This space, created by the relationship between the works of art on display, the architecture and the intellectual agenda of the museum, and the needs and interests of the public, is both an enriching educational environment and an important social one" (p. 1). Some of the factors that Lowry (1999) listed, such as distinct kind of public space, intellectual agenda, and enriching educational environment, are also integral to the Web site, having become a continuum of what the museum is providing for its visitors in the physical space.

Technology

Technology provides access in the Museum

Amongst the transactions introduced in the discussion above, media devices have been popular in museums, assisting them to provide a less passive experience and be more informative and user friendly, for over thirty years (Jones-Garmil, 1997, a). Forms of multimedia make it possible to push a button and hear a recorded folk tale of the people who are represented by the art works on exhibition. A slide programme, or video monitors, may have been strategically placed in corners of galleries to play programmes that help to elucidate an exhibit. Multimedia in the art museum facilitates multi-disciplinary learning in a casual setting. Technology, as an informal learning tool, is able to inform us, to answer our questions during the opening hours at our own pace. The newest advance in technology, the World Wide Web, assists us in both similar and different ways, but at any time.

Moving forward to provide greater access, museums have been adopting technology both within, and linked to, the physical space. Samis (1995) posits that new information technologies such as the Web can change the negative realities of the museum, and supports this with a discussion of the successes of information technology projects, (Web and CD-ROM based), at four California heritage institutions: The Exploratorium, SFMOMA, San Francisco Public Library and the Monterey Bay Aquarium. As Samis (1995) states, such information and telecommunications technologies provide both interpretive and contextualizing tools on the premises, as well as remote virtual access to information and collections. The latter is especially convenient for virtual visitors who may never enter the actual museum (p. 25).

Going digital

As museums have striven to meet the demands of the 21st century, some have been part of a group of museums and museum organisations who have lead the way in the use of new technological innovations by going "digital" and finding a place on the World Wide Web (see Jones-Garmil, 1997, a, pp. 50-51, for a timeline that overviews this move to the Web). Johnathan Bowen (1995) wrote that more than one museum a day places a site on the World Wide Web. Yet, even though there has been significant work by museums in this area, the majority of museums, especially smaller and non-American, are not on-line due to financial and technological obstacles, according to Bowen (1999). Besides this, the move to the digital has become an important new function for many museums around the world.

Digital access to museums has been fast developing, but what does it really mean when we refer to a museum as being digital? Suzanne Keene (1997) described the difference between the 'actual' and the 'physical' by saying that the digital museum is the same, except everything about it is virtual (p. 299). The real collection object does not disappear, it gets transformed into an image copy, and although it becomes accessible in both spaces, (when made available in both), it still only 'exists' in the 'actual' or 'physical' space. Being digital also raises new issues for museums, not the least of which is that of the primacy of information over the object, which intersects with the issue of the supply of data over information. Lowry (1999) contended that in this era of virtuality, the object is still drawing visitors to the museum, and there is presently no evidence that visitors prefer seeing objects virtually. Is the museum Web site more suited to sharing information, and if so, in what form?

Data or information

With the rise in adoption of digital technology, suddenly almost everything seems possible: museums can store as much data and information as they want in the unlimited 'space' of the Internet. But in what way is information different from data? Hermann (1997) explained that: "Where a data processing system provides facts, an information system answers questions. Information is contextual; it lets us see the broader picture. Where a catalogue record in a data processing system might tell us the name of an object, its maker, and the time period, an information system will let us ask questions

such as: "What can you tell me about where this comes from?"...Information systems define relationships: "What other things are like this?"..." (p. 69). As an example of the difference between data and information, we can compare what we find on the FAMSF and SFMOMA sites. For instance, the Art ImageBase, (which is primarily an image base (based on images) rather than database (based on text)), on the FAMSF site supplies an image (many of which have an extra 'zoom' feature) and typical collection database information, such as a 'keyword' search, rather than an art historical essay. On the new SFMOMA site, images of permanent collection items are accompanied by information, (rather than collection data), such as a short essay about both artist and the work, written in a user-friendly non-academic style.

Museum Web sites provide data and information, and as digital sites, they have the opportunity to utilise the storytelling possibilities of the museum by combining them with the storytelling capabilities of the Web. For a discussion on this subject, see Ferren (1996), Marable (1999) and Hermann (1999). Information, narrative, storytelling, all of which have been emphasised by educators within the physical museum over the last ten to fifteen years, have become important interpretation devices on the Web, especially to those who see the Web primarily as an information resource. Dietz (1999) questioned whether or not the public can find meaning or value in online databases, and asked if this is what the public is looking for? Preferring information to data, he queried how such information can be made compelling, and warned that when it is provided it should be in the form of many voices rather than the "monological voice" of the museum. Hermann (1999) also critically questioned the value of placing whole collections on line, suggesting that the Web is the greatest storytelling medium ever invented, that museums tell stories, therefore the Web must be the greatest medium ever invented for museums. Like Marable (1999) also, Hermann (1999) is interested in using Web-based narratives to create compelling museum experiences to reach audiences, and believes that at present the most interesting examples of this work are being created on non-museum Web sites.

Besides providing access via a new form of online interpretation, the Web also answers and influences another shift by humankind, the desire for information. The collecting object will always be at the heart of the art museum's reason for existence, and the main reason why we visit the museum. Presently the Web is where people pursue their new

desire for information and it is an ideal place for contextual histories. A current example of this are the artists' interviews on the FAMSF site in conjunction with a temporary exhibition (FAMSF, a).

MacDonald and Alsford (1991) wrote what seemed to be a warning to the museum world, that the museum must keep astride of modern day issues, changes and challenges; that it existed to serve society by helping to provide the knowledge necessary to move ahead; and that it was more important than ever before that museums responded to those needs, or it would become redundant. They intimated that dissemination would be achieved by creating access to information, but that this would only be successful if the museum understood its audiences' needs, and made the shift to thinking of the primary resource as information rather than the object. "... it positions museums nicely to play a key role in the new age, in which information-based services are expected to be a key to economic prosperity and to social status - two things necessary in the real world, to museums to ensure their effectiveness, if not their survival" (MacDonald & Alsford, 1991, p.303). It now seems, as more museums place themselves on the Web, that this 'warning' has been heeded.

While museums have been concentrating on providing more information, (in its different forms), there are no studies that indicate that the physical museum has made a shift away from the object as its primary resource. It may be that museums are moving in the direction of providing one space, the physical, for the object, and the other, the virtual, for information dissemination.

Times have changed and people have adapted. If access to collections and related information is now made easier by the Web, then that is the best place to find it, rather than making an appointment to visit the art museum library during its short hours of operation. Out-dated attitudes of staff have had to alter, information has to be shared and no longer preserved in locked cases, available to a few. However, it remains questionable as to who controls the amount and content of the information that is made available, as discussed in Chapter Two in the discussion of power and controls.

Advantages

There are many advantages for museums that choose to present themselves on the Web. Large art museums such as the Dallas Museum of Art were amongst the first in the U.S.A. to create Web sites and make a wide range of transactions, such as access to their collections, available on the Internet. The notion of 'museum' is radically changing as the institution opens itself up, or 'de-conceals' by supplying more information in new interactive ways. For the first time ever, the museum can be accessed 24 hours a day, by visitors who need never set foot inside its doors, and by anyone anywhere in the world with access to the right equipment.

More space

Access via the Web and the capacity for space that the Internet provides, enables the museum to supply whatever it wishes to, within the limits of the medium, to its online visitors. When a museum houses a collection with exhibition space requirements 20 times larger than its physical capacity, then the Web becomes a convenient place where 'space' knows no boundaries, surrogates of the collection can be placed on the Web site for all to view. By existing on the Web, the museum can now come to the user, provider to gatherer. An example of this, the Museum of Paleontology, supplies an accessible and informative Web site, but in reality, it is a small, restricted access museum on the University of California, Berkeley, campus.

Technology takes the museum outside its walls

Malraux (1978) first wrote of the museum without walls fifty years ago, now the walls have been brought down again, in a metaphorical way, by new reproductive technology that enables a virtual experience. Malraux (1978) supported the reproduction of art, believing that great art transcended its context and that reproduction helped educate people about art. It is likely that Malraux (1978) would have endorsed the Internet as the "true museum without walls" (Newhouse, 1998, p. 265).

The Web may allow a virtual visitor to exclude a visit to the museum altogether or it may facilitate access. By placing information online, museums encourage a visit to the museum combined with a newfound competence, to arrive with prior knowledge and a

better understanding, providing the 'confidence' that Hudson (1987) felt the museum needed to give to its visitors when writing in the 1980s.

Attracts new audiences

When the museum profession talks about access, as Teather (1998) suggests, they also include the need to get new audiences through the museum doors. Visitor numbers have become more important to museums and stakeholders in recent times - sponsors are unlikely to fund a museum that has no visitors. The Web site may raise visitor statistics by encouraging more visits, but presently it is debatable whether or not 'hits', (visits), on the Web site will be incorporated into the numbers calculation. According to his recent article in *The New York Times*, Steven Madoff (1999) confirmed that the Internet is of great value to museums. He quotes the high number of hits by what he calls 'art aficionados' on the New York Museum of Modern Art's (MOMA) site, approaching the number of visitors to the museum. What he could not know, unless he had tracked all the hits, is whether or not the visitors really are 'art aficionados', and how long they stayed at the site. Unless these 'hits' are properly evaluated by the museum, they may become less meaningful and unlikely to be included in the museum numbers count. The MOMA has a very high profile, which may as a matter of course have an equally high profile on the Web. Virtual visitors are likely to visit the big name art museums, but what of all the other museums available on the Web? There are no wide ranging survey figures to compare either the correlation of actual to virtual visits to a wide range of museums of differing profiles, or the benefits museums get from hits to the Web site.

What we do know about hits to the Web site is that by logging on they allow virtual visitors to take the transactions offered in the physical museum and develope them further. Ruth Perlin (1998) stated that visitors are able to virtually explore the context of a work of art, thus, along with the expansion of audiences, Information Technology provides the answers to our questions about the object, exhibition and other functions in the museum. Museums place collections on-line, virtual museums are created, exhibitions are recreated on the Web and remain there long after they have been taken down in the actual museum. Daily, weekly, monthly and yearly schedules are provided, so that on any day an on-line visitor can see what is happening at the physical site that afternoon, next week or next month. Education programmes are provided, so that anyone, not only teachers, may have access to interpretive information that they would

not generally find in the museum. This information is distributed globally, wherever the information superhighway goes, the Web site follows, unlike the physical museum, which remains in one place. Works that are protected, fragile pieces, that cannot be displayed in the physical museum are accessible on the Web, therefore it can assist with conservation. For many works that cannot be over-handled, the Web has become a modern preservation tool, allowing viewing and analysis without the object ever being removed from storage. Placing images on-line is similar to images being accessible in catalogues, the difference being that it can be cheaper and easier to 'log-on' and download rather than purchase a catalogue or seek it out through the local library. Secondly, viewing the images on-line can assist one to decide whether or not to purchase a catalogue.

Like museums, and as an extension of them, no two museum Web sites are the same. They offer different combinations of transactions on-line, whether they view themselves as primarily providing a museum information calendar, a virtual museum, a collection database or a forum where curators and on-line visitors can meet. Many Web sites offer a new transaction each time a visitor logs on, others can be slow to update or keep up with what the technology offers..

New types of transactions

Now the notion of access combined with the use of digital technology means there are new ways of experiencing familiar transactions. A transaction does not always take place inside the museum's walls as a two-way transaction, but frequently as a one way, museum to visitor transaction, and the same occurs on the Web site. A presence on the Web also means changes in the (experience of) transaction the visitor has with the museum. For instance, many of our transactions in the museum are social, we talk, we visit with others, or we visit alone and have a more meditative experience. Art is usually exhibited in a certain order and most of the time we comply by following the sequence. The experience is primarily social, our transactions take place with the 'real', and we abide by museum guidelines.

When we transact with the museum by computer we are generally acting alone, (although a new study discussed by Chadwick and Boverie (1999) indicated that even though the majority of Web visitors do visit alone, 30% of the respondents visited in

groups), and the transaction becomes a virtual experience. We are now a human interacting solely with a machine, albeit, in order for the machine to respond, other humans - museum staff and contractors - have had to supply the information. The museum-visitor experience has changed radically, as these new options have opened up to us. To use a comparative example, Bandini (1998) explains that with the arrival of new technologies banking has quickly advanced from a face to face, human to human transaction to now being human to machine. In the case of both types of institutions, it is, at present, still possible to go to the physical site and experience the real. Museums, however, have been making the same sorts of changes as private enterprise institutions and are now offering many transactions by machine. Some of these include: purchases from the museum store, communication with staff, booking entry and events' tickets, and setting up a membership subscription.

The Web site provides a continuum

The Web site can be a tool for providing transactions that are not provided in the museum, but it can also replicate and expand what is provided. This type of continuum of innovative practices is demonstrated as the Web site becomes another learning tool, fulfilling some of the functions of informal learning in the museum. Both the physical and virtual museums are ideal places for humans to fulfill their desire for lifelong learning. Museums have transformed from being static storehouses to active learning environments, and the latter has been assisted by integrating the Web site into its functions as a site for free choice learning.

Although the Web site cannot provide the original object, therefore providing firsthand experiences, it can utilise principles of interpretation to make sure that online exhibits and programmes "develop deeper understanding; relate information to the audience; capture attention and make a point; provoke the visitor to further study; are pleasurable, organized and have a theme" (Campbell and Wells, 1996, p. 218). If staff is able to put in the time, interpretation on the Web site can be highly successful for the virtual visitor.

Hooper-Greenhill (1994, a) discussed three modes of informal learning styles that fit into the museum experience, they are symbolic (through language), iconic (through images) and enactive (through objects, people, events, activities) (pp. 144-169).

Museums are able to utilise all of these modes in different ways, but the Web provides mainly symbolic and iconic learning experiences. Due to the nature of the technology, for instance, unable to provide hands-on practical activities the way they are provided in the museum, it is harder for the Web to exploit the enactive mode of learning. However, there are some Web features that are almost enactive in style, and the SFMOMA has utilised these features successfully in conjunction with some larger exhibitions. As an example, the Bill Viola Web feature (SFMOMA, a) was added to the front page of the SFMOMA Web site to coincide with the Bill Viola exhibition from June to September 1999, and is a good example of a method that provides a creative opportunity for Web-based informal learning. This example, which includes mostly iconic and some partially enactive features through the use of video, provides all the additional interpretation for the exhibition, while the museum provides some, but of a different nature. It also demonstrates how visitor confidence can be gained, by providing them with a considerable amount of information prior to their visit. For any visitor unfamiliar with Viola's work and, perhaps, who lacks the ability to read meaning from contemporary art installations, the exhibition could remain meaningless without viewing the Web feature, either before or after a visit. This feature makes it possible to gain an understanding of the artist's intentions, and the meaning behind the works will then manifest itself. (See Appendix C for a short description of this Web feature).

This mechanism of informal learning far surpasses the type of information a museum visitor will find in the museum, (besides seeing the actual works of art), unless they specifically time their visit to coincide with a tour or artist's talk linked to the exhibit. Even then, a substantial amount of the background material supplied in such a Web feature is often unavailable in the museum. In his paper Samis (1995) states, "The stories, or paths of access [to works of art] that museums unwittingly conceal, are legion"(p. 30). Now, in addition to in-house interpretation programmes, the Internet has become the interpretation conduit that takes museum content outside of the museum to wherever the on-line visitor may be.

Disadvantages

Museums must understand the needs of visitors

When writing about the use of multimedia in the museum, Selma Thomas (1998) demonstrated that in order to become successful learning tools, multimedia must meet and understand the needs of the audience. The same applies to the museum's Web site, whatever its purpose. One would assume that the museum supplies information on the Web site in order to meet a demand, yet there is little evidence to show that it is aware of what the demand is. There has been criticism that museums initially took up the World Wide Web without really knowing what they wanted to do with it, or what visitors wanted from the Web site (Sherwood, 1997). Examples of this situation are the three case studies, none of which surveyed what virtual visitors wanted prior to producing Web sites, and they have never evaluated the sites to ascertain whether or not they are meeting visitors' needs or wants. This is not so much a disadvantage of the Web, but a disadvantage within the physical museum combined with its desire to utilise the new tools, and secondly, that staffing, economics and time may not always allow for evaluation of visitors' needs before programmes are created.

Non-captive audiences

Campbell and Wells (1996) listed the shared characteristics of both the visitors to museums and users of the Internet whom they refer to as 'non-captive' audiences. They explain that interpretive principles (p. 218) are important, because if visitors become bored in traditional settings, they will move to another exhibit, and on the Internet, they can click on a hotlink to another Web site. This situation demonstrates a greater disadvantage on the Web, for when a visitor is bored in the physical setting he or she is more likely to remain in the museum, (having paid a fee and made the effort to get there they may want value for money), moving to another room (as Campbell and Wells suggest), or to the café or shop. The visitor to the Web site, however, has little inducement to stay, and is therefore far more likely to leave the site if they are not satisfied. Thus, I would claim that the museum visitor is less of a non-captive visitor than the Web visitor, who makes less effort to get there and therefore has no difficulty in leaving.

Since first providing interpretive programming, the museum has continued to make itself available to any visitor who is interested, or potentially interested in its contents through such programmes, and now it is accessible on the World Wide Web. It is important to keep in mind that not everyone has access to this new form of outreach. This disadvantage of technology, the outcome of which is similar to what occurs in the physical art museum, is that it experiences marginalization between itself and its potential users and audiences.

Marginalization

William J Mitchell (1995) discussed the predicament that technology is not for everyone, and wondered if the fast lanes of the information superhighway will serve only the affluent and powerful, while rural communities miss out, and economically marginalized neighbourhoods get no telecommunications investment. Distance can be a problem getting to the museum, and it can now be a problem for those unable to access bandwidth, as Mitchell (1995) stated, it has become increasingly important that people are connected to high-bandwidth. "The bandwidth-disadvantaged are the new have-nots. It is simple; if you cannot get bits on and off in sufficient quantity, you cannot directly benefit from the Net.... No network connection at all - zero bandwidth- makes you a digital hermit, an outcast from cyberspace. The Net creates new opportunities, but exclusion from it becomes a new form of marginalization" (Mitchell, 1995, pp. 17-18). This is a crucial issue for all areas of society right now, including art museums that are concerned about enlarging the audience. With regard to the topic of this thesis, it must be kept in mind that although I am focusing on a new form of access, digital access, it, just like access to the art museum, is not evenly distributed to all publics. There is still a certain percentage of the population who will not be able to visit the art museum via the Web. Many of those, due to a variety of factors such as distance and economics, may presently be non-, or potential, visitors, and thus the Web site will not become a tool that encourages them to visit or provides them with further learning experiences.

Another form of marginalization that exists is one that the physical museum has been working with inside its walls, and it is the provision of access to younger audiences. There are many children who have access to the technology and the Internet either at home or through school, but they may frequently find that museums do not make them feel welcome because they omit to include appropriately targeted material on the Web

sites. Many museum Web sites, as is apparent in two of the case studies, are aimed solely at the adult visitor, and the potential to use the Web to encourage a younger audience is ignored.

New concerns

Besides these disadvantages, access to the museum has been expanded through digital technology, and there is much praise from inside and outside of the profession for the way art museums are using the Web. Because of the success of the Web, some may express concerns that as the information revolution accelerates, people will lose their special relationship with the physical environment, with the museum or even the original work of art, a factor that could be damaging for the museum. "Thus, we might claim that in a remarkably short span of time, people have shifted from an interaction involving social skills within quality spaces at given times, to one that can be made at any location, at whatever time, and allows individuals to be totally oblivious to their material surroundings. Is Western society inadvertently sliding into cultural patterns that make us less and less dependent on the physical environment for the necessities of daily life?" (Bandini, 1998, pp. 214-215). Will the museum fall victim to the attraction of the Web, and will the physical site become redundant? (Besser, 1997, b). As yet, there is no documented evidence to support either outcome. In fact, according to the museum staff interviewed for the case studies, the general feeling in the museum community and the media is that the opposite is true, that the Web site entices visitors to the museum to see the real thing.

Walter Benjamin (1969) expressed his concerns about the loss of interest in the original, or the unique, when writing about changes brought about by the mechanical reproduction of works of art. Benjamin (1969) speculated on the decay of the aura of the original object. This concern was expressed as an outcome of the public's acceptance of widely available reproductions due to its desire to get nearer to the original work of art. Benjamin (1969) was also aware of how the reproduction of art could set it free it from its "parasitical dependence on ritual" (p. 226). With the advent of the graphical environment of the Web, the virtual museum can free art from the 'prison' of the physical art museum, and make it available for everyone to view and experience (or utilize).

Thus far, concerns expressed by Benjamin (1969) about copies have proved unfounded, as numbers of visitors to art museums have risen over the years, while more and more reproductions have become available. This has occurred as the wider public have felt newly accepted as visitors, and through their exposure to the copies have in fact developed a desire to see the originals. Mechanical reproduction has simultaneously democratised access to works of art and other forms of information. Now, at the turn of the century, as the most recent global form of mechanical reproduction thrives, many museum professionals take the opposite stand to that of Benjamin (1969). They consider that by viewing a copy on the Web, people develope a desire to see the real and to partake in the enjoyment of its aura, which it never loses.

In conclusion

In this chapter I have examined the move from non-provider to provider by the museum, assisted by the development of interpretive programmes followed by the adoption of technology into the museum's functions. I briefly introduced what the museum's Web site is able to do, and followed this with a discussion of some issues that arise for museums when utilising the Web, including the advantages and disadvantages that I have identified so far. In the following chapter, I will introduce a definition of the term transaction and explore how the word can be used in relation to my discussion of the three case study museums.

Chapter Two

Transactions

In this chapter, my discussion focuses on a definition and explanation of the term *transaction*. I introduce and compare the many transactions that are now possible in either space, and the factors that influence them, such as the power, control, architecture and space of either the physical or virtual museum site. By introducing the use of the word *transaction* and defining its meaning, I am able to examine the different transactions, both old and new, that exist in each space, and the affects they have on the relationship between the museum and its visitors.

A willingness to change.

The museum today is changing, as staffs attempt to provide new and meaningful experiences in the setting of cyberspace. The modern day art museum has had to keep up with contemporary expectations, as simultaneously the demand for more information and visitor-friendly environments requires that it be accountable for everything it does, to all its stakeholders. Coexistent with this, is a new willingness on the part of museum staff to add value to the visitor experience, to share the 'secrets' of the collections and the knowledge of staff with outsiders. The museum is attempting to please the visitor, and frequently the desired exchange takes place.

Visitors can be greatly affected by the transactions they experience between themselves and the physical museum, often very positively with the visitor experiencing a revelation, change of perspective, or a sense of elation. Alternatively, transactions in the physical museum may be negative, leaving the visitor feeling ignorant and unwelcome. Visitors to the Web site may have similar expectations and reactions. It has not been established whether the transaction on the Web site is as satisfactory, or unsatisfactory, for visitors as a trip to the museum. However, as more museums have adopted the Web site as a new function, it has become a very appealing format for them to utilise and provide transactions on, for visitors. Bandini (1998) suggests that as we use more of the virtual, and as it becomes a greater part in our daily lives, the virtual world will take over and in the future we will find little difference between the physical and electronically produced space (p. 215). The situation that Bandini (1998) conceives may occur in the distant future, but presently there is no evidence in the museum world

to confirm that the museum and the Web site are equal providers of information, or that visitors view the two museum sites in the same way. It is known, however, that for many people a virtual visit is the only visit they can make, especially when distance or lack of time intervene, and therefore it may take prevalence over the physical.

The museum experience has been transformed by digital technology

Throughout the museum world, there has been a sharp rise in programmes that have incorporated the use of digital technology to provide transactions that inform and educate visitors to the museum. Such participatory, entertaining and informative additions have changed the visiting experience, simultaneously broadening the demographics, and vastly increasing the numbers, of visitors. One of the biggest changes for the museum now, at the turn of the century, is the move to the World Wide Web. Invisible within the walls of the museum, the Web entices visitors in, and enhances a global presence. Teather (1998) provides us with two ways of summing up these changes by stating that if one sees the museum as a static form then the move to the Web is a new entity, but if the museum is a dynamic entity that has adapted to new developments over time, then the Web is another adaptation. I would argue that the latter description fits the museum of today, and add that the museum over time has been more adaptable to new technologies than many of its followers.

Museums that have incorporated all forms of technology into their programmes have created a new way to carry out their functions and are viewed in a new light. Although there are some similarities in transactions at the two sites, as we will see during the analysis of the case studies, many of the ways one can transact with the museum are vastly different now since the advent of access to the World Wide Web. As Douglas Davis (1998) noted, "As the twentieth century nears its end, an entire generation of schoolchildren has begun to learn about art history through the imagery displayed on computer screens prompted by keyboards that allow precise manipulation of content, not to mention history itself. If we were therefore to list the physical characteristics of the late-twentieth-century museum, we would begin with the chameleon gallery/room/terminal" (p. 203).

A definition of transaction

By providing transactions on the World Wide Web in addition to transactions already available in the museum, the museum has opened itself up by offering greater access in new forms to more people. How do we define this term, *transaction*, for use within the museum context, and how does the nature of the *transaction* in the physical and virtual museum affect the relationship between the museum and its visitors?

Historically, the term transaction is used to name a legal, business or financial arrangement or interaction. An early Webster Dictionary definition of 1828 defines it as "the doing or performing of any business; management of any affair [in the business sense]" (Dictionary definition, (online), a). The term has been expanded over time, broadening its meaning in the area of everyday life and work - such as in the field of computer programming - in which it is frequently utilized. A more recent definition found in the Webster Dictionary reads thus: 1 a: something transacted; especially: **an exchange or transfer of goods, services, or funds** <electronic transactions> b plural: the often published record of the meeting of a society or association
2 a: an act, process, or instance of transacting **b: a communicative action or activity involving two parties or things that reciprocally affect or influence each other** (Dictionary definition (Online), b).

Today the word transaction is often connected with the exchange of money. It is expected that the transaction will be carried out between two or more people, or, in today's world, between person/s and a machine (for example, in the case of an electronic transaction). In order to gain a clearer understanding of the different ways in which this term is now used, in Appendix A is a selected sample of the definitions of transaction found in Web based dictionaries. The sections of definitions that are the most relevant to a suitable definition for this thesis are emphasised in bold.

On examining the definitions of transaction, one finds repetitions of words and phrases throughout, thus exposing similarities. The remaining elements indicate subtle differences in the contemporary usage of the word.

Searching for a commonality in the definitions, the following words and phrases recur:

- agreement
- exchange
- transfer
- business deal/dealing/dealings
- between two parties/between two or more parties
- between a buyer and a seller/goods move from producer to consumer

The words and phrases above can be incorporated into a definition that encapsulates the museum/visitor interaction. By extracting the relevant segments of parts 1 a) and 2 b) of the Webster definition, the definition of *transaction* is as follows:

1 a) **an exchange or transfer of goods, services, or funds**
2 b) **a communicative action or activity involving two parties or things that reciprocally affect or influence each other.**

The terms that have been chosen are those that best relate to the visitor/museum interaction. These relevant terms are the ones that can be interpreted to coincide with the experience that occurs both in the physical museum *and* in the virtual museum on the World Wide Web.

The transactions between the museum and its visitors may take many different forms. Accordingly, the preliminary definition above needs to reflect a range of possibilities and be broadened to incorporate:

- **an exchange or transfer of goods, services, or funds** is a **communicative action or activity**
- **an exchange or transfer of goods, services, or funds** can be an exchange **between a buyer and a seller/goods move from producer to consumer**
- **two parties or things** may consist of **two or more parties**, depending on the number of parties in each party. For instance, a party may be either one person, (therefore the transaction will be between two people), or a group of people, (therefore the transaction will be between a number of people). It may also mean that the transaction is between one person and a group of people, for example: one virtual

visitor at home chatting on-line with a curator and an artist at the museum. A 'party', described here as a person is therefore an animate being, but a 'thing' is likely to be the museum building, therefore it is an inanimate object. This is discussed further on page five.

- to **reciprocally affect or influence each other** some type of **exchange** takes place
- to **reciprocally affect or influence each other** some **transfer** occurs
- **an exchange or transfer of goods, services, or funds** may be considered a **business deal/dealings**

To understand this definition we must ask, "what do the different parts of the definition mean"? How does one describe 'a communicative action or activity', 'involving two parties or things', and 'that reciprocally affect or influence each other'? For the purpose of using the word transaction when discussing visitors, access, and the physical and virtual museum, these phrases are explained in this way:

'A communicative action or activity' is understood here to mean:

- the exchange of ideas within a human framework or a mediated framework (such as the World Wide Web)
- the transferring of ideas from one party to another within a human or mediated framework
- the exchange of something (such as goods or a service) from one party to another
- the exchange of something (such as goods or a service) from one party to another for money

'Involving two parties or things' is understood here to mean:

- two individuals take part in the communication
- two groups of people take part in the communication
- an individual and a group take part in the communication
- several variations of groups take part in the communication
- individuals or a group/s take part in the communication with a machine
- individuals or a group/s take part in the communication with a machine and associated individuals or groups

'That reciprocally affect or influence each other' is understood here to mean:

- that one of more parties gives something during the communication
- that one or more parties gains something from the communication
- that one party gives and one gains something from the communication
- that one party produces and the other consumes during the communication
- that one party sells and the other buys during the communication.

Because we are discussing transactions within the context of museums and the informal learning that takes place within them, I feel it is pertinent here to add two other factors to the transfer and exchange that occurs. This has also come about after discussions with interviewees at the case study museums. The factors are experiences and ideas. Therefore, by keeping these extended possibilities of the chosen definition in mind, the definition of transaction for the purpose of this thesis will be: "**A communicative action or activity involving two parties or things that reciprocally affect or influence each other.**" The communicative action or activity is an exchange or transfer of goods, services funds, ideas, and experiences.

People to people transactions

Globalization of transactions

As more and more people utilise what is available on the Internet, the 'global village' grows larger. Museums on the Web clearly have a role in the globalization of information as they offer transactions with anyone anywhere. Carol Duncan (1996) referred to the early internationalism of the art museum, having first occurred at the time when the notion of the public and public space was being defined throughout Western Europe (p. 3). Now, more than a century later, as public space meets cyberspace, the art museum has fully embraced the opportunities that having a World Wide Web site offer. Angelina Russo (1998) sees the positive potential of the Web for the museum, enabling it to form collaborations on the 'information superhighway', and thus allowing visitors to obtain information on objects and collections from not only their local museum, but nationally and internationally. This also means that the museum is providing transactions to visitors from all around the world through the Web site. A physical museum may have gained an international or national reputation while it supplies local access, but the addition of a Web site brings both a global reputation and global access (Table 2.1).

Physical Museum	Virtual Museum
International or national reputation & local access	Global reputation & access

Table 2.1 Reputation and access

Transactions between animates

The physical appearance and the siting of a museum may frequently make it appear aloof and closed off to its surrounding publics. The physical museum, however, is not solely this inanimate object. Neither its design, construction, collection nor any of the other functions that take place, in order for it to supply transactions, can be performed without a human presence. Thus, when we refer to a 'party' in the transaction, and transactions are taking place between parties or things, we are not referring to a structure of bricks and mortar, but rather to the people, (and sometimes 'the person'), who carry out the daily functions in and around the museum.

Likewise, in the virtual museum, it cannot exist without a human presence (staff and volunteers) to make it happen, even if they remain 'behind the scenes'. Therefore, when one contemplates a transaction between the physical or virtual museum and the visitor, I am referring to a human transaction (Table 2.2). However, at the risk of sounding contradictory, I accept that there are occasions when the 'space' itself (either the virtual or physical) will have an influence over the transaction and its outcomes. For example, foreboding architecture may prevent potential visitors from wanting to enter the physical museum, and a slow loading Web site may deter people from staying to experience it.

	Physical Museum	Virtual Museum
Structure/space	inanimate / thing	inanimate / thing
Transaction Producers (staff/vols)	animate / party	animate / party

Table 2.2 Inanimate/animate

One-way and two-way transactions

Transactions are reciprocal

The transaction at either the physical or virtual site may be either a one way or a two-way communication. At times, the visitor may expect to take a passive part in an activity and be informed, or the museum may want to provide information to a visitor who may or may not wish to receive it. Even when a transaction appears to be one-way, the mere presence of the individual will have a reciprocal affect on the museum, for instance, by adding to visitor numbers, or as trivial as another footprint on the floor. Thus, some sort of reciprocation occurs in every transaction (Table 2.3).

Transactions	Physical Museum	Virtual Museum
One-way	reciprocal	reciprocal
Two-way	reciprocal	reciprocal

Table 2.3 Reciprocation occurs in transactions

Several forms of communicative action and activity that take place at either site are initiated by the museum as its part in the transaction. For example, in order to inform or exhibit at the museum or on the Web site, there must be an exchange or transfer of services, ideas and experiences. This may happen in several ways. For example, in a linear one-way transaction, the museum wants to provide information, or the visitor wants to receive information. A two-way transaction feeds information backwards and forwards between the visitor and the museum. Cameron (1968) gave a third model of communication that incorporates a feedback loop. In this example, the exhibitor uses the object, with or without additional information, to send the message to the receiver/visitor, who must decode that message. With feedback loops, the message decoded by the visitor can be sent back to the exhibitor. This enables the exhibitor to indicate to the visitor whether they understood the message, and to make changes accordingly if the message is not being comprehended. Feedback functions exist in the museum and on the Web site, but will only be successful if staff use them to respond to visitors. The Web site provides the easiest avenue through which such dialogue may occur, through e-mail and online responses to comments and questions from the virtual visitors.

The museum produces such communicative actions and activities in order to ensure that transactions take place, therefore it gives in order to gain (Table 2.4).

Physical or Virtual Museum	Visitor
gives	Gains
gains	Gives

Table 2.4 Transaction gives/gains

Eventually both the museum and the visitor give and gain. When participating in transactions the visitor has expectations, both revealed and unrevealed, and the museum attempts to meet those expectations and to pre-empt them by supplying what they believe the visitor wants. The museum gives and the visitor gains, and vice versa. By visiting, the physical museum or connecting with the Web site the visitor gives and the museum gains. Finally, the museum produces the Web site and the visitor consumes it (Table 2.5), so as the museum produces and the visitor consumes, the transaction becomes an integral part of what is happening in the market place.

Physical or Virtual Museum	Visitor
producer	consumer

Table 2.5 Producer/consumer

Financial transactions are reciprocal at both sites

To perform transactions that depend upon purchase power there must be an exchange or transfer of services, experiences or goods, for funds. These transactions will always be reciprocal as the visitor receives services, experiences or goods in exchange for payment and the museum receives payment in exchange for services, experiences or goods (Table 2.6).

Physical and Virtual Museum	Visitor
services, experiences, goods	funds

Table 2.6 Transfer and exchange of services and goods for funds.

With regard to this transaction, there are differences between the physical and virtual sites. As an example, entrance to the Web site is free, thus no exchange of funds for services takes place on arriving there, whereas at the three case study physical museums, a fee is expected.

Business transaction at both sites

By entering either site, the visitor immediately becomes involved in a business transaction, by adding to the visitor numbers, and thus being party to the museum's future success in gaining funds and other necessities to support the site's very existence. The visitor is then rewarded with the opportunity to participate in all manner of transactions. Some may consider this reward to be the visitor's right regardless of the entry fee. But in most physical museums where there is an entry fee or fee for additional programme activities, those people who do not pay will not be permitted to partake in the transactions. This is certainly the case at the three case study museums at any time other than on the free entry day.

The visitor and the museum reciprocate each other's favours, one exists because the other sustains its existence, and vice versa (you cannot be a museum visitor unless there is a museum to visit). The museum's transaction with the visitor becomes one of exchange, a commercial exchange. The museum is producer of programmes at either site, and is available and able to supply in response to most of the needs or wants of its consumers. Specific parts of this commercial exchange permutate into transactions similar to business deals. The visitor buys a service that the physical museum is selling. The physical museum, depending on its size, generally has other commercial transactions for the visitor to partake in also, services or wares for sale such as goods from the museum shop, and food items from the café and/or restaurant. In countries where a museum visit is free, the visitor tends to take for granted that such service will still be supplied, especially if they have paid taxes towards the upkeep of such local institutions. Although these business transactions take place mostly in the physical museum, as mentioned above, commercial transactions do occur at both sites, especially when there is the opportunity on-line to pay for a membership, or make purchases at the museum shop.

Issues that affect Transactions

The museum controls transactions and their outcomes

Much of the museum's power is linked to what it can control, which includes the transactions it provides in both the physical and virtual museum. Hooper-Greenhill (1992) commented that the power in museums is in the hands of those who make the decisions about what should be viewed, how, and when, and therefore the public is generally prevented from seeing more of the collections other than what is on display (p. 7). Regardless of our needs, the museum makes decisions about what we may do, hear, see and participate in, during our visit to either space.

Imbalance of power

Historically and contemporaneously the museum has provided, perhaps encouraged, transactions based on an imbalance of power with the bias in the museum's favour. Such things as heightened differences between socio-economic groups, education, low expectations and lack of choice, may contribute to this imbalance. In his lecture, Norman Bryson (1997) sought to answer questions about the power of the 'institution', and in particular the museum. He suggested that the museum operates on the divide, like many institutions, you must be 'initiated' to be accepted. He asked: "How do you feel fully initiated?" and answered that there is a structural initiation, a structural pedagogy, people who know and those who don't know - being the division between the expert and the lay person. Carol Duncan (1996) supports this argument when she refers to Bourdieu's visitor study in the 1960s. Bourdieu documented that art museums give some the feeling of cultural ownership and belonging, while they make others feel inferior and excluded. All of these factors apply to the experience of the uninitiated visiting a museum Web site. Visitors still feel this difference today in the physical museum, even with so many changes to provide access. Cyberspace in general attempts to provide an alternative, constructing itself into a space to which everyone is welcome and equal, information is shared and exchanged, (or sold), rather than used to discriminate. Frequently the information on the museum Web site is made no more interesting or appealing to the uninitiated visitor, and the visitor's use of the site becomes the most accessible transaction.

Although there may be no signage, the physical museum sets unwritten rules. Most visitors know the 'do not touch' rule in the art museum. Visitors 'agree' to be under surveillance and to be punished if necessary, and in order to abide by the rules. They tend to self-regulate themselves, being careful not to make too much noise, not to stand too close to an artwork, and not to touch. As Bryson (1997) suggests, the theory of discipline and punishment established by Foucault (1982) can be applied to the museum, "Disciplinary technologies survey, classify, and control time, space, bodies, and things. As the subject is surveyed, classified, and exposed to examination, he or she becomes his or her own self-regulator. It becomes unnecessary to use force to constrain the convict to good behaviour, the madman to calm, the schoolboy to application, the patient to the observation of the regulations. He who is subjected to a field of visibility, and who knows it, assumes responsibility for the constraints of power; he makes them play spontaneously upon himself, he inscribes in himself the power relation in which he simultaneously plays both roles: he becomes the principle of his own subjection" (p. 209).

In its transactions with its Web site visitors, the museum does not regulate them in as many ways, they tend not to be placed in the position of being self-regulators, and there is no security guard or all-seeing eye to contend with. However, if the Web site has the capability, the visitor's movements can be tracked by the museum. Presently this is mainly to assist it to understand the interests of visitors, and what parts of the Web site are the most successful.

As the museum democratizes power in a democratized space, the visitor is empowered through learning and the freedom allowed in that space. Yet, the Internet is not a wholly democratic space, for the information supplied is still controlled and not everyone has access to the technology to visit the museum Web site and share what it has to offer. This is supported by Balsamo (1998), "...the myth of technologically assisted democracy obscures the process whereby choices are constructed for people. Whereas the guiding myth of the information age proclaims that citizens have access to all the information they need, what is rarely discussed is the mechanism whereby information is encoded, manipulated, packaged, and selectively disseminated. In short, we often fail to appreciate how our choices are already constructed for us by the kind of information made technologically available" (p. 232). Even though the museum controls what is

available at both sites, not all transactions between the museum and its visitors are weighted in the museum's favour. The visitor goes to be informed, the museum informs by providing the programmes through which the visitor receives information. Information is not only transferred, but there are many opportunities in which it can be exchanged, such as open forum discussions, or on the Web through visitor responses and conversations pages. However, not everyone has access to the technology to access the Web, and a discussion of this marginalization is included in Chapter One.

Transfer and exchange of information

One of the main reasons why the transaction on the Web is offered by the museum is to transfer and exchange something, especially that which is not easily provided in the museum itself, such as the viewing of collection items that are not on show or not easily obtained unless one is at the museum. The visitor accesses the Web site in order to be informed, (and sometimes entertained), and they receive information transferred by the museum. Information can include schedules, collection information, a view of the museum (in the form of pictures and maps), virtual exhibition visits, contact details for staff and so on. There are both similarities and differences between these transactions on the Web site and within the museum. For instance, the physical museum provides a range of visitor programmes, and even though the Web cannot provide many of the actual activities, there may be descriptions, summaries, or facsimiles, of the events made available on the Web. The converse of this is that there are programmes, such as exhibitions of Web-based artwork that can only be exhibited on the Web site. These can be made available on computers and advertised in programme brochures in the physical museum, but remain Web-based activities.

One area in particular that many museum Web sites are focusing on is the provision of collection information. Through the Web, museums are making greater strides in 'opening up' access to their collections, sometimes making them more available than in the physical spaces. The World Wide Web has been a catalyst in making museum objects more accessible, easily and quickly, and in most of these situations, the same number of objects could never be made available in the museum itself.

Another example of what the Web site can do more easily and more quickly than the physical museum is to supply visitors with information about previous exhibitions.

Some of this information goes back twenty years, and thus provides visitors with a true archival learning tool on the Web.

I have listed some of the exchanges that can take place on the Web, but none of these will be successful if they do not give visitors what they need to stay at the site and return in the future. Campbell and Wells (1996) listed three characteristics that they consider are essential to make visits to a Web site more appealing. They are appeal factors (ways to draw people into the site); retention factors (how to keep visitors at the Web site); and revisit factors (ways to encourage visitors to return to the site). As the capability of the technology changes and thousands of new sites join the Web each day, museums will be forced to keep up by providing transactions that have attended to such factors.

Space and architecture

As alluded to earlier, when considering transactions, we need to examine the spatial settings in which they take place, because this may impact on the type of transaction that occurs. When we contemplate the physical museum and the museum Web site, we are focusing on two different 'spaces' that offer both similar and dissimilar transactions. Art museums are often monumental stone spaces, which, according to Bryson (1997), are places of oblivion and obscurity, similar to the nineteenth century penitentiary. They not only look similar, but they follow the same principles - the visitors' behaviour is controlled, visibility is important, the guards and security equipment are omnipresent, and visitors feel that they are being watched wherever they are. Visitors become self-managing, knowing they are being watched they are careful not to touch, not to do any wrong. According to Carol Duncan (1995), the museum is like a theatre that forces visitors into a performance without their knowledge. The serial display of objects makes visitors take a linear pattern of navigation as they make their way around the physical museum. The non-linear nature of the Web allows a very different form of navigation as a visitor may choose to move in all directions. However, it still offers the choice of linear patterns of navigation, which are especially useful for those who are performing self-directed research and have specific search queries in mind.

For many visitors, on entering either the physical or virtual space they submit to a transaction based on power, in which the museum has the power. The understanding of

'*space*' with regard to the museum is coterminous with the notion of the museum/visitor transaction and power. The museum provides a *space* - either understood to be a physical structure, a building, on a particular site (the siting of the museum is also integral to this transaction) or a site in cyberspace. The architecture of the museum or Web space will vary widely from museum to museum and will often be the reason regarding whether or not visitors partake in any museum experience, or, further transactions.

Over the last three decades in particular, the museum has attempted to be more accessible, and in connection with this new thinking, besides programming for visitors, the architecture has changed in a positive way. For example, in the mid 1980s, Montaner and Oliveras (1986) stated that the postmodern contemporary museum was now a space for the synthesis between art and architecture (p. 27). This synthesis may also be a factor that helps to break through the power imbalance between the museum and its visitors on the physical site, just the way that access to the equipment and a server, as well as user-friendly design, breaks the power imbalance on the Web.

The museum has changed considerably, and Fisher (1991) refers to it together with other recreational spaces once solely available to the upper classes, that are now in the domain of the public collective. For instance, the game reserve became the zoo, book collections became libraries, grounds of large estates became public parks, forests became reserves, private collections became museums, and musical groups are now heard in public concert halls (p. 7). Over time, as populations have changed, and the working classes have also gained access to education and public collections, the museum's audience (and potential audience), has made it clear they want power also (Weil, 1997, p. 257). By acknowledging these needs, and making itself available on the Web, the museum is in some respects letting go of power and opening up for greater transactions with its audience. In this very public space, the museum has become even more 'public'. Information is made available, there are no rules to adhere to while visiting the Web site, and the visitor is free to come and go - for no fee - as often as they please, at all hours of the day or night.

In conclusion

It cannot be disputed that the physical museum has been changing in recent times. Great efforts have been made to provide access to information, expensive splendid new post-modernist spaces have been designed and built to both house collections and make visiting an enjoyable experience, and most recently, the museum has been creating an extension of its reformed self in cyberspace.

There are those who express concerns that the museum as we know it is disappearing, while for others the Web presents many new possibilities that are eagerly awaited. Some hope that viewing copies on the Web site will encourage visitors to see the originals, and thus visit the museum, or has this new technology transmogrified the visitor and potential visitor into one who will become only a virtual visitor? "Each medium leaves its mark by altering our institutions and persona attitudes and values, a concept eloquently embodied in Victor Hugo's *The Hunchback of Notre-Dame*. In that marvelous work the character of the archdeacon boldly states the "the book will kill the church"... Similarly, the computer, at the apex of technology, as the trigger of interactivity combining other media, will redefine not only other and previous media, but the structural metaphor it has borrowed in order to function. Few of us comprehend that the electronic highway is not just an extension of the turnpike, that it not only co-opts but devalues the domain of public space" (Gumpert & Drucker, 1996, p. 35). There is always a desire in people to see the real thing, but with so many changes taking place around us in this digital age, one might well be asking if the transactions on the Web site will become so attractive that the Web will take visitors away from the museum? As a comparative example, Internet users around the world now do considerable amounts of shopping via the Internet, which provides them with the access they need to sellers in order to make purchases.

To summarise, in this chapter I introduced a definition of transaction that coincides with the exploration of my thesis, followed by a discussion of a range of transactions that occur in the museum and Web environment, the factors that influence these transactions, and the way in which they affect the museum/visitor relationship in each space. These, and other factors that arise during my analysis of transactions, will be discussed further as I examine the transactions supplied in both the physical and virtual spaces of three Bay Area art museums in the following chapters.

Chapter Three

World Wide Web site case studies

The aim of this chapter is to describe the transactions supplied on the museum Web sites. The transactions in the physical spaces are described in Appendix B.

Many museums have readily adopted the Web as another tool they can use to provide new transactions between themselves and their visitors. What transactions should a museum provide on the Web, and what transactions are they providing? These questions will be addressed in this chapter including an outline of both the concepts and descriptions of the Web sites of the FAMSF, BAM and SFMOMA. The descriptions provided here are based on my personal use and observations of the Web sites, and interviews with museum staff. Together these help to answer questions about the formation of the Web sites, for instance, the reasons why museums created Web sites, staff involvement, and policies, if they exist.

What is provided on a Web site?

Different Web sites provide different content, have distinct qualities, and like museums, no two museum Web sites are identical. An art museum may wish to exist in cyberspace solely as an electronic brochure, advertising programmes and facilities just as a paper brochure would do. Others promote the site as a doorway to the extensive collections, offering thousands of images for avid researchers and interested laypersons alike. Some art museums go further and provide virtual exhibitions of real and Web-only exhibits, the opportunity for on-line discussions about art, and other interactive transactions, such as activities for children.

Why create a Web site?

Suzanne Keene (1997) is close to the reality of the three case studies, when she states that most museums have gone digital because the technology is available, and they don't want to miss the opportunity, rather than having an "urgent purpose" (p. 309). Yet she agrees that digital media is a good advertising medium, and gives the example of the rise in visitor numbers to a Florence museum following the creation of its Web site. That the Web can be a successful advertising tool and bring in more visitors would

certainly be a concrete benefit. But many museums, such as the SFMOMA and FAMSF, did not have strong convictions when they chose to create a Web site. The SFMOMA was offered free technical support if they produced a Web site, and the FAMSF had digitized much of its collection for another purpose prior to placing the material on the Internet.

What should a museum provide on the Web site?

There are no official guidelines or policy stating what a museum Web site *should* do, promoted by such organizations as the American Association of Museums (AAM) or the International Council Of Museums (ICOM). There are, however, organizations and conferences that address the subject of museums and the Web each year, such as ICHIM (International Conference on Hypermedia and Interactivity in Museums) and Museums and the Web conferences. Lacking overriding guidelines, several museum professionals and Web designers have outlined their own considerations of what a museum Web site should provide. Tinkler and Freedman (1998) outlined their four most important criteria for a museum Web site. Firstly, the site should be a resource that supports the exhibitions currently on display in a museum, generates interest in the museum, encourages people in the community to visit the museum, gives visitors an idea of what they may see there, and is a resource for people who have recently visited the museum and who want to acquire more knowledge about what they have just seen. Secondly, the site should act as a research tool, providing a catalogue of the museum's holdings, existing as an encyclopedia of information about, and related to, the collection of the museum, pointing to outside references, housing research papers, and allowing the researcher to drill down into all of the museum's accumulated knowledge. Thirdly, the site should be a community center, becoming a catalyst for moderated discussion and debate by: allowing its visitors to participate in online forums, hosting guest lecturers that stimulate critical discussion, making sure that visits to the Web site are not a solitary experience. Fourth, the Web site should be a virtual space for online exhibitions by becoming an extension of itself, using the Internet as a medium in and of itself, providing thought provoking exhibitions designed explicitly for the online experience, by exploiting the qualities of the digital medium, and using them as opportunities to explore areas that would otherwise be impossible in a physical museum environment (1998, paragraph 3)

The content on the Web sites of the three case study examples all conform to Tinkler and Freedman's first criteria, but the SFMOMA does not yet meet their criteria of what is necessary to be a research tool. FAMSF have no intention of becoming a community center, but both SFMOMA and BAM propose moderated discussions and debates in the future. With regard to the last criteria, both BAM and SFMOMA are experimenting with ways of using the digital qualities of the Web. BAM has begun to include online exhibitions, and SFMOMA is commissioning Web art projects as well as collecting art Web sites for inclusion on its Web site.

As these four criteria imply, once the exchanges between visitor and Web site begin, there are many transactions that museums can provide on the Web. Such transactions are made possible by the digital technology's capability, combined with the interest, knowledge and skills of the staff constructing the site, the primary aim of the Web site, and the understanding of what the virtual visitors want by those creating the content.

The World Wide Web sites of FAMSF, BAM & SFMOMA

Fine Arts Museums of San Francisco (FAMSF)

Entry (Home page) and Navigation Choices

The home page design of the FAMSF site echoes the classical forms of the buildings (FAMSF, online). The first image presented to the virtual visitor is the outlined façade of a compartmentalized classical structure, inside of which the main navigational choices are placed.

The roof line text states: Fine Arts Museums of San Francisco, and underneath on the left is a silhouette, title and siting of the de Young Museum, and similar on the right for the Legion of Honor. Under both headings are images and titles of current temporary exhibitions. In an arched entryway in the center, is the title IMAGEBASE 70,000 IMAGES, ZOOM, (the second O representing a magnifying glass), and underneath is a changing image of works in the collection. This is the link to the collection images, the Art Imagebase. At the floor level of the façade is a navigation bar listing: Exhibitions / Collections / Information / Education / Membership / Site Map.

Figure 3.1 Top section of FAMSF home page

In the white space below the diagram is non-permanent text, which in June 1999 was a clickable line stating: Design for New de Young in Golden Gate Park Unveiled. At the base of the home page, (found by scrolling down), is clickable text, echoing what is written above. The last line of three offers a search: Search the Thinker: [box for search item entry] and a Search button to start the search.

Visitors have the choice on this homepage to visit either museum for general or exhibition related information, (each separate museum opening page offers: Collections / Calendar / In The News / Exhibitions / Directions), or visitors may choose to search the Art Imagebase (FAMSF, d) immediately. Under certain categories such as Information, the text is either separated by museum, (for Directions or Exhibitions), or incorporates both, depending on whether or not they share the function.

Exhibitions

Information under Now on View, Coming Soon, and Past Exhibitions, is available in this section. Visitors may access feature articles, an introduction to the exhibition catalogue, links to Internet Resources, and Online Tours of special exhibitions on show in either museum as far back as May 1996.

Depending on the information available, a virtual visitor may encounter a substantial amount of explanatory text and images, or detailed introductions, press releases and slide shows of specific works. For some exhibitions such as *Ikat: Splendid Silks from Central Asia* (FAMSF, c), which was on view at the de Young from November 22, 1997 to March 1, 1998, a virtual gallery tour is provided in addition to a slide show. Visitors thus have the opportunity to experience an exhibition on the Web site, whether or not they ever saw the exhibition in the physical setting.

Design

The design of this site follows a structured pattern, each page is laid out in a similar way, the de Young particulars located on the left side, the Legion on the right and the navigation tools in similar arrangements. If a visitor requires help using the site, on the navigation bar is a Site Map, a flow chart lay-out of the site, (with all listings clickable), and a Site Tour, which guides the visitor through the layout of the pages. Navigation through the site is not initially as easy as one might expect it to be, due to so many choices. However, they have met the demands of representing two spaces.

Why create a Web site, and policy

According to Bob Futernick (1998) Chairman, Conservation Departments and Director for Collection Imaging, "It was a natural progression for the staff at FAMSF to move to the Internet. During closure of the Legion in 1993 for seismic upgrading staff upgraded the collection catalogue and research through a combination of new computers, staff training and new employees. When the possibility of creating a Web site arose, at least 50,000 images were already in digital form and were easily transferred to the Internet. The database was first made available on computer in the museum, but after suggestions from visitors, placing it on the Web became the next goal." Museum trustees expressed concerns regarding the copying of images, but staff saw the need for preservation as well as access, and persuaded them that this was equally important.

There is no Web policy document, but staff wanted to preserve and provide access to collections at the same time, and to pursue the museum's mission through the use of the Web (the museums' missions, as described on their Web sites, are placed in Appendix E). According to Bob Futernick (1998), they "wanted to embody the notion of access, believing we could be one of the first museums to commit to total access to its holdings. The staff knew that value is derived from use, that we could preserve the collection while encouraging greater use." As Pamela McDonald (1998) Director of Audience Development and Civic Affairs stated, they "wanted to expand our audiences, and unlike some other museums' reasons for creating Web sites, ours was not a business decision, it was a way of providing ourselves and others with greater access to our vast collections. The goal is that one day they [non-visitors] will come in the door." McDonald (1998) stated that staff was also concerned with the museum's "need to reach a younger audience, thus developing the future of the institution. Reaching ordinary people and those living in remote areas, or who just could not get to the museum is equally important," and McDonald (1998) recalled the staff's excitement when first getting visitors online from Alaska.

Who creates the Web site?

According to Futernick (1998), "To produce material for our site, several staff learnt photography and computer skills, others carried out extensive research about the collection, all ongoing functions at the museums." A new staff member was employed as Webmaster, to programme and administer the Web site, and together with Futernick and the Director, they made decisions about what should be provided on the site. Staff from the different departments represented on the site supply information to the programmer, such as updated education programme details. This information fits into the structure of the site, which always remains in place. This process is comparable to the regular production of a museum newsletter. Similar to any other staff member with regular duties, the Webmaster continuously programmes and updates the site, and as long as he is provided with the new information, and on time, the site runs smoothly. When there is additional information to include, such as announcements of the new building design, the format that the inclusion will take is decided upon in conjunction with the Director and relevant staff members, such as Pamela McDonald.

Museum concerns

There were concerns about copyright according to Futernick (1998), "What might we be giving away by placing images on the Web? Most museums have had the experience of making their collection imagery available through publication, but this was something new." The Director and staff closely involved with the site production decided that "perceived benefits overall outweighed the risks" (Futernick, 1998). To the first page of the Imagebase they added a permanent security statement (FAMSF, b) that visitors must agree to before gaining access to the Imagebase. Similar to the existing reproduction and distribution of the museum's images, in catalogues and on cards, the staff knows there is always a risk of illegal copying. The security statement will not stop anyone determined to copy images for other purposes than what is permitted, but access to images on the Web, like the other forms of reproduction, is based very much on trust between the museum and its virtual visitors. Futernick (1998) was also "...confident that the images we provide do not have the resolution necessary for commercial reproduction."

What does the site provide?

From the outset, stated McDonald (1998), "The FAMSF Web site was a very popular site...It quickly became apparent that visitors liked accessing the collection and later, the virtual exhibitions...The site is an adjunct to, not a replacement of, the real, while providing access for those who cannot get to the physical space, for the non-visitors and occasional visitors. Then we realised that for locals and tourists, the site was a resource for general information about the museum" McDonald (1998).

The main transaction that the FAMSF site provides is the access to the collection. Information is provided, and exchange of information is welcomed from visitors who can provide more details about the works of art.

Visitors may also access virtual tours of real exhibitions, navigating themselves through in non-linear patterns, zooming in and targeting 'hotspots' placed on the page to click on in order to view particular pieces. Online visitors, besides receiving information, may accept the invitation to reciprocate by e-mailing comments and information back to the museum staff. Visitors can communicate directly with any staff member, even the director, by e-mail. Such transactions are reciprocal, and all staff must respond to their

e-mail queries. This has placed additional demands on staff, which finds that more people, including fellow professionals using the site as a research tool, from all over the world, are contacting them.

Visitors have access to more than what is available in the physical museum. Futernick (1998) has "...seen outcomes already, including a rise in the number of loans of works previously unpublished, confirming that more people, such as other curators, are more aware of the collection's contents. More visitors attend the museum specifically to view objects they found on the site, indicated by a rise in appointments through the Web." Online visitors are also using the site as a way to establish or renew memberships.

Features

The most distinctive feature of this site is the desire to provide online visitors with access to images and data of all the objects in the collection. By June 1999, there were 70,000 images available, and Futernick (1998) stated "The museum is committed to putting 100% online." The Imagebase welcomes visitors with a statement about the museum's online mission (FAMSF, b), and on the same page we are requested to click I understand and agree! under the statement concerning not reproducing, altering or transmitting any of the images. At the base of this page, there are three e-mail addresses, one for comments and feedback, one for inquiries about rights and reproductions, the last for appointments to view the originals of works found in the Imagebase. Good user instructions, including a walk-through tour with a curator on how she uses the Imagebase when planning exhibitions, assist the on-line visitor to use the Art Imagebase, which is very user-friendly.

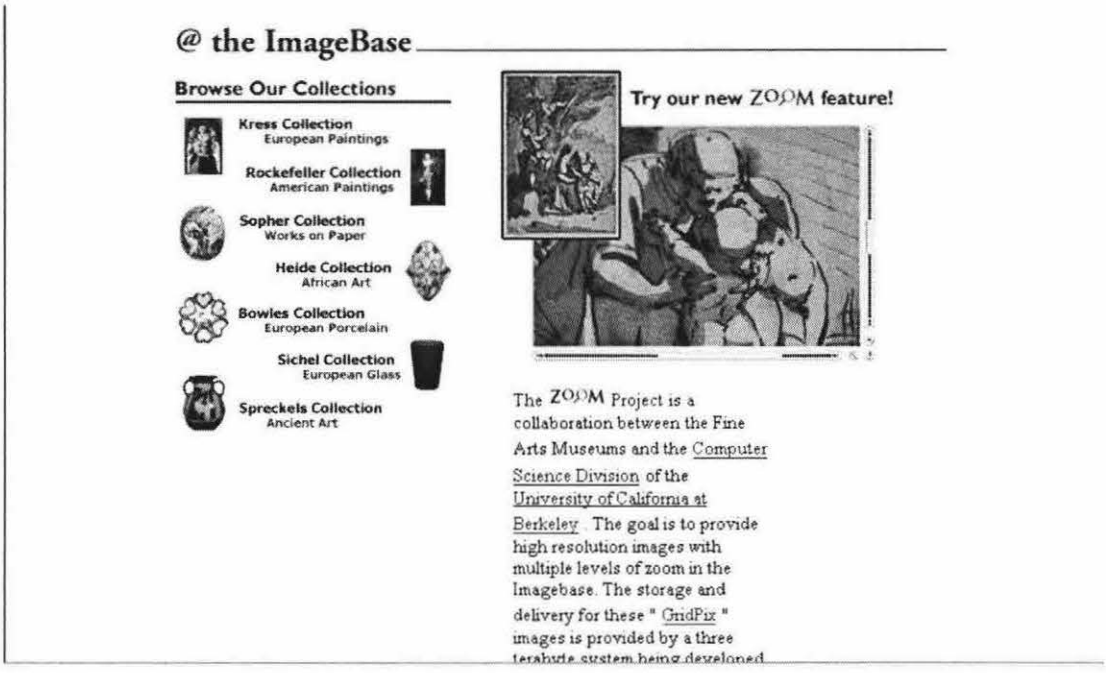

Figure 3.2 Top section of Imagebase opening page

Sometimes transactions of a political nature linked to the de Young Museum are included. The most recent being public debate over whether the museum should leave its present building, move into the city, or remain where it is and be refurbished. Many people used the Web site as an avenue through which to send in their points of view during 1998. In June 1999, after a decision was made to stay at the present site and refurbish, the site added the information on the new design of the future building.

What is not provided?

What the site does not provide, pointed out McDonald (1998), "...is a context for exhibitions that may require it, and that may have one in the physical museum." She used the example of the Harlem Renaissance exhibition in 1998, "In the physical museum music and moving imagery were provided to give a context, both of which were not included on the Web" (McDonald, 1998). She expressed concern that the Web site "tends to take all objects into two dimensions, and that they need to provide three-dimensional possibilities when the work requires it" (McDonald, 1998). McDonald (1998) also felt that the museum hadn't gone far enough to make the label text accessible to all readers on the Web.

The Web site provides information on education and activities for young people in the physical museum, but does not provide any kids' pages, therefore there are no transactions in the virtual space for the younger audience.

Berkeley Art Museum (BAM)

Entry (Home page) & Navigation Choices

At *http://www.bampfa.berkeley.edu/*, the first thing a visitor sees is: Art Film (yellow letters on black background, first opening page, two seconds).....University of California Berkeley Art Museum and Pacific Film Archive (yellow letters on black background, second opening page, 5 seconds).....Berkeley Art Museum + Pacific Film Archive /Home/Search/Comments/(navigation bar across the top of the third opening, or main, home page).

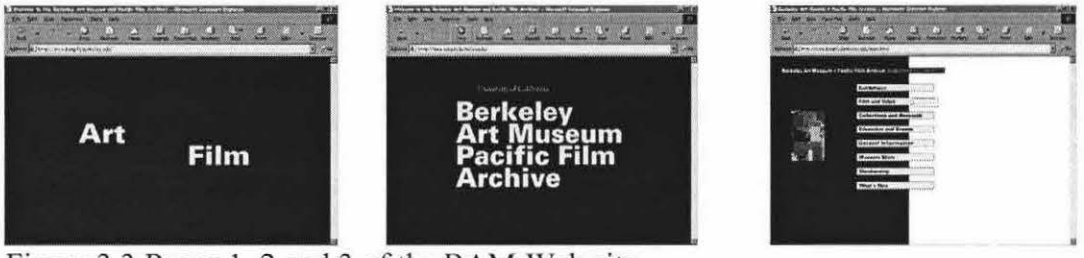

Figure 3.3 Pages 1, 2 and 3 of the BAM Web site.

This third opening page offers a thumbnail image on the left hand side, which changes as visitors scroll over headings on the right listing the general choices that the site has to offer. They are: Exhibitions, Film/Video, Collections/Research, Education/Events, General Information, Museum Store, Membership, What's New. The left side of the screen is black, the right white, and the categories are written in black letters on yellow bands down the center of the screen. This is our introduction and entranceway into the BAM Web site.

To move from this page visitors must click a heading. For general and exhibition information, this page is the one to explore from. For those who are wanting to use the site as a research tool, it is best to click on SEARCH on the title bar, or on Collections/Research.

Exhibitions

Under Exhibitions, in Current Exhibitions, the Web site now includes collection exhibitions, but the emphasis is on special or touring shows, which have additional information and special events associated with them. By clicking on the exhibition titles, the visitor is linked to a more in-depth orientation to the exhibit.

Depending on the size and relative importance of the exhibit (it may be an international touring show), the next page will supply a substantial amount of information, and may include navigation bars for: Introduction / Biography / Interview with the Artist / Public Programmes / Artworks by the artist. When clicking on the Artworks category we may get one or more, potentially all, images in the exhibition, and a list of the works that are in the show. There may also be a description of each, or some, of the works written by education or curatorial staff.

This site has a thorough Advance Exhibition Schedule, that lists exhibitions up to a year in advance, but lacks images. In the Previous Museum Exhibitions section, visitors are able to peruse all the information that was on the Web site when the exhibitions were current, back to late 1994. In some examples, such as that for *When Time Began to Rant and Rage*, (an exhibition of Irish figurative painting held in early 1999), images of all the works are available for viewing on-line. The *Matrix* exhibition information has been added from museum files, and features more than twenty years of exhibitions.

Why create a Web site, and policy.

The primary purpose for BAM's Web presence was "...as an outreach tool for educational content, research access, public relations and press information," according to Richard Rinehart (1998) Information Systems Manager. There is no Web site policy document as such, but in an explanatory Web site statement, BAM explains the way in which its site is a technology initiative (BAM, a).

Who Creates the Web site?

The site is programmed by a new media team consisting of the site administrator and a group of volunteer interns, (students, recent graduates and community members), who also work on the research and production of the educational and public access technology projects (BAM, b). Museum staff from Curatorial, Education, Administration departments and others, contributes information for their sections of the site, in the same way that they produce material for their departments within the physical museum. All the staff are qualified in their respective fields, thus are entrusted by the Director to be producing accurate information of high quality. The new media team developes the direction of the site, and often take the initiative and experiment with making new transactions available, such as the decision to introduce conversations and comments pages. These are then produced in consultation with the relevant personnel, such as the education staff.

What does the site provide?

"A main feature of this site is access to a collection database" according to Rinehart (1998). He added that "...it has democratized access to collections, enabling any researcher to obtain information about things that physically have restricted access." He was also aware that "some online exhibition information can be hard to find in other formats, such as old exhibition catalogues" (Rinehart, 1998).

For visitors using the BAM site for research, there are several options for searching BAM's collection, supplied with a detailed help section on how to perform the searches. Searches can be made of the text of the complete site, or of certain collection areas such as a MATRIX search, or through the Online Multimedia Collection Guides, which include essays, artists' biographies, and historical contexts (BAM, c). There is a search base for the PFA collections, and an index search called Art, Film & Culture Resources Elsewhere on the Internet (BAM, d), which supplies hotlinks to seventeen arts related sites.

Education staff found that they "...must adapt our material for use on the Web, and where necessary the text is changed to fit in with a more interactive format" (Sherry Goodman (1999) Curator of Education. She also expressed an awareness that "...people come to the museum primarily for an aesthetic experience, and the virtual experience is

provided to enhance the real one by providing information and other associated materials, before or after visiting the physical space" (Goodman, 1999).

It is also possible to contact staff by e-mail from the BAM site, so staff not involved with site programming is indirectly involved by dealing with queries. For some staff, according to Goodman (1999), access to them through the Web has added to their workload.

There are several feedback/interaction/communication points on the site, which are discussed below, including a very active general feedback page, headed "comments" where people post suggestions or questions of a general nature and get a response. When commenting on the directed discussion forums, Rinehart (1998) stated "They are different from the physical site because there you need to be in the geographic area to participate; and it is not only a two-way interaction between museum-audience, but a three-way with interaction between audience-audience. Occasionally this transaction occurs in the museum when a computer is in the gallery for visitors to add comments during their visit." Education staff believe that "...equal numbers of visitors in both spaces contribute comments, and they may prefer to type into computers rather than write in comment books" (Goodman, 1999).

Staff consider that they "...definitely have a global reputation, now having an international audience on and off line" (Goodman, 1999). "Book sales have increased online," according to Rinehart (1998), who added, "People like to see what they are getting. We have discovered that we are more likely to sell a book or catalogue, if we reproduce a considerable amount of it online."

Interactivity is an important transaction on this site, and the kids' area is where much of this occurs. The public may utilise the research component, look up in-depth descriptions of previous, current and past exhibitions, or send in comments. Many of the comments are in the form of practical suggestions, and according to Goodman (1999) "Staff want to know what people want, or to hear if something is not working as was intended."

The Web site now also has a commercial aspect to it, now that the bookshop is available online.

Special Features

There are several feedback areas on this Web site. In the exhibition section *Transformation: The Art of Joan Brown*, an online guide for the exhibition called Hey Kids is included with an area for questions which encourage feedback, and space to read others' comments. In the general Education and Events section, there is an Interactive Multimedia Guide for Kids to the museum, and children's drawings were added to the Joan Brown Web pages, showing visual responses from the community.

In the Carrie Mae Weems' exhibition section, *Ritual & Revolution,* visitors may access hotlinks to information about her work. There is a short audio component, and a Conversations section, for online comments on the exhibition. A computer was available in the gallery when the exhibition was on, thus many comments were written at the museum.

This is the only site of the three that is presently committed to providing pages of activities for young people, offering them an opportunity to be heard. There is no site or visitor evaluation, and visitors are gauged by their responses, to which they add their name, city and age. Staff say they "...have noticed no differences in visitor numbers to the museum since being on the Web" (Goodman, 1999). They have plans for the future of the site, and according to Goodman (1999), the education staff in particular would like to supply more information for specific student age groups.

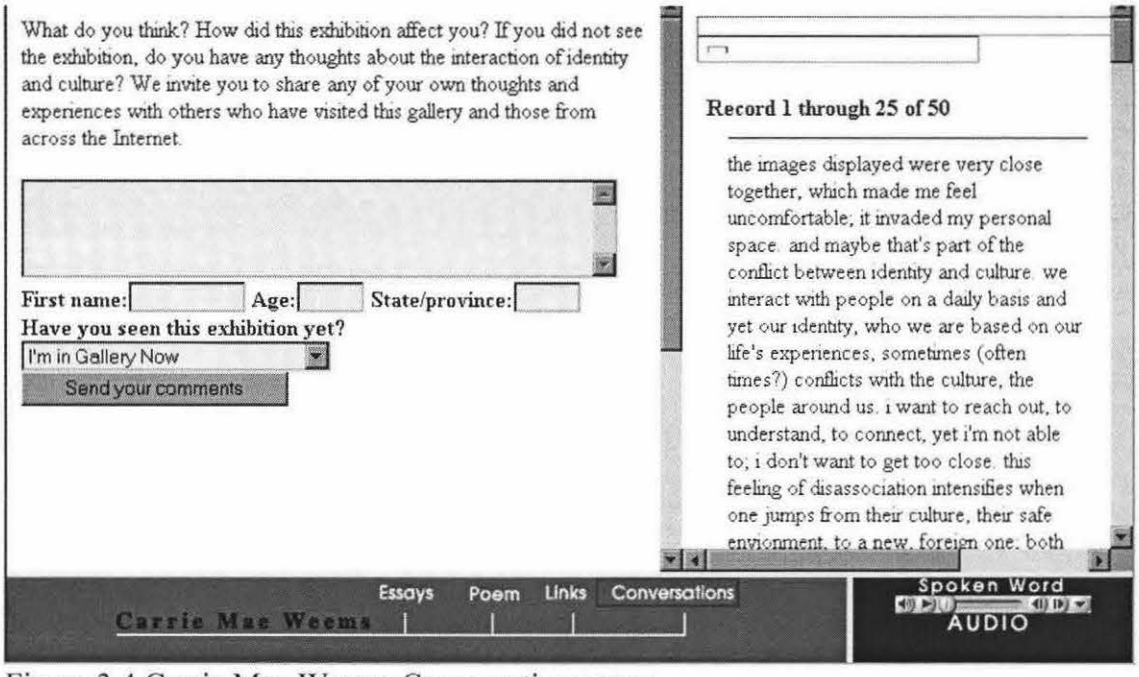

Figure 3.4 Carrie Mae Weems Conversations page

Finally, BAM has attempted to bring its community into the Web site by incorporating children's images that respond to an exhibition, by exhibiting an art project featuring local university students during fall 1999, and previously an exhibiting artist used the site to get input from visitors for his forthcoming exhibition.

San Francisco Museum of Modern Art (SFMOMA)

Entry (Home page) & Navigation Choices

As of June 1999, the SFMOMA provides a Web site that includes the fundamental information such as exhibition schedules, calendar, history, public programmes, booking information, digital art, education programmes, and the occasional interactive Web feature. The updated, and third re-make site, is still in production. The following description mainly concentrates on the future SFMOMA site, which at the time of writing is delayed, therefore is available as a test site only, and is likely to change considerably.

The opening page of the SFMOMA site utilises moving graphics, bringing together images and titles to click on, as well as the main headings: Exhibitions, Calendar, today, this week, and Permanent Collection. Quotes by modern artists, such as: " "Bad taste makes the day go by faster" - Andy Warhol," scroll across the top of the screen and in

wallpaper form behind images and text on the main body of the page. There is a title bar, which remains in place at the top of each page throughout the site. It features information/art/calendar/museum store/conversation and a 'go to...' button, containing the same headings, and follow-on links if they exist. At the base of the home page are four more clickable categories: Digital SFMOMA: Take a virtual tour of the Museum's landmark building; Rental Gallery: Support California artists and start your own collection; Get Involved: Connect with culture, become an SFMOMA docent or volunteer; Join Us: Take advantage of SFMOMA's great membership benefits.

Exhibitions

The SFMOMA site offers: 'exhibitions' (current), 'previous exhibitions' (going back to 1997), and 'upcoming exhibitions'. There are no slide shows or virtual exhibitions (although these are intended) on this site, rather, one or more images, and a detailed explanatory text. The section is neatly designed, each exhibition listing is boxed separately and contains a small thumbnail image, title and date, and a short introductory paragraph.

Why create a Web site?

According to Samis (1999) Assistant Curator of Education and Program Manager, Interactive Educational Technologies, "We had just completed our multimedia programmes for the new building in 1995, when a major corporation approached us. They offered a year of access to technology and Web hosting, if SFMOMA would create a site within three months to showcase at an interactive trade fair in Las Vegas." It was done, and since then there have been two remakes and presently staff are working on the third.

Another new Web site at SFMOMA, and policy

SFMOMA is attempting to move into new territory with its site in progress, the previous sites have been useful tools for visitors, but did not generate the dialogue that the modern museum felt it was looking for. Zorich (1997) supports the need to create new Web sites, believing that museums should create fresh looks and provide new information to meet the rising expectations of virtual visitors (p. 174). The physical SFMOMA experienced a similar situation when it re-opened in a new building in 1995,

visitor numbers tripled. Not all museums can build new spaces, but they can re-design the Web site and provide new information.

There is no Web site policy document at SFMOMA, and as Jennifer Trant (1999) Executive Director, AMICO stated, "Each institution should evaluate the use of this communications tool, as they would any other, and come to a conclusion about [the] role that it can play for them." According to Sarah Borruso (1999) the SFMOMA Web Coordinator, "Creating a Web site has meant that staff have had to re-evaluate the museum mission (Appendix E, 3) and specifically address how we want to portray the museum online to a world-wide audience. The process gave us an opportunity to get a perspective on the museum as an organization. We realised that we must re-evaluate how we present ourselves, and with endless options, the challenge is doing it in a succinct, interesting and comprehensive way."

Who creates the Web site?

Creating the site has meant new staffing and collaborations with outsiders such as Web designers. The Web Co-coordinator was hired in 1997, and in the present redesign phase, SFMOMA is working with a large Web design company. According to Samis (1999) "To ensure input from all staff whose departments and activities are displayed on the site, we formed a Web steering committee consisting of key people from Education, Curatorial, Marketing and Communications, and Publications, as well as those involved in interactive technology. The committee meets once a month and makes the strategic decisions at a policy level about how they are going to move forward." Input from staff is important, as Samis (1999) added "We make an effort to enlist feedback from all the planners, holding focus group meetings with all the members of the committee, soliciting ideas and prioritizing them. We revise, revamp and enhance each department's presence several times in the process."

What does the site provide?

Samis (1999) stated, "Visitors look for the schedule of events and exhibitions, information on the collection, a chance to use the site as a resource to understanding modern art, or to view the Web sites from our collection that we show on the site." When discussing what Web sites should include, John Weber (1999) Leanne and George Roberts Curator of Education and Public Programs, said "There is much to

consider, a Web site should mirror how you want it to be used, echoing how visitors might hunt for information, or transactions, online. Teachers for instance are looking for certain things, and they should be there. What is Web appropriate, what can you have that people want to come to, that might achieve the aliveness of a good interactive tour?" Learning from their previous sites, SFMOMA staff wants to provide "deeper experiences and more dialogue between the museum and visitors" (Weber, 1999).

Staff is also concerned about "working closely with artists on how to represent their work online, and making such information an educational resource for future reference" according to Weber (1999). For example, an interactive Web feature on Bill Viola (SFMOMA, a) was created to coincide with his exhibition at the museum in 1999. This component shows each installation exhibit, included with a QuickTime video and text description about its meaning. One section demonstrates how some of the works are made, and another section comprises video clips of Viola talking about his work.

Figure 3.5 Bill Viola Web feature Exhibition Overview page

The SFMOMA site offers many transactions, some to be expected, others are new and experimental for the museum. The Web site provides education, public relations, communication and curatorial services; which includes a recent undertaking to commission Web art projects, and to encourage discourse, or conversations on the Web in the future. The Web site is also showing other Web sites that are now part of the permanent collection.

It is planned that online dialogues will be a prominent feature of the new site. Staff agrees, as Samis (1999) stated, "that this is an important form of transaction, and will provide feedback from the public that we do not hear in the physical setting where it is rare to receive comment cards responding to art works in reflective ways."

Weber (1999) also stated "Another aspect that we are working on for the future, once we have dealt with copyright issues, is to provide access to the collection online." Because the collection at SFMOMA is primarily modern and contemporary, staff is working with a considerable amount of works for which the museum does not own copyright. Therefore, they must seek permission from others before making images of works, (and associated information), available on the Web site. This issue is compounded for the museum because they also digitize art for their CD-ROMS, which they make available for purchase.

This Web site is another channel for the museum's curatorial message, but according to Samis (1999) "Because of the transactions it offers, it is quite different to the physical museum. It is another forum, or medium, in which artists can create and deliver work, an information resource as well as [potentially] a lively place of dialogue, where people come from around the world to partake in transactions, to exchange ideas, to learn, to see online exhibits, in addition to the public relations, sales functions and so on."

Features

The site emphasizes the museum's active interest in digital technology. In the information section, under education + public programmes, there is a section on interactive educational technologies. It describes the in-house interactives that have been created at the SFMOMA for use in the galleries or on the site, for instance, the Bay Area ArtFinder. Created by the museum, the ArtFinder is a multimedia guide to non-profit art spaces, artist-run galleries and museums.

Under the art section, a visitor may search different sections of the permanent collection. In the section under 'architecture and design' Web sites are listed. It has

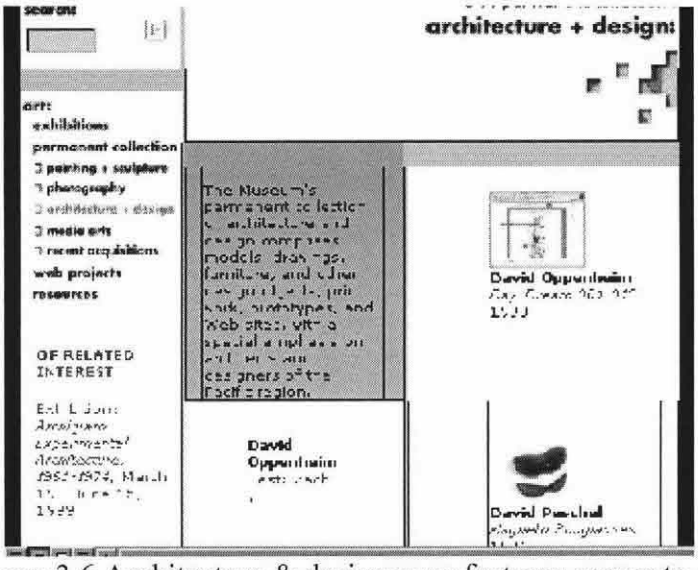

Figure 3.6 Architecture & design page features access to art Web sites

been a recent initiative of the museum to collect Web sites, and images of several home pages are pictured. If a visitor wishes to visit the site, they click on: Click here to load Web site, and are linked from there.

SFMOMA's first Web art commission, *Predictive Engineering2* by Julia Scher, is online. Under the heading Web projects, (SFMOMA, b), it is explained that the museum must now meet the challenge to the integrity and logic of its method of presenting art. The museum's traditional role has been challenged by artists who embrace the technology of mass reproduction, appropriate everyday objects, or create ephemeral work, and they must respond to this.

The primary focus on the new site is to promote a forum for dialogue about contemporary art. To take part in this transaction, the online visitor clicks 'conversation' and finds an option of two different discussions. One discussion is initiated by a short curator's essay, the other by different conversations about work in the Permanent Collection. The short essay, "Framing the Digital: The Modern Art Museum and Electronic Media" is the precursor to visitor/curator visitor/visitor dialogue to take place in a conversations column alongside it.

The five other discussion prompts under the heading Permanent Collection are less intellectual. They are prompted by an image of a work of art from the collection accompanied by a short interrogative statement. For instance, on clicking a thumbnail image of the sculpture *Michael Jackson and Bubbles* by Jeff Koons, the image enlarges, and a caption appears stating: "Jeff Koons often hires other artisans to fabricate his work for him. This was the case with this large sculpture, *Michael Jackson and*

Bubbles, 1988, which was based on a publicity photograph of the rock star. Does this matter? " (SFMOMA, c). Visitors are invited to respond to these questions to begin the discussion.

What is not provided?

There are many transactions not provided on the SFMOMA site, unlike the FAMSF and BAM sites it is not a research tool and does not offer extensive access to the collection, although staff hopes to in the future. They hope to provide a forum for teachers also, and are working with teachers around the state on this, according to Samis (1999). The site does not offer anything for younger visitors, but staff is considering posting art works by kids.

Presently there is only one avenue for contact with the museum, thus staff get limited feedback from users. Through the site, they do not evaluate users, so staff does not know if they are providing what users want, or who exactly is accessing the site. Much of this, including sophisticated "follow me" tours online, and more sales generated through the online museum store, are planned for the future.

In conclusion

In this chapter, I have described the transactions available on the three art museums' Web sites, and the perspectives of the staff involved. In the following chapter, I analyse the transactions that are provided, in order to compare the transactions supplied on the Web and in the physical museum, as well as compare the transactions across the museums as I seek to conclude if greater access is provided through the Web.

Chapter Four

Analysis

In this analysis, by drawing together information from previous chapters, I will demonstrate what types of transactions are provided in each space. This will assist in elucidating the similarities and differences between the transactions at the three Bay Area art museums' Web sites; the similarities between transactions on the Web and in the physical museum; and the differences between transactions on the Web and in the physical museum.

As I have observed in previous chapters, the World Wide Web offers vast possibilities for a museum to provide either new functions or traditional ones in updated and different ways to visitors. The Web has allowed the museum to experiment more than it could do in the physical space with some new initiatives, and to provide additional access to its various existing functions and its holdings. Why is it that the World Wide Web is able to do this? The Web is a virtual, collaborative, social space that promotes the cyber-business transaction known as e-commerce, exchange of information, and global broad-based communication.

E-commerce

E-commerce, (short for electronic commerce, and consisting of a collective of customers, companies selling to them, and the process of conducting transactions over the Internet), is another component of the Internet. As the Web has grown, e-commerce has rapidly become the new commercial outlet of the late twentieth century, taking us from "face-to-face interactions to on-line transactions" (Beer, 1999, p. C-1). Many museums might be planning to, or are already involved in on-line business transactions, by supplying merchandise, tickets for entry, group tours and events, membership subscriptions, and facility hire through the museum's Web site. Some museums may even be considering charging for the online information. There are billions of dollars spent on the Internet each year and museums are aware of how useful a portion of that revenue would be.

Unlike most of the commercial sites, such as the online bookseller Amazon.com, museums in general have not yet adopted the personal service approach common to these commercial cyber-operations. Museums are not joining the Web from the competitive business world, and although terms such as clients and customers are being used by some museums when referring to visitors, most museums still talk of visitors, and what the visitors want.

According to Professor Joe Camacho (1999), "the whole shift of the Internet has been towards e-commerce." In order to encourage transactions, many of the commercially oriented sites use tracking mechanisms to assist them to gauge a visitor's interests, in order to cater to those interests in the future, thus encouraging repeat visits. "Many sites initially require users to fill out registration profiles, and then they keep track of the visitor's movements on the site and create a personalised relationship with the customer. Visitors may find that when they log on to a site they will be greeted by name. In the e-commerce world, a visitor is viewed as a customer, and will likely be offered a selection of wares that suits their tastes gauged by their profile of purchases and interests" (Camacho, 1999). A similar situation on a museum Web site could bring to the visitor's attention a forthcoming exhibition by an artist that they had previously searched for on the database. Presently none of the case studies' performs this function, therefore they do not provide the personal approach that may encourage visitors to make many repeat visits.

Value- adding with information

The World Wide Web is a place to access and exchange information. Virtual visitors access news, homework sites, the best prices for cars, and art museum programme schedules. In the art museum, it takes effort to disburse information in the physical space, due to constraints of time, space, finance and staffing. Smith (1998) highlighted the many ways that digitization assists the museum to do traditional tasks more effectively and efficiently, for instance, making collections digital can implement effective collection management practices, easier and quicker researching, and help to encourage conservation. There are also benefits for the public, that Smith (1998) refers to as *value-adding,* providing information that is additional to what is available in the museum. He believes it is the "single most important activity a museum can undertake to remain viable in the online world" (paragraph 63). Smith lists what he judges to add

value online: extensive historical context; detailed provenance; links to other objects in the collection; hotlinks to other relevant digital collections; multiple access points, to give virtual visitors numerous opportunities to find objects in the collection and to realise links between objects; new ways of experiencing an object, for instance by using holograms and 3-D effects; rotation of an object to give multiple viewing points; audio and visual to provide stimuli and information; animation or recreation of the context of the object's original existence; additional services such as helpdesks; the ability to download the object in multiple formats; copyright information; names of other museums with similar collections; names of reference books and journals relevant to the object (1998, paragraph 64).

While value-adding is at the core of e-commerce and other Web environments, not all museums "value-add" to the extent that Smith's list suggests is possible. When compared with his list, BAM and FAMSF in particular provide a lot of this added value in different ways, due to the fact that they support collection databases on their sites. However, none of the museums provide a recreation of the context of the object's original existence, which would create a new way to tell the story of works in their collections. They tend not to provide an extensive historical context for all their works of art (they all provide short contexts for a selection of works), or specifically list hotlinks to museums with similar collections. Although BAM supplies links to other art sites, the nearest to the latter example is the Bay Area ArtFinder on the SFMOMA site.

Another way that the three museums could be value-adding to the visitor experience is by creating online collaborations with colleagues at other institutions, similar to ArtsConnected (Walker, b), a collaboration between the Walker Art Center and The Minneapolis Institute of Arts. For these three institutions, they may not yet consider utilising the story telling capabilities of the Web, or the opportunity to jointly create online programmes, especially amongst themselves, a priority.

Communication promotes a sense of ownership

Arguably one of the greatest communication technologies invented in the twentieth century, the Internet promotes global communication. Those museums with an online presence are providing a new method of communicating and are reaching a new type of visitor, the virtual visitor. In order for this type of communication to be successful, on-

line museums must be easy to find, enter and navigate through, otherwise they won't gather an audience to communicate with. Borysewicz (1998) stated that if navigational aids are provided to direct users through the site, and the site content is constantly updated and changing, then users will be encouraged to explore. He also maintained that by providing access on the Web, museums are able to provide the public with a sense of ownership. "Museums need to be able to respond to their visitors directly, to make them feel confident that they are being heard. In actual exhibits, this kind of active response can be almost impossible. On-line programmes can request contributions from their users and allow users to construct their own content or interact with the museum directly" (Borysewicz, 1998, p. 115).

The community has an opportunity to be heard on the Web if museums provide it, and, as Ann Mintz (1998) indicated, media is an ideal tool to address a challenge museums have been facing, to present multiple points of view. Borysewicz (1998) adds that it is also an ideal medium through which museums may exchange objects with the public, by inviting them to 'collect' or download material from the Web, and in exchange accept data from the public as contributions to material (p. 114).

Value-adding, giving the user a sense of ownership, providing multiple points of view, exchanging objects with the public, are all factors that make the visit to the site a more meaningful experience for users, especially for those who do not always feel included in the physical museum. Each of the virtual museums being studied here provides some of these transactions and not others, so where do the similarities and differences in transactions between each Web site lie?

Similarities and differences between the three museum Web sites.

When we examine the transactions offered on the Web sites of the three Bay Area museums, similarities in the type of information that they offer stand out. All the sites provide the hours of operation, directions to the museum, and exhibition scheduling, yet they are presented and utilised in different ways. Several transactions have this combination of similarity and difference, such as the design content of the sites, including navigation and interactivity; the collection databases; the amount and type of exhibition information supplied; opportunities for feedback, dialogue, or conversations.

The table below indicates how many transactions are held in common (similar) but are performed or organised in different ways (different).

Web Site Content	BAM	SFMOMA	FAMSF
Entrance	three screen entrance	animation	first page entrance
Exhibition information	temporary: in-depth coverage	all exhibitions: equal coverage	temporary: in-depth with slide shows
Advance exhibition schedule	up to 1 year, text	few months, images	few months, images
Previous exhibitions	back to 1994/1978	back to 1995	back to 1995
	MATRIX : archives 20yrs of shows		
Community representation	children's art works feedback/queries	conversations	-
Hotlinks to other sites	Many	to artists' Web sites in SFMOMA collection	-
Collection database	collection, Matrix, film	-	Imagebase: aiming at whole collection on-line
Staff contact list	yes	departmental	yes
Comments/Feedback	yes (placed online)	Yes (not placed online)	yes (not placed online)
Conversations/ Dialogue	yes (online)	yes (online)	-
Store	Yes	yes	-
Kids' pages	Yes	-	-
Evaluation survey/tracking	-	-	-
Virtual tours	partial, of building	yes: building and exhibitions	of some exhibitions
Site map	Yes	-	yes
Interpretation	contextual: exhibition, individual works, and collection	contextual: exhibition and collection	contextual: exhibition, and some collection
Political forum	-	-	yes
Audio/Video	yes: occasionally	yes: occasionally	-

Table 4.1 A list of transactions supplied on the three museum Web sites.

Navigation

Ease of navigation through all the sites comes with experience of each site. Navigation is connected to visit purpose, either to explore, (navigation may be non-linear), or perform research (navigation is likely to be linear). It may take one tour through a space before we become acquainted with its geography, and these Web sites supply site maps, or virtual tours, of the physical sites to assist us there. To tour the Web site we must read linking texts and follow from link to link before we grasp an understanding of the layout of pages and information. We may even follow a link that takes us out of the site. For example, by clicking on the Carrie Mae Weems links, which are hotlinks, on the BAM Web site, we can reach other sites that are about the artist but not related to the museum itself. While surfing the Web we have the opportunity of partaking in

innumerable mysterious voyages through cyberspace, but simultaneously we may be drawn away from our initial intentions, and spend a considerable amount of time going where we didn't intend to. This demonstrates both how much we are controlled by the restrictions on our movement in physical space, and the free choice learning opportunities that the Web provides for the museum to adapt into its functions when presenting itself online.

Exhibition Information

The three Web sites provide a variety of ways to access exhibition information, inviting visitors to explore some exhibitions, particularly special exhibitions, in greater depth. On the SFMOMA site, all exhibitions are described and accompanied by one or two images, but larger touring exhibitions are given more space, and occasionally a stand-alone Web feature. The museum fully communicated the Keith Haring and Bill Viola exhibitions to visitors in text, image, audio and moving image, through Web features. At the FAMSF, special exhibitions rather than collection shows get front-page links, and at BAM, the special exhibitions are placed online accompanied by extensive interpretive information. These special exhibitions are temporary, often non-collection touring shows, and the Web is used like a marketing tool to raise their profiles. In the case of the SFMOMA and FAMSF sites, a Web feature or special exhibitions are highlighted on the first page to gain our attention.

The FAMSF communicates exhibitions in a standardised manner by providing a synopsis of exhibition content through short online slide shows, and associated information such as a short essay and press releases. Some exhibitions are available in virtual tour form, but these are clumsy to view and time consuming to download on screen.

On the BAM Web site, the collection shows are briefly introduced and the special exhibitions are generally fully explored on the Web site. They often include images of all the works, accompanied by detailed descriptions and additional, sometimes lengthy, information. In retrospect, other than the image quality, it can be like visiting the museum itself.

A virtual visitor is sure to be enticed by the informative fragments, or the all-encompassing interactive state-of-the-art features supplied on the sites. Ideas, and even a feel for the real experience, can be transferred to the virtual visitor exploring these exhibition sections.

Design

The design of all the sites has been described in the previous chapter, and it is notable how much each site represents the look of its own physical space. For instance, the FAMSF site is classical and conventional in its design. The SFMOMA site strives to be more contemporary in its design, just as the new building is. Unfortunately, the FAMSF and BAM sites are so straightforward in design that they fail to give the sense of excitement or adventure that a trip to the museum or other Web sites sometimes gives. Sites elsewhere on the Web, such as the Walker Art Center (Walker, Online) invite a greater sense of exploration. The Web has become more of a graphical environment over time, and museums need to keep up with the standards of the overall "look" of the Internet, a factor that museums such as the Walker Art Center have attended to more quickly.

Interactivity

Although the experience on the Web site is considered to be interactive, true interactivity is only provided on the new SFMOMA and BAM sites. On the SFMOMA site in the Permanent Collection section under both Architecture and Media, and Web Projects, the visitor may experience interactive Web art, either commissioned Web art, or sites in the collection. BAM now provides this interactivity in some online artists' projects. Such transactions, in which the visitors' response is required in order to alter the content of the work, are beginning to be made available on these sites.

Collection information

At all sites, the interpretive and database information is far greater than the amount one can gather on a single visit to the museum. BAM and FAMSF, for which this is a priority, are focused on providing information on the collection holdings and have made great advances in supplying data in the form of an information base and an Imagebase on their respective sites. Although the SFMOMA, according to John Weber (1999),

would like to do this in the future, it presently only supplies additional contextual information on a small selection of the collection holdings.

Information is supplied on each site differently, thus elucidating the difference between data and information. The FAMSF Imagebase is an information database of images, (thus is it called an Imagebase), containing keyword links to all textual data. For some of the works, contextual information is available, but this is limited, in contrast to the kind of information supplied on the SFMOMA site for a collection piece that is usually in the form of a brief curator's essay.

On the BAM Web site, the collection search function is very complicated and not user-friendly. A visitor has to know what they are looking for in order to begin the search. Images are included but only allow for one enlargement factor to half screen size, a stark contrast to the remarkable ZOOM feature on the FAMSF site. Lengthy descriptions are supplied to cover the theme or period of the work, and there are also extended essays about many of the individual works. Thus, they supply information rather than data.

The BAM and FAMSF sites clearly aim to provide visitors with collection information, but in different ways, BAM supplying information and FAMSF image data. Both invite reciprocity, such as seeking information from visitors about artworks.

Feedback and comments

There has been much external criticism, and internal recognition, of the one-way transfer of information in the museum from museum to visitor, and the associated impression from visitors that the institution is always in control. Now museums have the opportunity to utilise what the new technologies offer, and provide feedback, comments or conversations sections on their Web sites. All of the three sites do this in different ways, and thus the visitor does have an opportunity to reciprocally affect or influence the real or virtual museum.

The FAMSF seek different forms of feedback and comments from virtual visitors. The museums ask for further information on works of art in the Imagebase, a form of reciprocation not visibly sought out in the physical museums. Feedback of a general

nature is also solicited in a line of text at the base of each page stating: Send your comments and feedback to: guestbook@Web.famsf.org.. Ensuing dialogue between visitor and museum staff is not available on the site. Therefore, dialogue is encouraged but not made public.

On the active SFMOMA site, on the Who is SFMOMA? page (SFMOMA, d) visitors are invited to e-mail the Webmaster with questions or comments. Borruso (1999) stated that she "receives up to ten messages a day". On the site in development, one of the main intended additions is the new conversations feature where critical dialogue and a more general art discussion will be encouraged. Rather than feedback and evaluation, the museum staff is intending to encourage online dialogue, and to bring in many voices to discuss modern and contemporary art. This communication will be encouraged and moderated by curatorial staff.

At BAM, the Comments section poses a clear invitation for reciprocation from visitors and invites them to "Talk to us!". It states that BAM would like to hear from visitors, either about the Web site, or an exhibition, film, programme or event, that the visitor attended. It prompts responses by asking questions. The visitor is apologetically informed that the museum does not have staff resources to answer questions, but seeks feedback and suggestions, and over time, questions have been answered on-line. Thus, visitors are invited to transfer their experiences and ideas to the museum.

Visitors are also invited to exchange comments about some of the exhibitions on line. This was especially successful on the *Carrie Mae Weems* (BAM, e) feature, and *The Art of Joan Brown* (BAM, f) kids' pages. On the former, visitors were asked to add their comments about the exhibition, prompted by general questions about their thoughts and experiences. On the latter, children were asked to answer specific questions about particular works of art. However, there was no on-line response from the museum.

Of the three Web sites examined here, BAM encourages the widest variety of responses by placing comments and response segments amongst interpretive material, and a Comments section permanently on the navigation bar, which appears at the top of each page. As well as this, the first transaction encountered on the General Information page

invites the Web visitor to send in their e-mail details in exchange for regular updates of BAM/PFA activities.

Transactions for children

There are numerous Web sites just for kids, and many sites that include child-friendly transactions and others with none at all, and museums are no exception. The FAMSF and the SFMOMA include no activities for children on their museum Web sites. BAM provides transactions for children. For instance, there is a permanent *Interactive Multimedia Guide for Kids to the UC Berkeley Art Museum* (BAM, g) called *Get the Picture* available as the first item on the Education and Events page, and educational activity material attached to pages featuring the work of artist Joan Brown.

The section above discussed a range of transactions that are provided on the three Web sites, including their differences and similarities. In the following section, the similarities and differences between transactions in the museum and on the Web are explored.

Similarities and differences between transactions in the museum and on the museum Web sites

Influences over transactions

There are many factors that make transactions on the museum Web sites similar and different to those in the physical museum. Some of these transactions are extensions of what occurs in the physical museum, therefore providing a continuum of innovative practices from the physical to virtual space, and others are new functions for visitors, adding to the promises of the New Museology. When observing the continuum of transactions at the three Bay Area art museums, it is useful to firstly compare the situations encountered in both the museum and on the Web that have an influence on the type of transactions visitors have in each space. These are explored in Table 4.2, and are based on the study of the three Bay Area art museums. For an explanation of the * numbered factors please turn to Appendix D.

Influences the transaction	*on Web site*	*in physical museum*
availability	global	local
distance to site	not an issue	can be problematic
nature of experience	solo	solo or social *1
research process	fast	time-consuming
visitor status	anonymity/pseudonymity	face-to-face
dialogue/feedback	many opportunities	few opportunities
community	represented	not always represented *2
interactivity	digital	physical
access mechanism	is the outreach tool	creates the outreach tool *3
evaluation procedures	no evaluation	regular evaluations
awareness of audience	don't know audience	know audience
child friendly	few kids' programmes	many kids' programmes *4
access to staff	contact details available	buffered staff access *5
method of arrival	different paths	one path
audience available to	mass audience	particular audience
cost involved	free	charges a fee *6
commerce	e-commerce	commercial operations
Collection information	much information	little information/much information if available online in physical space
general information	much information	much information in different forms
atmosphere	design of site denotes atmosphere	design and human interface create atmosphere
Security	no surveillance/ none apparent	surveillance omnipresent
Ambience	quiet and private	noisy and public
navigation	non-linear/linear by choice	linear *7
points of view	multiple	usually one
movement in space	free	controlled

Table 4.2 Situations that influence transactions in the physical museum and its Web site (based on the study of the three Bay Area art museums)

Transactions at all sites.

As stated earlier, a transaction as defined for this thesis is *a communicative action or activity involving two parties or things that reciprocally affect or influence each other.* The types of transactions described in the text of chapter three can be placed under the different functional categories of general information and research, navigation, education & interpretation, exhibition, commercial operations, architecture/site, security. Categorised under these headings, and listed in Table 4.3 on page 74, transactions occur both between two parties and two or more parties, and fit a range of related partnerships between the museum and the visitor, such as advertiser/client, provider/gatherer, producer/consumer, seller/buyer, sender/receiver. By separating out the transactions in this way, we see the transactions that are either shared between, or unique to, the

Information and research	
Physical site	*mail-outs, pick-up brochures, resource access, information desk, street banners, library, gallery information sheets.*
Web site	*resource access, hotlinks, information page, staff directories, schedules, e-mail, image downloads*
Both sites	*resource access*
Navigation	
Physical site	*entry point, front desk, maps, access to location, access speed and ease of movement, linear organization, programmed, social*
Web site	*entry point, menu, site map, access to location, access speed and ease of movement, non-linear, free choice, private*
Both sites	*entry point, site map, access to location, access speed and ease of movement*
Education and interpretation	
Physical site	*labeling, tours, kids' activities, dialogue/conversation, comments/feedback, evaluations, moving image, story telling, computers, readings, lectures, children's gallery, symposia, multilingual, school programmes, workshops, artists' talks, special needs, audio tours, family programmes, performance, publishing, outreach activities, reading areas, study centers, guides in galleries*
Web site	*labeling, art work descriptions, virtual tours, kids' activities, dialogue/conversation, comments/feedback, moving image, monolingual, school programmes, contextualization of works*
Both sites	*labeling, tours, kids' activities, dialogue/conversation, comments/feedback, moving image, school programmes*
Exhibitions	
Physical site	*temporary exhibitions, permanent collection*
Web site	*virtual exhibitions, temporary exhibitions, permanent collection, previous exhibitions, future exhibitions*
Both sites	*temporary exhibitions, permanent collection*
Commerce	
Physical site	*shop, café, entry fee, special exhibition fee, donation, membership, space hire, events fee*
Web site	*shop, membership, space hire*
Both sites	*shop, membership, space hire*
Architecture/site	
Physical site	*design of physical, rarely changes, access to location, limited hours, finite space, localized, interactive*
Web site	*design of virtual, frequently changes, access to location, twenty-four hours, infinite space, global, interactive*
Both sites	*access to location, interactive*
Security	
Physical site	*guards, cameras, alarms, ropes, self-regulating, copyright*
Web site	*Copyright*
Both sites	*Copyright*

Table 4.3 Transactions at all sites

physical museums and their Web sites. The differences exist because of decisions made by staff regarding the content provided, (staff controls), as well as the nature of the spaces, (space controls), and what staff can and can't do in them, which is limited by such things as space, software, staffing, time or finance. Other factors, such as what the

visitor is capable of, must also be taken into account. The Web surfer's hardware and software influence the speed of access and problem free navigation. A map and the visitor's ability to comprehend it may affect their experience in the museum. Other factors relevant here are listed in Table 4.2 on page 73. The two types of sites are very different, but depicted in Table 4.4 are similar transactions that they both provide, albeit in different ways. For instance, at both sites such things as an entry point or map of the site are important to the experience. This table helps to demonstrate how these transactions are differently presented, and therefore experienced.

Similar Transactions	*Physical Museum*	*Museum Web Site*
Entry point	Entrance door, foyer, staff	Home page
Map of the site	Portable brochure	Found in navigation tools
Access to location	Depends on location and transport	Depends on modem and server, hotlinks from other sites
Access speed /Ease of movement	Depends on numbers of visitors, popularity of exhibitions, design of building	Depends on design of site, and visitor's modem and server
Tours	Guided by person or audio-guide	Self guided
Moving Image	Film/video programme or film/video in installation	Thumbnail video segments of art works or artists
Shop	Many choices	Limited choices
Interactivity	Interact with people, some exhibits, technology	Interact with technology
Comments/Feedback	On forms or in comments books. During opening hours. No response.	Encouraged by questions on the Web site. 24 hours. Responded to through e-mail.
Dialogue/Conversations	At lectures, symposia, docent tours. Certain times only. Two-way response.	Encouraged by questions on the Web site. 24 hours. No response and moderated response.
Kids' Activities	Specific group events, hands-on	Activities. 24 hours.
School Programmes	Specialised service with education staff, by appointment.	Teachers' guides, resources and activities.
Temporary Exhibits	Temporarily on display. Real object.	Stored for future access. Copy only. 24 hours
Permanent Collection	Part of collection on display at any given time.	Can potentially provide access to all items. 24 hours.
Membership & Space Hire	Meet with staff	Follow instructions online/virtual tour of spaces

Table 4.4 Similar transactions are provided in different ways.

Comments/Feedback Dialogue/Conversations

Opportunities for visitors to comments or feedback and engage in dialogue or conversations are extremely different in the physical and virtual settings. Firstly, in the three art museums discussed here, this visitor noted that Comments/Feedback books or cards were not clearly in evidence, although they do exist. However, on the Web sites, including the existing SFMOMA site, there are more obvious invitations for comments.

Conversations or dialogue about art works are rarely invited in the physical museum, and mainly occur after a specialist's talk, a symposium or during a guided tour. Opportunities for the visitor to ask questions or to add their comments to discussion are not readily available in the physical space, but can be made at any time in the virtual. Good examples of this are on the BAM site and on the future SFMOMA site, where, in the latter as previously described, discussion of art works is encouraged and will be moderated. On the BAM site, there is no museum response to visitors input to Conversations sections, therefore any dialogue that ensues is only between virtual visitors.

Different transactions in the physical museum

General information

Brochures are generated from the physical site, as is the information on the Web site itself. The greatest difference between the two sites, and perhaps the most obvious, is that most of the information-based transactions that occur at the physical museum are people-centered operations. A visitor to the physical space knows that there will always be a person at an information or ticket desk, and other people throughout the museum to answer questions, while the virtual visitor to these Web sites finds this information in the form of text and images, and occasionally in moving image and sound.

Research & outreach

The physical museum supplies a range of real space for visitors to access research information in, such as a reading area, a library, or a study center. The museum's Web site acts as the transactional tool for two of these, the reading area and the study center, as it supplies much of the information provided in these physical areas. The amount of information available on the BAM site for the exhibition *When Time Began to Rant & Rage* is a good example of this. Equally, the SFMOMA and FAMSF conduct outreach programmes from their museums, and the Web site, being an extension of the museum, becomes an outreach tool.

Lectures, performance programmes and workshops

Many transactions supplied in the physical space will soon be incorporated into the virtual, (although not solely available in the virtual), the same way that entire exhibitions are now. While not yet found on these three Web sites, elsewhere it is possible to access talks, readings, lectures and whole symposia proceedings online. Assuming museums do not charge for them, it will not be long before some transactions - presently reserved for ticket holders in the physical space - will be freely available on the Web site.

There are, however, some human based activities that would be hard to replicate as successfully in the digital world with the technology that is presently available.

BAM provides story telling in conjunction with some exhibits. Although it has been stated here that the Web is a story telling tool, this type of story telling, which includes performance, may remain for some time better placed in the physical space. Until it can be successfully relayed in the virtual space through full screen video and audio, the nuances and other feelings expressed in this type of work would be lost on the Web. It is difficult to imagine how interactive storytelling connected with works of art would survive on the Web site, although as technology advances it cannot be ruled out as a successful real-time occurrence in the future.

Similarly, art workshops are another difference in transactions held in the physical art museum and the Web site. Science centers put projects and experiments online, often in real-time, but it is hard to speculate whether or not a painting workshop, in which various materials and individual instruction are needed, would be as successful. Many of these activities are best held face to face in groups, and would lose much of the social interaction that comes with such a class if offered on the Web. Distance learning exists on the Web now, and although this provides a formal learning experience, museums may one day develope more distance learning programmes using their collections.

Linearity versus non-linearity

I have suggested that the route through the physical museum is linear, and that we are often controlled in our viewing of an exhibit which prescribes to a certain pattern, dictated by the layout of rooms and exhibitions. However, as Cameron (1968)

suggested, the exhibit has a three dimensional nature and this prevents the museum from enforcing a linear viewing. Visitors may walk around object cases, thus upsetting the logical nature of the exhibition display. Cameron's point is justified in that the museum may impose a linear story through a display, but where it incorporates freestanding objects visitors may be enticed to move away from the rigidity of the linear sequence, thus 'zigzagging' their way through the exhibition. However, in my personal experience of such display techniques, most viewers will return to the linear 'pattern', not wanting to miss anything or divert and change the sequence, especially when viewing the chronological development of an artist's work. The way in which a visitor moves through the exhibition will depend on its type, either chronological as just referred to, or an array of collection objects with no particular sequence intended, in which a visitor may browse through in a non-linear pattern. Web sites are designed to a pattern also, but there is no pressure on a visitor to follow any particular path, and non-linearity is encouraged by the technology, which allows us to go anywhere that links will allow, and it is easy to go back to what we missed if we wish to.

Set hours of operation

Programming is different in the museum because most activities are scheduled to occur at certain times, whereas one may go on a virtual tour of the exhibition at any chosen time. The restrictive museum hours are an obvious difference between the two sites, for whatever transaction a visitor wishes to partake in, it must fall within the set days and hours of operation, at the allotted time. In contrast, the Web is accessible twenty-four hours a day everyday, unless the server is down, making the site totally inaccessible.

Commerce

The three physical museums charge an entry fee, and a fee for additional programmes, but content on the Web sites is presently accessed or downloaded for free. It may only be a matter of time before fees, or a registration, are required to access the collection databases such as on the AMICO (Art Museum Image Consortium), (AMICO, online), site. Both BAM and SFMOMA have introduced e-commerce to their Web sites by placing their museum shops on-line, and they all offer membership subscription and space hire. Presently it is unlikely that commercial operations such as the museum café and restaurant, an all too important and expected part of the physical museum experience will go online, other than for catering purposes.

Security

A noticeable difference between the sites is the pervasive security in the physical museum and the lack of surveillance in the virtual. The SFMOMA sites are stark contrasts, as visitors are constantly surveyed by vigilant guards and cameras in the physical museum and there is no surveillance on the Web site. Surveillance, or tracking, is something that, as museums add tracking software to their Web sites, could become a reality in the virtual experience of the future, although presently none of these art museums has plans to do this. The written reminders on the FAMSF and BAM sites to observe copyright are presently the most evident signs of security on these Web sites.

Different transactions provided by the virtual museum

Hot links

The differences that the Web provides are made possible by its digital nature, although they are not all only virtual functions. For instance, the Web provides 'hotlinks', which are links to other sites such as art or art museum sites, rather than links from page to page. Such support between museums on the Web is almost unprecedented, not having been made visible in these physical museums in the same way. Museums are known for sharing touring exhibitions or collaborating on exhibitions, but it is not likely that on visiting a museum one will see conspicuous recommendations to visit other institutions.

Staff contact

Web sites regularly supply contact details for all museum staff, including titles, telephone numbers and e-mail addresses. On the BAM and FAMSF sites, one is frequently invited to e-mail the museum, a function that is not openly demonstrated in their physical museums. The Web site enables us the freedom of access to staff, fostering a personalised, (yet faceless), approach that the physical museum does not appear to welcome.

Navigation and private experience

In the museum, we use a map, and in the virtual, we use a menu of navigation 'buttons' or 'links'. Throughout the site, there are navigation tools to guide us, including one to take us 'home', to the entrance. If visiting alone, our experience with the virtual is

predominantly private. Many visitors choose to experience the physical museum alone, although most visit in groups, and when there, other visitors surround them as they partake in the transaction.

Exhibition and collection information

The three Web sites provide us with different options when we look at art works, and we find both data, and contextualising commentary. The Web, providing more space than the museum for immediate object related text, allows for in-depth explanations about works of art, both on show and in collection storage. The Web is a great resource as well as a preserver of works of art, enabling access to the image and associated information without bringing works out of storage.

Information on the Web provides a context that may not be provided in the physical museum for many reasons, and at times the Web becomes the context itself, in the example of Web art. In the physical museum, such information may be in a catalogue that not every visitor can afford - now it is freely obtainable online.

Virtual access to exhibitions at any time.

The Web site offers the opportunity to visit an exhibition before seeing the real thing in the museum. It may be in the form of a virtual exhibition that we tour online, or images and descriptions available page after page, as provided on the FAMSF and BAM sites. Even more advanced are the Web features, (on the SFMOMA site), that may even provide background information on the making of an exhibition. We access these for free, at any time, and receive the confidence to feel at ease in the gallery spaces. Once it is finished, our only opportunity to view an exhibition is online, thus the Web site is a valuable resource, providing us with vast archives of past shows.

Language

The physical and virtual sites of these museums are monolingual, but the technology of the Internet has demonstrated how any organisation can be multilingual online. Being in English, however, the most widely used language on the Web, means that the sites presently do cater to the majority of their online visitors.

Image copying/downloading

It is not possible in the physical spaces of these museums to make mechanical copies, (such as photographs or other copying procedures), without special permission for certain purposes, such as art reviews. On either of the Web sites, a visitor is free, (on agreement with the site Webmaster not to break copyright), to make copies of all images available on the site. The Web sites of these three museums, in particular FAMSF and BAM, base their copying arrangement with the virtual visitor very heavily on trust.

Image copying is one of the differences between the two museum sites that highlights two concerns of museum staff, that visitors may be satisfied with viewing, and making, copies rather than seeing the originals, or may go on to create illegal reproductions of the works of art. This has always been an issue of concern for museums, but as McDonald (1998) at FAMSF stated, "Web publishing of images is no different than book publishing." Therefore, if images could already be copied, why be so cautious?

Maxwell Anderson (1997) made some interesting comments about museums, copyright, and the Web. He suggested that as more images become available online, the value of each one will decrease, and the real contest will be for the information. He stated that museums must keep to their mandates, that images should be available; and although museums might bring in less revenue due to wide distribution of such resources, they will gain by becoming more valuable to society and thus receiving more visitors (Anderson, 1997, p. 27). Copying of digital information has become a big concern for museums in recent years, and in early 2000, Museum News printed excerpts from a new publication on this topic (Museum News 79 (1)).

Design

Design of the Web site is crucial to its usage and existence. Visitors will visit a physical museum to see its contents if they do not like the building, but the Web site must have a user-friendly interface, with interactivity, speed and ease of movement. There are thousands of other sites to click to after frustration with bad design or slow downloads. Visiting the physical museum, having made the effort to get there, and having paid an entrance fee, visitors are likely to stay for a while, but there is less invested in the visit

to the Web site. Therefore sites must be regularly updated and retain design qualities to match the expectations of the Web users.

Globalisation

The Web can be accessed from almost anywhere in the world at any time where there is the technology to do so, thus the Web site gives the museum a global presence. Although many museums have international or national reputations on or off the Web, the only way to access the physical site is to physically be there.

Significant transactions are provided on the Web

This analysis of transactions finds that the Web site is being used to provide significant transactions such as: new opportunities for feedback/comments, either one-way or two-way; new opportunities for conversations with museum staff and others; greater access to the collection; different approaches to providing collection data and information; access to an exhibitions archive; nonlinear navigation; interactivity; the opportunity to make copies of works of art; global access; 24 hour access.

One of the most effective of the above transactions is the new opportunity for the public to reach out to the museum with comments, be they criticisms or ideas, combined with the new strategies that staff can use to reach out to the public. Staffs, such as curators, have always reached out in the form of exhibitions, essays and occasional forums in the physical museum, but now they are working through the Web in a two-way reciprocal situation of exchange. Visitors have the opportunity to respond to Web (virtual) or real museum content, or even provide the museum with additional information about works in the collection.

Problems

Although the Web is a new tool with many distinct advantages for both providers and users, there are problems with regard to transactions on the Web. Reviewing the examples of transactions on the three museums' Web sites, it is apparent that they are not all openly reciprocal, even though the intention to make an exchange of some sort exists. On the FAMSF Web site, visitors do not see visitor/museum dialogue because it is not placed on the site. Visitors do not know if anyone writes in, or if the museum

responds. According to Hart (2000), the museum receives approximately twenty e-mails a day, and staffs do not place them online because they do not wish to risk the integrity of the museum.

On the BAM Web site, the museum staff only responds in the Comments section, leaving the other art-related comments sections containing only visitors' responses. The museum is either not interested, or has not got time for two-way conversations. Many of the comments have been replicated numerous times and have been on the site a long time, indicating that staff may not attend to them. There are not a great number of comments on these pages, and this may be due to the lack of museum response, visitors' disinclination to enter into dialogue about art, or the particular work of art or exhibition does not encourage responses.

Lubar (1997) writes about the success of using artifacts to elicit memories and prompt responses in the physical museum. In an ongoing project in the Art Gallery of Ontario, visitors are able to contemplate a particular painting in a separate semi-enclosed area, and many lengthy and often highly personal written responses are produced. Successful online projects that have also drawn considerable response have tended to focus on subjects that evoke feelings or memories, such as the Second World War (Marable, 1999).

On the SFMOMA Web site the content of e-mails are not made public, therefore we do not know what sort of correspondence the site is attracting. Although not yet available, both SFMOMA and BAM intend to supply moderated art discussions on the Web sites in the future, thus dialogue between visitors and staff is likely to ensue, unless visitors need to engage with the real thing in order to have strong personal responses.

The present lack of online responses to the visitors' input brings up the issue of the art museum and control. The museum asks for comments but either responds offline or not at all. Thus, any two-way or ongoing transaction is stalled by the museum. When over-viewing the transactions discussed in this thesis, it is possible to conclude that visitors are only invited to partake in transactions on the Web site that are predominantly controlled by the museum, as outlined in Table 4.5 on page 84. These transactions are

allowed to go as far as the museum allows them to, presenting a similarity between the actions and controls in the physical museum with those in its Web presence.

Type of Transaction	*Purpose of Transaction*	*Outcome*	*Who Controls*
Entrance	transfer service	guides visitor into site	museum
Exhibition Information	transfer ideas/experience	visit exhibition equipped with information	museum
Exhibition Schedules	transfer service/ideas	visitors informed of content	museum
Previous Exhibitions	transfer ideas/experiences/service	Web becomes an archival resource	museum
Community Representation	exchange/transfer ideas	visitor feels 'ownership', represented on the site	museum
Hotlinks	exchanged experiences	virtual space is broader than Web museum only	museum
Collection Data/Information	exchange/transfer services/ideas	broad access to museum's resources	museum
Interpretation/Context	transfer ideas	Web used to tell stories & supply information	museum
Staff Contact List	transfer service	visitors are welcomed to access staff	museum (& visitor controls exchanges)
Comments/Feedback	exchange ideas/experiences	visitors welcomed to comment to museum	museum & visitor
Conversations/Dialogue	exchange ideas/experiences	visitors welcomed to take part in discussions	museum & visitor
Political Forum	exchange/transfer ideas	visitors' sense of involvement	museum & visitor
Kids' pages	exchange/transfer ideas & experiences	kids are involved in the Web site	museum & visitor
Virtual tours	transfer experience	visitor gets a sense of the real	museum
Site Map	transfer service	visitors are guided	museum
Store/e-commerce	exchange goods/funds	financial transactions made easy	museum & visitor
Audio & Video	transfer experience/ideas	visitor brought closer to the real	museum

Table 4.5 The type, purpose, outcome and control over transactions on the Web site

Those transactions listed as controlled by both the museum and the visitor will only be successful if the visitor becomes involved. The staff contact list may always remain online, but it requires visitor usage in order for staff to exchange ideas with the public, and it would make no sense to keep providing conversations pages if visitors did not use them. This table also assists us to see what types of communicative action or activity take place on the Web site. Defined for our purposes as the exchange or transfer of: ideas, goods, services, funds and experiences, the most common transactions according to the table are the transfer of ideas followed closely by the exchange of ideas. The least common is e-commerce, the exchange of funds and goods. This suggests that the sites

were not set up as commercial arms of the museums, and for the FAMSF this is definitely the case (McDonald, 1998).

In conclusion

In this analysis, I have critically examined the similarities and differences of transactions on the Web sites, and in the museum and on the Web site, ending with an overview of differences - what the Web can do that the museum does not, and the controls the museum has over Web site transactions. This leads us to the final chapter of this thesis, in which I will be using this material to examine whether or not the transactions on the Web site continue the move by art museums to provide greater access to their resources.

Chapter 5

Conclusion

In this thesis I have presented an overview of the transactions encountered in the physical and virtual spaces of the FAMSF, BAM and SFMOMA, and the associated issues that arise for museums and visitors in each space, so that I might come to a conclusion about the access provided to resources at both the physical and virtual sites.

This thesis asks whether or not the museum's presence on the World Wide Web, its newest information tool, is providing greater access to the museum's resources. Why is it that I, and others inside and outside of the museum profession, consider access to be important? Would it really matter if the museum was uninviting to the public, as long as it preserved and conserved the tangibles and intangibles of our histories? The crucial word is "our", the content of collections reflects something from most people's lives. Therefore, the public feels they are represented by the content, that they have a stake in the future of the institution, and want to take part in what it offers. Access to more of the collection can also reveal to people the value of what is being stored in the museum, and that it is worth taking care of. These are factors that many museums need the public to understand in order to support ongoing funding. According to Futernick, (FAMSF, b), such access unlocks not only the monetary worth, but also emotions, a sense of history, beauty, roots, and connections to others. Access to more information will make the visitor feel informed, and better able to participate (Kotler, 1999) and have a quality experience. Access breaks the one-way hierarchical process from museum to visitor, and enables two-way transactions in which the parties become equal.

In Chapter One, the history of access to the art museum was briefly explored, from the point of view that the art museum has, in the past, presented a negative image to many in the general populace. In the West, art museums have always had a problem with regard to providing wide access, of encouraging people to understand that everyone is welcome to visit. This is exacerbated by an external perspective that they are élitist institutions, an opinion that has never been formed about the World Wide Web. There are many writings and references to back up this view of art museums, including those of Wittlin (1970), Preziosi (1994), Bryson (1997), Zolberg (1994), and Hooper-

Greenhill (1992), who also made references to the major shift and re-organisation that has been taking place within museums that is changing this image.

The transaction in the art museum was once primarily one-way, a monologic communication from the museum to the visitor. Active participation in any form by visitors had been discouraged, their points of view were not heard or communicated, and all material reflected the 'voice' of the institution, namely the curator in charge of exhibits. Many visitors remained excluded, unable to see themselves reflected in the institution. Museums were mausoleum-like in construction and operated almost like prisons, imprisoning the works of art within their walls in rigid geomantic displays (Preziosi, 1994), and affording constant surveillance of visitors just as if they were prisoners also.

Now, due to expectations of accountability and other external pressures, museums have been striving to become more visitor oriented, and are more willing to share their knowledge and to 'de-conceal'. Visitors are now encouraged to participate, they are invited to give feedback via such avenues as comments books and forums, and to reciprocate in different ways.

This type of experience, or interaction, in the museum, which is both one-way and two-way, I have termed a transaction. By combining Web-based definitions and functions in the museum, in Chapter Two I defined the meaning of this word as *a communicative action or activity involving two parties or things that reciprocally affect or influence each other*. Transaction applies to the interaction that takes place between the museum, either the physical or virtual, and its visitors. The word transaction was defined for this thesis in such a way that it could be used within the context of a discussion about museums, and is especially significant in the light of the changes that have been occurring. For the purpose of this thesis, the communicative action or activity referred to in the definition above was narrowed down to include the exchange or transfer of ideas, experiences, goods, services or funds between the two parties or things, being either the physical or virtual museum, and the visitor. Information, as a communicative action, was not included in this definition because I consider it to be a product of any combination of experiences, ideas, services, goods or funds.

It was stated that a transaction is both one-way and two-way, and that both parties give and gain, (or take), as the reciprocal act of a transfer or exchange from one to the other takes place. What influences the nature of transactions was focused on also, in a discussion of the issues of power, control, space and architecture in both the physical and virtual museum environments. The advantages and disadvantages of the Web, as well as the possibilities that the World Wide Web initiates, such as more access to collections, greater potential for dialogue, ease of access, interactivity and freedom from rules and regulations were also brought into the discussion.

In chapter three, an overview of the transactions supplied by the Web sites of FAMSF, SFMOMA, and BAM was provided to enable a comparison between transactions in the physical museum and on the museum Web site. The analysis in Chapter Four demonstrated how the Web assists museums to offer many transactions to the public, combined with the ability to give a new confidence to visitors, and a less restrictive way of experiencing much of what the museum has to offer. Transactions in the physical and virtual museum were compared and contrasted in this chapter also, in order to establish whether greater access is being provided.

Many have speculated that by placing itself on the Web the museum opens itself up to greater communication. As Keene (1997) predicted "Rather than interpretation being predominantly 'us-to-them', as now, the virtual museum will facilitate increased two-way communication between museum staff and the public, who may indeed be equally or more knowledgeable than the staff. Such communications may take place instantaneously or be stored centrally or locally for later retrieval" (p. 300). The same year, Zorich (1997) wrote that on the Web, "feedback and follow-up questions are voluminous" (p. 182), which, she felt, indicated that the public was seeking additional and different information to that which the museum currently offered. According to my interviews with museum staff, online access to staff promotes both types of communication. Often people will have the same queries that they previously would have telephoned through to the museum, but Web transactions also prompt new types of discussions, queries, or forms of input via the Web site.

In addition to any comments that an exhibition may promote, Borysewicz (1998) gave a comparison of the opportunities for dialogue in the museum and on the Web. He said

that museum exhibits encourage dialogue between visitors, and between visitor and the content. Visitors take in the information, but it is difficult to know what happens from there. In contrast, the online dialogue works well, as many people expect this type of experience, and because so many people take part online, it is easy to track for follow-up (p. 113).

This evokes the question of whether or not any learning is taking place on the Web. Museums are thought to be places where informal learning takes place, is this transaction occurring on the Web site, and in what forms?

Informal learning on the Web

Some say that learning in museums is hindered because visits are usually performed in groups, people visit voluntarily, infrequently and for short periods of time (Hein, 1998). But there is general agreement that visitors do learn something (Hein, 1998; Roberts, 1997; Dierking & Falk, 1998), even when visitors who see the same things may learn something different from them (Roberts, 1997). Roberts (1997) takes the narrative view, that the type of visitor and the museum influence the educational experience, and Hein (1998) puts forward the constructivist view, that visitors make their own meaning from active participation in an experience.

Many factors are important if visitors are to learn in the museum, from the need to feel comfortable (physically and mentally), to be rewarded by their experience, or to have an object rekindle a memory, good or even bad. In stimulus-response learning however, a visitor will not feel rewarded if their experience is a bad one, such as one that challenges their values and ideas.

Didactic forms of learning are frequently used in the museum, for instance, in the form of extended object labels, in spite of the fact that many people do not bother reading them (Hein, 1998). The art museum also provides practical activities such as sculpture making, for different age groups and for those who like to take part in discovery learning. There are many ways to learn in the museum, but little evidence to confirm that people do learn and what they learn, as there has not been extensive research in this

field (Roberts, 1997). If so many types of informal learning experiences are supplied in the museum, what opportunities to learn do visitors to the Web site have?

There have been no reported studies on informal learning on museum Web sites. Firstly, in the examples of the museums studied here, there is no documented evidence to show who the Web visitors are, whether the museums are providing what visitors want, or what sort of learning is taking place. Secondly, the museum staff involved in the Web sites all knows what they want, and hope, people to learn from their sites, based on what they have decided should be placed on the sites. In this regard, it is almost as if museums have reverted, even with state of the art Information Technology within their reach, to the curator-centric model of the past. Do they care if visitors learn anything? This is not clear.

Dierking and Falk (1998) stated that museum visitors are the types of people who value doing something worthwhile in their leisure time. Does the same description apply for people who visit a museum Web site? The visit to the Web site is almost as inactive as watching television, aside from the fact that the visitor has to keep alert as they rapidly encounter all kinds of information, and make changes as they move from link to link. Dierking and Falk (1998) concluded that there is a small amount of information that indicates that multimedia can revive a visitor's interest in the real object. There is no research to prove the Web does this, although Futernick (1998) felt that the Imagebase was drawing people to look at specific objects in the FAMSF.

Dierking and Falk (1998) also proposed that the Web visitor might be very similar to the museum visitor. If this is the case – are people getting the same experiences on the Web?

To learn on either of the three Web sites, the visitor must transact with a great amount of text when they want to learn more than what they can learn from the image. In the physical museum a visitor may learn the same material in different ways, by attending discussions or taking a docent lead tour, for example. The type of text used on labels seems to be incorporated on the Web sites. On the BAM and SFMOMA Web sites there is a substantial amount of written information, such as curators' essays, provided in conjunction with individual works or exhibitions, sometimes more than what is

typically found in an exhibition in the physical museum. Thus, the virtual visitor must transact with a maze of text to access information on exhibitions and associated works. The FAMSF's Imagebase is dominated by images, but the exhibition sections contain considerable introductory texts.

The FAMSF and BAM sites provide information in a mainly didactic way, which is very similar to their physical sites. The FAMSF Web site was always intended as a collection resource, and the Imagebase is something visitors learn from with limited active participation (the click of the mouse). Besides being an information tool, the Imagebase is available for exploration by visitors who do not have specific educational requirements, therefore it enables discovery of new information as virtual visitors actively look through it. It may be a source of familiar images and thus provoke happy memories for some users, but in its entirety, it does nothing to promote excitement or to challenge visitors with new ideas. The children's activities on the BAM site do feature aspects of discovery learning, where the user learns in a more interactive way, however the Web programmers do not make extensive use of the possibilities of current interactive programming technology, therefore these pages do not generate the type of online adventure that true interactivity, found on many other Web sites, can do.

The SFMOMA provides more of a constructivist experience when it provides Web features, Web art and collection based Web sites. This is because the visitor has to participate more in the transaction due to the interactivity involved. Such presentations provide a sense of discovery, as visitors are offered audio, moving image, text, different sources of information, and non-linear pathways of exploration. BAM has started to provide some of this through artists' projects in late 1999 early 2000, but the content on the Web site itself is still very uninspiring.

The Web cannot provide the hands-on experience of touching and manipulating objects to assist learning. Instead, the museum Web site depends on didactic text, surrogate images and forms of multimedia. We know that people learn from books, which usually comprise text (linear) and images, therefore, we could conclude that visitors learn on the Web also. However, people also learn from experiencing the real, from active participation in the museum environment. The lack of the real, three-dimensional nature of objects, and emphasis on text and photographs may make the learning experience

seem more formal for some Web visitors, even when the Web as an environment is undoubtedly a more informal space than that of the museum.

Visual literacy and creativity

If the purposes of the art museum are to encourage close looking, comprehension and enthusiasm about art, (although not all manage to do so), is this occurring on these Web sites? Certainly the Web sites all exist to provide information that leads to a greater understanding of the work the museums present in the physical spaces. Only at FAMSF, which features the ZOOM feature on its Imagebase, is close looking encouraged, by enabling visitors to manipulate images and move in to view fine details. BAM, in the kids' sections, attempts to explore more about particular works by using a questioning technique, similar to a Socratic teaching method, which leads the user to their own answers.

Neither of these sites provides any direct experience of creativity online, except for that supplied in the interactive art and art Web sites supplied on the SFMOMA site. There, visitors are able to create their own journeys through an online work of art. Experiencing these may inspire a visitor to produce his or her own online interactive experience, or look for more on the Web. Another way in which visitors are encouraged to think creatively is in the conversations and comments sections. The attempt to include other voices through these sections on the BAM and future SFMOMA sites offers an avenue into reciprocal informal learning experiences for visitors who take up the opportunity to express and receive ideas. This hasn't been very successful so far as the sections lack direction. On the BAM site, this is not kept up to date, and it does not have the flow or liveliness of a chat room.

In my view, neither of the sites is generating any excitement about the art they collect or exhibit, and at best, the SFMOMA has come closest to doing this through the Web features. Why do they not provide excitement and enthusiasm? Is it that by doing so they fear losing the integrity of the museum? Perhaps they are still learning about interactivity and design on the Web.

Making comparisons

When comparing the three Web sites with non-art museum sites on the Web, these museums do not seem to have departed from particular museum paradigms – the sites are very tightly structured, use of design and colour is sedate, when feedback features exist they are infrequently updated or used, text is anything but lively and exciting, and they do not appear to be catering to a diverse audience. In my opinion, the museums have not used the Web to broaden audiences, and have continued to cater to the status quo. Is it because they feel beholden to reflect who they are in the real world and are nervous about branching out in new directions on the Web? Certainly many of the non-art museum Web sites do not have a physical presence, cater to a specific market or audience, and experiment in all manner of ways to capture visitors through media advertising and hotlinks. For example, chickclick.com caters to a younger female audience, uses bright colours and graphics, and sustains many chat groups on a variety of topics as well as including a list of hotlinks to 'sister sites' on the first page. All of its pages however, are edged by advertising, which is not found on the museum sites. With advertising, buying and selling, the Web has become very e-commerce centered; and other non-art museum sites use a different technology including sophisticated tracking mechanisms to help cater to users' tastes.

On Yahoo!.com, because it is a search engine, visitors are able to search the Web for any subject. Because I use it as a source for news, I am given the opportunity to customize the site to provide me with the news that I am most interested in. This is a function that the museum sites do not provide, and which would be very useful for visitors interested in particular artists and subjects.

The SFMOMA, FAMSF and BAM sites also make very little use of hypertext, which is fully utilised on Jayne Loader's publicshelter.com site. This is a hypertext-based site, featuring political and other forms of information, with hotlinks inserted throughout the text.

It is not easy to compare these and other non-art museum Web sites, with the sites of FAMSF, BAM and SFMOMA. In my experience, (and depending on the site), the transactions these sites offer are more entertaining, the presentation of information is

less formal and more user-friendly, the sites are regularly updated on time, and they cater to a wider variety of visitor.

Because non-art museum sites often seek a mass-market appeal, they tend to have a more contemporary, cutting edge perspective towards design and content. This approach is particularly suited to e-commerce and other mass audience oriented sites but it is an approach that might undermine the integrity of an art museum's site. Alternatively, such a change may broaden their virtual visitor base, and potentially raise visitor numbers to both the virtual and the physical site.

There are also many non-art museum sites that are very dull, lack any sense of design and do not provide an extensive range of transactions for visitors. Much of what a virtual visitor looks at on the Web depends on their personal interests, and the serendipity of the hotlinks journey.

What virtual visitors do encounter on the non-art museum sites that does not feature on the art museum Web sites, is advertising. Because many Web sites need the revenue to exist, the pages are frequently surrounded by advertisements, many of which constantly flitter and move across the screen. The art museum Web sites have a more serious air to them, which would be contradicted by such additions.

Will the virtual museum capture the experience of encountering the real?

Most writers on the subject of museums and the Web, (which is still in its infancy), and the museum staff involved in producing the FAMSF, BAM and SFMOMA Web sites, are extremely optimistic about the future of the museum on the Web. No one has claimed that the Web based transaction with a surrogate of a work of art will ever be more appealing than encountering the real object itself, but rather that by making surrogates available people will be encouraged to visit, or revisit, the real. At this stage we do not know what will happen in the future, but my observations of the FAMSF, BAM and SFMOMA sites indicate that they have scarcely begun to experiment with how to provide stimulating and engaging transactions to the virtual visitor, and need to think more about how to supply information to become more appealing to visitors. State of the art design is an important factor if museums want to keep up with the rest of the

Web, but the content and how it is supplied is the most important consideration for staying viable on the Web.

Changing technology

Why do I state that these museums have 'scarcely begun'? The museum Web sites are situated in the heart of an ever-changing environment, the Internet. Visitors can access millions of sites, and over a short period of time, technology has enabled Web sites to change and grow combined with the potential of the software and hardware. These museums have all been slow to change and develop with the technology, even the SFMOMA in its third re-make has taken more than a year to place the new site online, making many changes as it tried to keep up with the technology and new concepts in the process.

When the FAMSF, BAM, and SFMOMA sites were first generated, the primary environment of the Internet was text, which enabled such things as links and hotlinks, generated by hypertext. During the period of my research, the Internet has moved closer to becoming a graphical environment, making broadband, (the ability to provide video, audio and images larger than thumbnail size), and high speed connections more common. This has been coupled with more efficient authoring tools, (software such as Flash™ and Shockwave™), that enable Web site designers to concentrate on an easily downloadable graphical experience for site users. The FAMSF Web site has recently included interviews with artists in text form, but the technology exists to place these on the site as audio-visuals, similar to the interviews with Bill Viola on the SFMOMA site.

The Web now allows for more animation, and such authoring tools as Flash™ are rapidly changing the nature of the Internet into an audio-visual experience. It is this technology that can assist the Web to supply more of what the museum does in its physical site, by changing its role as a supplement to what is happening in the museum, to being an art experience in its own right. As the technology changes, it becomes more likely that the museum Web site will become increasingly enticing, generating truly interactive learning experiences that provide the appeal needed to encourage visitors to return.

Implications for museums

To make these technological advancements the museums must have the programming and design staff, training for staff, software, hardware, other related technology and the necessary finance in place. All of this is very expensive. For these museums, being non-profit institutions, there is a great difference between themselves and other sites, particularly commercial ones, on the Web. The three museums started the Web sites with limited resources, and although SFMOMA has had considerable commercial support, the sites are still run on low budgets and minimal and voluntary staffing, in great comparison to many other sites with programming bases in the Bay Area. The fact that the sites do not generate income from distribution of online information or Web site advertising means that these new museum functions do not have a way of paying for themselves.

In a recent survey quoted by Bowen (1999), it was stated that 70.2% of respondents said they spend less than $US1000 a year on their museum Web sites, only 9.8% spend more than $US5000, and 57.1% have only one person working on the Web site, indicating that Web sites may not be a high spending priority for museums. Unlike the museum, the Web is not a static form. It is constantly changing and thus does not have the chance to establish a tradition the way the physical museum does. Once something new comes along the old becomes passé and gets left behind, such impermanence makes it even more vital that museums keep up to date, and to do so they need to have the funding.

The art museum must maximize the possibilities of the Web

Some of the transactions supplied on the three sites are significant new moves for the art museum, and strive to open up access to the ideas and methods behind both the physical and virtual sites, for instance, the new opportunities for conversations with museum staff and others. However, I have come to the conclusion that there are several potential Web transactions that these museums are either not utilizing or maximizing the strengths of the Web for. Those are the story-telling potential of the Web to provide additional context in creative ways; providing for children on Web sites, (only one of the museums does so); community representation on the Web sites; online

collaborations with other museums; online evaluation of visitors; providing a forum for political debate on museum issues (only FAMSF has done this, but in a limited way).

Some of the transactions listed above are not always utilized fully in the physical museum either, but the Web provides a new tool, with both wider access and broader appeal that the museums could easily be taking advantage of.

A storytelling tool

Some writers, including Guy Hermann (1999), have asked if anyone is really interested in the data that museums (such as the FAMSF) are so intent on placing on Web sites; and have instead promoted the use of the Web as a tool to tell the story, or the context, behind the exhibitions or works of art. BAM and SFMOMA provide the context for many exhibitions through their Web sites, but this is not available for all works on exhibition in the museum, and is provided in different ways, in essay form, or through interactive Web features. When we think of storytelling as a way of passing on information, there are many creative ways that this can be done, and the SFMOMA is the only museum of the three that has come the closest to doing this through the Web features.

At BAM, much of the context is verbose and very text-based, although they provide a simpler context for works and exhibitions on the kids' pages. SFMOMA are attempting to be more accessible by providing succinct essays with each image, and the occasional Web feature. Presently neither site presents itself wholly as a storytelling medium, and they exist as providers of general information rather than innovative storytelling tools. What have functioned best as a storytelling tool are the interactive Web features on the SFMOMA site, which, unfortunately, lose any profile on the site when they move into the previous exhibition section once the relevant exhibition has closed. There is also no room made available in these features for input from virtual visitors, or opportunities to exchange stories with the museum as described by Marable (1999).

Transactions for Kids

If the museums are attempting to attract new audiences through the Web sites, there are two immediate problems that arise, with regard to providing for a younger audience.

Firstly, nothing is provided on the FAMSF and SFMOMA sites, implying to the Web visitor a lack of interest in reaching out to a younger audience (whether or not that is the case). Secondly, what is provided on the BAM site has remained unchanged for more than a year, therefore implying a lack of enthusiasm on behalf of the BAM staff to creatively or constantly use the site to promote art to a younger audience (whether or not that is the case).

What messages are these art museums giving to younger visitors? In the physical spaces, there are many transactions possible for children from early years to late teens available at certain times and in certain areas. However, when it comes to providing transactions through the World Wide Web, an educational and entertainment medium that many young people have eagerly adopted in the latter half of the 1990s, they show little interest in fostering or nurturing that audience and making use of the capabilities of the technology. Might it be because children do not use the Web to visit museum sites? There are many other art museums represented on the World Wide Web that provide children's activities. However, neither of the three museums know what percentage of the virtual audience is made up of children, and statistics cited by Jonathan Bowen (1999) suggested that although virtual visitors are fairly balanced between the sexes, and the average age of the Internet user in the US is 25-34, the average age of museum Web site visitors is 40-64 years of age. Thus, children do not make up a large percentage of the museum's virtual visitors. There are no statistics to indicate why, but a hypothesis might be that there is a lack of material created with them in mind, content is written with an older, educated audience in mind, which may promote a feeling of exclusion in children.

The wider community

The three Web sites are art museum sites, but are the lives and points of view of those in the wider community represented on the Web site? Earlier it was proposed that the Web is a global information resource that democratizes information and provides a space for many voices to be heard. The feedback sections provide an avenue for virtual visitors from the local community and further a field to express their opinions and be heard. However, there is still no strong community representation on either museum Web site. Greater attempts to include members of the community and their points of

view have been achieved on other museum sites, such as the Walker Art Center's online feature "Through Your Eyes" (Walker, a). The three art museums presently host Web sites that are primarily expressing the voice of the museum, and do not represent the diverse community that exists in the streets around the physical museums themselves.

Successful transactions

There are omissions on these Web sites, but there are also significant inclusions. Resources in the form of collection data and information are now freely available to anyone. The sites have become extensive easily accessed archives of the museums' activities. Schedules of exhibition programmes and events are also always accessible, and so is the staff, through the online directories.

The Web site offers many possibilities that are either utilized or under-utilized by the museum, some of which I have discussed above. Table 5.1 sets out a list of the transactions the Web enables the art museum to provide. Not all of them are provided by the three case study museums as I have discussed.

What the Web enables the art museum to do
add value to the experience
conserve works of art
facilitates research: from inside and externally
hotlinks to other sites: invites communication with other museums
global outreach & in-reach
provide easy access for repeat visits
provide free access
encourage exploration
respond to visitors directly
present multiple points of view
exchange objects with the public
carry out e-commercial transactions

Table 5.1 What the Web enables the art museum to do

What form of access is supplied through the transactions?

Transactions on the Web sites provide a greater understanding of what is supplied in the physical site, for instance, through the virtual exhibits of real exhibitions, and through contextual information. They also provide greater access to collection items and the data or information that is linked to them. In the future, if more context is supplied, in

more creative and appealing ways, then transactions in the virtual space will become an even more valuable prerequisite to visiting the museum, and valuable teaching device.

Many of the transactions presently supplied on the Web, and the Web site itself, reflect the continuum of the changing practices and innovations that have been occurring in the art museum. The computer and the World Wide Web are new tools adopted by the museum that are being successfully integrated into its functions to provide both what is, and what is not, accessible in the museum.

The Web has also become another marketing tool for the museum, a method for advertising programmes and services to a global audience who may seek out the site, or stumble upon it during their Web surfing.

The art museum's Web site offers a significantly new way of operating the museum, especially with regard to transactions that for practical reasons cannot be performed in the museum space, or without a computer. Those are easy access to collection items and associated data or information; archives of previous exhibitions; twenty-four hour access; access to a global audience; full background information on exhibitions, artists and works of art.

If these museums succeed in further developing presently underdeveloped transactions, the Web site will become a frequent venue for visitors searching for creative storytelling methods; two-way, on-going exchanges; and commercial operations.

If these museums choose, and are equipped with the technology to provide more transactions through the Web sites, there is scope for them to provide transactions that are presently only available in the museum such as: lectures, talks, and symposia in transcript, audio or audio/visual form; more audio in conjunction with contextual information; art education; and audio-visual transactions.

Regardless of what is provided on the Web site, presently transactions are predominantly controlled by the museum. In this thesis, control and the élitist history of the physical museum were presented as reasons why the museum needs to provide greater access to what it has to offer. Access has been provided to museum transactions

through the Web site, but this access is still controlled by the museum. Thus, the museum Web sites still control the visitors' experiences by defining what is supplied and how it can be experienced by the visitor.

At the same time that it controls visitors' experiences, the Web is a new tool that does provide greater access in certain ways. It cannot give access to the original work of art, but can provide greater access due to the 'timeless' and accessible nature of its digital technology.

Greater access to museum visitors is provided through the Web by:
24 hour access
global availability
free access
collection data available
collection information available in different forms
no surveillance
programme information
access to commercial operations
nonlinear experience
Hotlinks
staff contact details available
copying of images and information permitted

Table 5.2 Greater access to museum visitors is provided through the Web by

Through the museum Web site, transactions are offered in the form of one-way transfers and two-way exchanges, that transfer or exchange ideas, funds, experiences, goods and services of different types, as I have discussed. It will be some time before the transactions on the FAMSF, BAM and SFMOMA sites are really fulfilling to the virtual visitor, using the full potential of the technology, and combining it with the storytelling potential of the museum and its contents.

Museums have moved quickly to adopt a tool, the World Wide Web, which is now accessed by millions around the world, to be more accessible. In Chapter One, I discussed how computer technology also marginalizes people, because personal computers are still not widely used or owned by marginalized groups in our communities. Therefore, a large percentage of any population still does not have wider access to the museum, and it may be that the visitors who access these Web sites are the ones who would come anyway. Therefore, the Web sites cater to the status quo. There is also no documented evidence to show that the art museum's Web presence has assisted

to change the élitist perspective some people may have of the physical museum. Furthermore, when these museums make little effort to have multiple voices heard on the Web sites, this does not help to change such perspectives.

The next significant step for BAM, SFMOMA and FAMSF is to evaluate the sites and survey the virtual visitors. Museums have been notorious for not asking what visitors want, and this is perpetuated on the three Web sites. Two other factors that need to be examined and worked on through further research are: how to make these Web sites appealing to a younger audience; and how to use the technology and the collections in more creative ways to provide exciting animated storytelling experiences on the Web. In addition to this, if any art museum is serious about providing learning opportunities on the Web, then I would also recommend research into how visitors learn, and what they learn on the art museum Web site.

The outcome of my research finds that by perceiving a need combined with a desire to adopt the new technology, the FAMSF, BAM and SFMOMA have established, and dutifully maintain Web sites, which might remain in cyberspace whether or not there were many visitors. However, unlike the related reality in the physical spaces, there is no accountability, no return on the investment into the Web site is required, access is free, and there is no self-evaluation and no visitor-evaluation.

There is no evidence that the transactions that FAMSF, BAM and SFMOMA are providing on these Web sites are what visitors really want. Therefore, not until each art museum knows its virtual visitors and what they are looking for, as well as allowing them to have a voice on the Web site, will any greater access to museum resources truly be supplied.

Appendix A

Definitions of transaction found on the World Wide Web

In these definitions, words pertinent to my investigation are outlined in bold. The language used is at it was found on the Web.

Investor Word: An **agreement between a buyer and a seller** to **exchange an asset for payment**. Or in accounting, any event or condition recorded in the books of account (Dictionary definition, (online), c).

Arm's length transaction: A transaction **between two parties** who were not previously related or affiliated in any manner, to avoid any question of a conflict of interest (Dictionary definition, (online), d).

Money Word: **Agreement between two or more parties** (Dictionary definition, (online), e).

Technical Terms for Agribusiness Managers: Occurs in a marketing channel as goods move from producer to consumer. A transaction has three important elements: 1) transfer of goods, 2) transfer of title, and 3) transfer of exchange right (Dictionary definition, (online), f).

Legal term: An **agreement between two or more persons**, who for the purpose of preventing or putting an end to a law-suit, adjust their differences by mutual consent, in the manner which they agree on; in Louisiana this contract must be reduced to writing. Transactions regulate only the differences that appear to be clearly comprehended in them by the intentions of the parties, whether they be explained in a general or particular manner, unless it be the necessary consequence of what is expressed; and they do not extend to differences which the parties, never intended to include in them. To transact, a man must have the capacity to dispose of the things included in the transaction. In the common law this is called a compromise (Dictionary definition, (online), g).

Computer/Internet Definitions: In computer programming, a transaction is **a sequence of information exchange and related work** (such as database updating) that is treated as a unit for the purposes of satisfying a request and for ensuring database integrity. For a transaction to be completed and database changes to be made permanent, a transaction has to be completed in its entirety. A typical transaction is a catalogue merchandise order, phoned in by a customer and entered into a computer by a customer representative. The order transaction involves checking an inventory database, confirming that the item is available, placing the order, and confirming that the order has been placed and the expected time of shipment. If we view this as a single transaction, then all of the steps must be completed before the transaction is successful and the database is actually changed to reflect the new order. If something happens before the transaction is successfully completed, any changes to the database must be kept track of so that they can be undone.

A program that manages or oversees the sequence of events that are part of a transaction is sometimes called a transaction monitor. Transactions are supported by SQL, the standard database user and programming interface. When a transaction completes successfully, database changes are said to be committed; when a transaction does not complete, changes are rolled back. In IBM's CICS product, a transaction is used to mean the instance of a program that serves a particular transaction request.

A source: George McDaniel. IBM Dictionary of Computing, Ninth Edition, McGraw-Hill, (1994) (Dictionary definition, (online), h).

Computer Term: A unit of interaction with a DBMS or similar system. It must be treated in a coherent and reliable way independent of other transactions (Dictionary definition, (online), i).

Science Term: A logical unit of work performed on a database. A transaction can be terminated by either making permanent (committing) or rolling back (rollback) all updates (Dictionary definition, (online), j).

Technological [term]: A single business event, including the associated data and the underlying processes and triggers (Dictionary definition, (online), k).

Collins Cobuild Dictionary: A transaction is a **business deal** (Dictionary definition, (online), l).

Webster Dictionary 1828: The **doing or performing of any business**; management of any affair.
1. That which is done; an affair. We are not to expect in history a minute detail of every transaction.
2. In the civil law, an adjustment of a dispute between parties by mutual agreement (Dictionary definition, (online), m).

ARTFL Project: Webster Dictionary, 1913:Trans*ac"tion (?), n. [L. transactio, fr. transigere, transactum, to drive through, carry through, accomplish, transact; trans across, over + agere to drive.
1. The doing or performing of any business; management of any affair; performance.
2. That which is done; an affair; as, the transactions on the exchange.
3. (Civil Law) An adjustment of a dispute between parties by mutual agreement. Transaction of a society, the published record of what it has done or accomplished. Syn. -- Proceeding; action; process. -- Transaction, Proceeding. A transaction is something already done and completed; a proceeding is either something which is now going on, or, if ended, is still contemplated with reference to its progress or successive stages. & hand We the word proceeding in application to an affray in the street, and the word transaction to some commercial negotiation that has been carried on between certain persons. The proceeding marks the manner of proceeding, as when we speak of the proceedings in a court of law. The transaction marks the business transacted; as, the transactions on the Exchange." Crabb (Dictionary definition, (online), n).

Eva WordNet 1.6 Vocabulary Helper:
Noun •1. transaction, **dealing, dealings** -- (the act of transacting **within or between groups** (as carrying on commercial activities); ``no transactions are possible without him"; "he has always been honest is his dealings with me'')

•commerce, commercialism, mercantilism -- (transactions **having the objective of supplying commodities**) •affairs -- (transactions of professional or public interest; ``news of current affairs"; "great affairs of state'') •operations, trading operations -- (financial transactions at a brokerage; having to do with the execution of trades and keeping customer records) •downtick -- (a transaction in the stock market at a price below the price of the preceding transaction) •uptick -- (a transaction in the stock market at a price above the price of the preceding transaction)
•transaction, dealing, dealings -- (the act of transacting within or between groups (as carrying on commercial activities); ``no transactions are possible without him"; "he has always been honest is his dealings with me'') (Dictionary definition, (online), o).

Lexical FreeNet:
Is a synonym of: dealing, dealings
Triggers: cash, card, paramount, value, stockholders, seth, receipt, pipette, mondex, m.s, lindsey, hale, grande, firm, fees, fee, deal, charge, castle, cards, buyer, billing, banking, antitrust, account
Is a kind of: **group action**.
Is more general than affairs, borrowing, business deal, commerce, commercialism, downtick, exchange, mercantilism, operations, rental, renting, trade, trading operations, transfer, transference, uptick (Dictionary definition, (online), p).

Webster Dictionary:
1 **a** : something transacted; especially : **an exchange or transfer of goods, services, or funds** <electronic transactions> b plural : the often published record of the meeting of a society or association
2 a: an act, process, or instance of transacting **b: a communicative action or activity involving two parties or things that reciprocally affect or influence each other** (Dictionary definition, (online), q).

The Wordsmyth English Dictionary-Thesaurus
Presented by Robert Parks and the ARTFL Project at the University of Chicago
See Entry Field Definitions, Pronunciation Guide, or Return to WEDT Search Form.

DEF: 1. the act, process, or an instance of transacting or the fact of being transacted.

DEF: 2. the thing transacted, such as a sale or other piece of business.

DEF: 3. (pl.) the record of proceedings, as of a convention or conference (Dictionary definition, (online), r).

Personal Computing & Internet Dictionary: - Peter Collins Publishing Ltd

SET: secure electronic transactions standards created by a group of banks and internet companies that allow **users to buy goods** over the internet without risk of hackers; SET provides a secure link between the user's Web browser and the **vendor's Web site** by encrypting the data transferred (Dictionary definition, (online), s).

STT: secure transaction technology system developed to provide a secure link between a **user's browser** and a **vendor's Web site** to allow the user to **pay for goods** over the Internet (Dictionary definition, (online), t).

Appendix B

Case studies: Description of the three museums' physical sites & the transactions they provide

In this section, my aim is to describe the background to the museums and their physical spaces, followed by a description of the transactions provided at each museum.

FINE ARTS MUSEUMS OF SAN FRANCISCO (FAMSF)

Brief History

The Fine Arts Museums of San Francisco (FAMSF) consists of two museums, The California Palace of the Legion of Honor (the Legion) and the M H de Young Memorial Museum (the de Young), both of which were created initially for international expositions. From its beginning The California Palace of the Legion of Honor was to be a museum of fine art. It was founded by Alma and Adolph Spreckels and opened at the Panama Pacific International Exposition of 1915. The de Young was constructed for the California Midwinter International Exposition in 1894 and began with a diverse collection of art and artifacts representative of what was seen at the exposition (FAMSF, e) that was later added to according to the eclectic tastes of its owner de Young. Both museums were eventually deeded to the city of San Francisco, and merged in 1972, combining their collections to become the Fine Arts Museums of San Francisco (FAMSF).

Architecture & site

The Legion was built as a memorial to the dead of the Great War, and as a home of art and historical treasures. It is an imposing French neo-classical building, a permanent three-quarter-scale replica of Napoleon's 18th century Palais de la Legion d'Honneur in Paris. Additions to the original building in 1995 added a 42 percent increase in space to the original 1924 construction.

The Legion sits on top of a headland and is typical of the monumental style of museum referred to by Bryson (1997) for instance. It features a columned outer courtyard, across

which one must walk in order to enter the main doors of the museum. Besides the mausoleum-like memorial hall, and linked exhibition galleries situated both on the entrance level and downstairs, the gallery has a large café and museum store.

The de Young is the oldest public museum in San Francisco, now based in its second home, a Spanish Plateresque-style building completed in 1919. A central section and tower were added in 1921, and a west wing added in 1925. One wing is now occupied by the Asian Art Museum, although it plans to move into the center of San Francisco, and the de Young itself, (during 1999), announced plans for a major building refurbishment and extensions at the present site. Information on this change is included on the Web site (FAMSF, h).

Typical of a past when art museums were revered spaces, placed in expansive botanical surroundings or on hilltops commanding a presence over a city, both museums are sited away from the bustle of San Francisco. They rest in picturesque surroundings, but are far removed for those who wish to reach them during an office lunch hour, by public transport, or on foot. The bus journey from downtown San Francisco to either museum can take from half an hour to forty minutes. This distance problem means that the museums tend to be very silent, characterless places, almost devoid of visitors during weekdays.

Collection

It was initially intended that the Legion would feature the arts of France (but not exclusively), and the de Young would represent other national schools of both fine and decorative arts with a focus on American art. Due to the interests and influence of Alma Spreckels and her connections, the Legion has an extensive collection of works by Rodin; French, Dutch, Flemish and British painting of the 17th, 18th and 19th centuries; furniture, silver, ceramics, medieval and Byzantine objects; Romanesque and Gothic sculptures; prints and drawings (they have more than eighty thousand works on paper), and objects associated with dance, such as ballet designs (FAMSF, f).

The de Young houses a collection of American paintings, crafts and sculpture, art of the Americas, Africa, Oceania and textile art. The initial collection consisted of exhibits from the exposition, but was soon supplemented with eclectic items acquired by M. H.

de Young, such as painting, sculpture, arms and armor, fine porcelain, objects from the South Pacific and American Indian cultures, polished tree slabs, handcuffs, and birds' eggs. The collection of the 'curious' has been halted, and serious art buying has been pursued. Major gifts have also been received, including works by El Greco, Pieter de Hooch, Titian, and many others. The de Young considers that its collection of American art, featuring works by Thomas Cole, Georgia O'Keefe and Frank Lloyd Wright, is one of the best survey collections of such art in the country, and since 1973 it has hosted the West Coast Area Center of the Archives of American Art, which is a bureau of the Smithsonian.

Exhibitions

The FAMSF are not recognised for exhibiting contemporary works of art, (although, contrary to this, there was an exhibition exchange with another local institution early in 1999 which placed contemporary art in the de Young, and the museum is attempting to show more contemporary work), but do have solid reputations for outstanding exhibitions of early to modernist works. They also host important touring shows of work by major artists such as Monet, as well as non-western art forms such as African art, and in late 1999 Australian Aboriginal painting. Permanent exhibitions in particular, at both spaces, tend to be more traditional than those held in contemporary art museums and attract people with a greater understanding and interest in art history and the traditional methods of art production.

Audience

Staff at the FAMSF is aware that "our visitors reflect the 'typical' art museum visitor, as most tend to be Caucasian, middle-aged, and middle class" (McDonald, 1998). During the weekdays, visitors reflect those with time (older people, non-working females, retired people or tourists) and on weekends, family groups and couples are more prevalent. Visitors also have to be able to afford the entrance fee.

Larger and more diverse crowds are attracted to the occasional 'blockbuster', such as *Monet* at the de Young in 1995, or *Picasso during the War Years* at the Legion in 1998. Generally, it seems that when something is on show that people really want to see, (whether it is the art or the museum itself), the tyranny of distance is no longer an issue, as attested by the crowds that have been thronging to the new Getty Museum in Los

Angeles in 1999. David Bonetti (1999) commented on access to museums in his article, "Just like the old museum-in-the-park, the Getty is hard to get to. It perches on a hill; you have to make a reservation to park your car, transfer to a tram and then climb a flight of stairs to reach the museum, which thank the gods, pays back the effort a thousand fold" (p. C-7).

Programmes

The FAMSF offers a range of public programmes that it advertises in membership mailings, local papers, brochures, street banners and on the Web and in other media. Docent lead tours are offered free to the public every day of operation during the summer, and tours in a range of languages are offered to private groups. School group tours, art studio workshops, ACCESS tours for people with special needs, audio and random-access-digital tours are also available for a small fee. They offer programmes for families, which include Doing and Viewing Art, Big Kids/Little Kids, and Gallery One, which is situated in the de Young.

Both museums are concerned with actively teaching practical art and art history, which are not taught in all American schools nowadays. Because of this strong focus, there are many programmes available for students, which include:

- College Art History Survey Classes
- Internships for Graduate and Undergraduate Students
- Young Scholars Art History Colloquium
- Museum Practices
- Poets-in-the-Galleries
- Advanced Placement Art History
- Academic Decathlon Review
- The Hills Project
- Children's Theater Association performances, and San Francisco Youth Arts Festival in May at the de Young.

Special events and range of programmes for other visitors are held throughout the year also. They include lectures and symposia given by staff and other professionals. The FAMSF also publish books and catalogues on subjects relevant to their collections and exhibitions.

Organ concerts are played every weekend at the Legion, a film programme is run throughout the year, and outreach art activities take place citywide. Both museums encourage collections research in the physical museum in addition what is provided on the Web site, there is an American Art Study Center at the de Young, the Graphic Arts Study Center and the Porcelain Study Center at the Legion for looking at objects and which provide computer terminals for researching the Imagebase. The Legion hosts training for paper conservators, holds free monthly conservation clinics for the public. They also offer resources to teachers, providing workshops during the year, Art Trunks for loan, and a teacher membership to the FAMSF.

In the galleries, reading areas are provided to supplement information about certain exhibitions. In some exhibitions, extended labels are provided for each object, but this service is not provided throughout each museum.

Function space at the museums is also available for hire.

A new focus on children

One of the more recent innovations at the FAMSF is Gallery One, for children and their families. This is situated in the de Young. An entire gallery space has been dedicated to exhibiting and interpreting art to children, and can be utilised by anyone at any time during opening hours. In this space, objects from the permanent collection are displayed in cases around the room. "The gallery is enhanced by four major components:

1. "Do You See What I See," a guide designed to enhance children's understanding of the works on view.
2. A computer station enabling visitors access to more than 6,000 prints, drawings, and photographs in the Achenbach Collection for Graphic Arts.
3. A reading area with books on art for children, including the Museums' education publications.
4. A table for writing and drawing that encourages children to respond to Gallery One." (FAMSF, g)

Gallery One is clearly indicated to visitors who take the entrance to the west side of the museum, as different elements that reflect its mission, such as question and answer boards about museum activities, are exhibited on the walls on the way to the space.

University of California Berkeley Art Museum & Pacific Film Archive (BAM)

Brief History

The UC Berkeley Art Museum opened in its present building in November 1970. The actual museum began in 1963 when the university received a bequest and gift of forty-seven paintings by the artist Hans Hoffman, and was formerly known as the University Art Museum. Because it is a university based art museum and houses the Pacific Film Archive, it is now formally known as the University of California Berkeley Art Museum and Pacific Film Archive (UC BAMPFA, or BAM) and is renowned for both art and film programmes. For the purpose of this paper, I am only discussing BAM.

Architecture

BAM occupies a large formidable late sixties modernist concrete structure. The lower level areas of the building house the screening theatre and archives of the PFA as well as a café, and outside a small sculpture garden. Formed of grey concrete slabs outside and inside, the museum features fan-shaped galleries that are arranged in overlapping terraces to enable visitors to see the works of art from different vantage points. The concrete material and design causes the structure to appear unimpressive and rather unwelcoming (with a recessed entrance-way) from the outside, and top-heavy and overbearing while inside.

Site

BAM is situated on the periphery of the University of California, on Bancroft St in Berkeley near shops, student housing and a YMCA. This museum is easier to reach if you live nearby, as it is situated in a busy area where students vie for street parking spaces and it does not provide its own parking area, although there is a university pay-lot across the road.

Collection

The museum collection spans several centuries, featuring art of the renaissance and early Asian art to works of the present day. The breadth of the collection is demonstrated in the exhibition strategy, as works from all periods represented in the collection are on display throughout the museum at all times alongside special or touring exhibitions. On its Web site, BAM states that it sees itself as "a museum that's dedicated to presenting the experimental, the rare and rarely seen, the unexpected and the controversial. That gives you the chance to think about what you see...and see what you think." (BAM, h). However, currently it does not have a public profile for doing anything extraordinary, which may be supported by the many times I have visited and found myself to be one of only three visitors in the whole museum.

Since the initial gift of works, the collection now spans 9000 paintings, sculptures and works on paper. It includes works by the old masters Rubens and Hogarth, 19th century artists Gauguin and Renoir, and 20th century artists from Magritte and Míro to Joan Brown, Mark Rothko, Betye Saar and Romare Bearden, (BAM, i). They also have a collection of ceramics, sculpture and works on paper from Asia, with a focus on Japan and China, for which there is a permanent display and gallery-size reading area in the museum.

Exhibitions

An ongoing exhibition programme, MATRIX, which presents new and experimental art was established in 1978, and provides a continuing survey of contemporary art by emerging or neglected artists. The permanent and touring exhibition programme covers work of all periods, from Western art to that of Africa and Asia. Temporary exhibitions reflect both local, national and international art practice.

Audience

Due to its proximity to the university, the museum draws on a predominantly student audience, and a general one which includes many local residents. From my observations as a frequent visitor, this museum is very quiet with few visitors during the weekdays and draws a steady, though not large, audience during the weekends.

Programmes

Programmes of events are provided for visitors to the museum and include tours, readings, lectures and symposia, musical performances, artists' lectures, story telling and demonstrations. Special exhibitions in particular tend to generate their own public programmes, which take precedence over interpretation of the permanent collection.

In the permanent collection, galleries there are free one-page information sheets available to the public in each exhibit section, describing the period and the works on display. In different parts of the museum, there are tables of reading materials for perusal by visitors in the galleries. BAM advertises its programmes through local papers, its Web site, and in a bi-monthly calendar that is posted to members and distributed widely for free collection.

San Francisco Museum of Modern Art (SFMOMA)

Brief History

This museum has been in existence since 1935 when it opened on the fourth floor of the War Memorial Veterans Building on Van Ness St as the San Francisco Museum of Art. The 'modern' was added in 1975. In 1946, as an adjunct, the SFMOMA created its own rental gallery, which still exists today, situated at Fort Mason in San Francisco.

Architecture

The SFMOMA has been at its present site in a purpose-built building since January 18th 1995. Designed by a Swiss architect, Mario Botta, it is a 225,000 square foot modernist building in the heart of San Francisco. "The building features an impressive stepped-back brick and stone façade that is distinguished by a soaring truncated cylinder emerging from the roof. To the rear, the building consists of a five story tower that houses galleries as well as the Museum's curatorial and administrative offices." (SFMOMA, e).

Bonetti (1999) quotes Newhouse as saying "The new museum attempts to make art once again a vibrant part of life and a powerful aesthetic experience rather than a didactic tool or a remote object of veneration" (p. C-7). This may also be true for the SFMOMA which has fast become a San Francisco icon, and as if to substantiate this,

included itself in an exhibition of icons in 1998, *Icons: Magnets of Meaning,* curated by Aaron Betsky the SFMOMA Curator of Architecture and Design. Its design proves to be as appealing to visitors as the art on exhibit. Even though Bryson (1997) stated that the foyer is one in which you never really arrive, it provides visitors with amenities, information, ticket desks, a bustling shop and a café that both open to the sidewalk, touchable works of art, and the time to gaze skyward to admire the large skylight, fifth floor bridge, and any art that might be hanging, overhead.

From the foyer, the museum is designed for easy navigation, with or without the free map. The gallery layout on each floor is similar and encourages visitors to move through galleries on a circular route from floor to floor with frequent views into the atrium for orientation. The museum has a busy café, one of the most profitable museum stores in the USA, and a large theatre that acts as a venue for film, lectures and music programmes. They also have a large space, the Schwab Room, for museum functions and hire by outside organizations. The Koret Center is a special area for school and family programmes, and the volunteers have their own kitchen/sitting room available for use all day. The library houses an extensive up-to-date collection of art and museum texts and is available for use by the public, by appointment, on certain days.

Site

Occupying such a central site on Third St, SFMOMA is easy to get to, and is near to several parking buildings and local public transport stops. New art museum buildings such as this one, are being sited where the audience lives, works, or stays in downtown hotels. The history of experience, and the lack of time on behalf of locals, and the inconsistency or lack of public transportation to outer suburbs, has taught many museum operators that in order to attract an audience they have to be where the people are. In this respect, and although architects appear to compete to produce impressive monuments to art, they are now built and sited with the potential audience in mind. Contemporary art museum design draws visitors in, rather than producing the opposite effect of frightening them away. The symbolism tied up in the notion of monument or temple seems to have disappeared in the modern environment, and curiosity rather than reverence dominates the public psyche.

Collection

The SFMOMA's collection consists of over 18,000 works that include paintings, sculpture, works on paper, photographs (which it has been collecting for more than sixty years), architectural drawings, models and design objects, and works from the media arts including Web sites. The collection comprises mainly modern and contemporary art, it represents American and international artists, and includes works by Jackson Pollock, Henri Matisse, Frida Kahlo, Diego Rivera, Imogen Cunningham and many California artists.

Exhibitions

The SFMOMA supports a regularly rotating exhibitions programme of the permanent collection, touring and in-house curated exhibitions, ranging from early modernism to contemporary art.

Although there is a chronological hang of work in the photography, modernism and contemporary sections, most of the exhibitions are sited in the building according to medium. For instance, the architecture and design exhibitions are exhibited in the same area on the second floor, and photography exhibitions are placed within the vicinity of each other. Due to the nature of many of the contemporary shows, the fourth and fifth floors are continually changing to incorporate installations, moving image, sound, and other current exhibition practices.

Audience

Of the three museums discussed here, the SFMOMA is the busiest on a daily basis. Having more than tripled its yearly attendance since it moved to a central city location, it attracts a constant stream of visitors, and from my observation during many hours spent there visiting or volunteering, this is an eclectic group encompassing a wide age range, locals and tourists, yet still reflecting the middle and upper classes. To the left of the front doors is the busy museum shop, to the right the café, and opposite across the road is the Yerba Buena Center for the Arts, the Yerba Buena Gardens and the Sony Entertainment Center Metreon, from all of which potential visitors arrive.

Programmes

The SFMOMA offers docent and audio tours, a variety of public lectures, family and school programmes, and film programmes in conjunction with particular exhibitions, as well as an active education programme for school groups. Included in the lectures and discussion series are different programmes to meet different needs, such as "Art Sandwiched In" which is held at midday during the week. "Art and Conversation" is a free monthly slide lecture and docent-led tour that includes refreshments, and a Free Tuesday Programme is also held during the day once a month. There are regular lectures and discussions on Thursday evenings, and Saturday afternoons, in conjunction with current exhibitions. Booktalk is a public forum that unites authors with artists, critics, historians and academics with a wide range of perspectives to discuss issues raised by their work. Looking at Art with Artists is a class taught by a working artist and at times another person such as an historian. Family Sunday is a successful free monthly programme at which children are encouraged to produce art of their own, Family Day is also a regular event. Children's Art Classes are available to children from two to six years of age. SFMOMA also runs a rental gallery from which visitors may hire or purchase works of art. Musical performances are held in the museum foyer on the Thursday late night. All of these functions are advertised by the bi-monthly calendar, a member's events guide, in local papers and on the Web site.

Computers/Educational Multimedia in the Museums

What SFMOMA provides in the museum that is not as conspicuously available at the other museum sites discussed here is computer access on the gallery floor. The Berkeley Art Museum does provide a computer downstairs in the PFA foyer near the telephones, providing access to the Web site; and the FAMSF offer access to the Imagebase in the study rooms at the Legion, and to the Web site in Gallery One at the de Young.

At the SFMOMA computer access to interactive programmes produced by the museum, (some of which are now on CD-Rom), is provided in several areas in the museum. Since moving to the new space, the museum considers itself to be "...at the forefront of museums involved in serious ongoing exploration of the emerging role of new technologies in art institutions. In all of our new technology programmes, we employ digital media to focus on dimensions of artmaking, artists' lives and thinking, art history and art viewing which complement the direct experience of seeing individual works in a

gallery or a museum. Interactive multimedia allows us to present a variety of provocative voices and historical information, rather than constructing a single, static, art historical storyline; it fosters an understanding of the multiple contexts in which a work of art gains its meanings." (SFMOMA, f).

Prior to opening the new museum in 1995, SFMOMA made a decision to commit to producing educational multimedia, and for the opening day worked on different interactive computer projects for use in the new museum. The projects that the staff created were *Voices and Images of California Art, Bay Area ArtFinder,* and *Making Sense of Modern Art. Voices And Images* is now available as a CD-Rom. Computers running these interactive programmes are available in the Interactive Study Area on the second floor, and further monitors and reading materials are now available on the second floor landing.

Appendix C

Description of the Bill Viola Web feature

Included in the Bill Viola Web feature are:

- Main Page: Exhibition Preview (thumbnail images for: each of the 16 rooms, the videotape programme, two off-site works).
- Floorplan (floorplan and explanation of same)
- Works in Depth (documentation, notes and video interviews on 5 works)
- Viola on Video (video interviews with Viola)
- Public Programs (a list of associated programmes throughout the duration of the show)
- Credits

By clicking on any of the thumbnail images in *Exhibition Preview* or *Works in Depth*, the Web visitor will find an image of the work, explanatory text, audio, a video clip, and technical information in the form of texts, photos and in almost all cases, a video of the artist discussing the work (SFMOMA, h).

Appendix D

Explanation of * Numbered Categories in Chapter Four

*1 Mitchell and Strimpel (1997, p.32) argued that the sophisticated nature of search engines on the Net allows personalization, yet a loss of social interaction is associated with using the virtual. However, although it is generally considered that work at a computer or accessing the Internet is a solo experience, Chadwick and Boverie (1999) found conflicting evidence in a Web survey. They referred to the discovery that there is now a considerable percentage of group visitations to Web sites. They suggested that because the Internet is so popular now, it's not unlikely that people will access it in groups. They said that nearly 30% of respondents visited in a group, and that it appeared that groups browse on the Web, and individuals are more likely to be searching for particular things.

*2 All the museums studied said they were hoping to provide a greater community presence on their Web sites. However, it is only on the BAM Web site that they display Web visitors' comments and inquiries, and very recently, they have begun to exhibit children's artwork produced in response to exhibitions in the physical museum. The museums, on the whole, tend to utilize their physical spaces in a similar way, with very little community presence visible on a continuing basis.

*3 Although the museum is attempting to assert itself in the community by expanding its presence in various ways, the nature of the 'beast' remains the same to most of the public. None of the three museums could substantiate any change in visitor numbers to the physical museum since hosting a Web site, and only in the case of the FAMSF, was there greater interest in viewing collection items. The museum on the Internet, however, is open to anyone simply by nature of existing in cyberspace, where anyone with access to the technology can roam on an equal par with everyone else.

*4 While all the museums provide kids' programmes in the physical spaces, BAM is the only Web site to provide activities for kids. Of note however, is that although all the museums provide kids' programmes, the de Young is the only one openly and

continuously providing space in the galleries for kids, not separated away from the general public.

*5 Many museum Web sites incorporate e-mail and telephone listings for all museum staff, although this is not present on the SFMOMA site, only departmental telephone numbers. On attempting to contact staff from inside the museum, one has to go through a 'buffer zone' (such as reception staff on the front desk) and will likely not get immediate attention without an appointment. However, although it is easier to contact staff from outside the museum, they are not obliged to make themselves available immediately either. It may be some days before a response to an e-mail is received, for instance. At the FAMSF however, they have found it is an easier and quicker method for visitors seeking information from the staff, for instance, from the Director.

*6 At present, there is no fee for access to any museum Web site or any of the material they have to offer, unless the visitor is making a commercial transaction. All of these physical museums have an entry fee, as well as fees for most special events, be they special exhibitions or other activities such as lectures and performances. There are, however, certain times when the entry fee is waived at each museum, such as the first Tuesday of the month at the SFMOMA.

*7 It could be argued that museums do not enforce a linear navigation, because an individual is, in fact, free to go wherever they want in the public spaces. However, due to the layout of the exhibition galleries; walking distances in large museums; the chronological hang of an exhibition; or the flow of movement of the other visitors; (particularly in a crowded blockbuster exhibit such as the Mary Cassatt exhibition I visited at the National Gallery of Art in Washington D.C. during August 1999), a visitor may find that they follow a particular path as they move through the building. It is highly unlikely that a visitor in the physical space would go backwards and forwards, upstairs and downstairs, the way they can in the virtual space.

Appendix E

Mission statements included on the Web sites

The statements below include references to either the mission of the museum or of the Web site. The example given for SFMOMA is the museum's mission statement.

1. FAMSF (http://www.thinker.org/imagebase/index.html) Paragraph 2

   The Fine Arts Museums of San Francisco is a public museum with an evolving mission to behave more like a resource and less like a repository. The Thinker is the next logical step in our attempt to make that shift. It is our way of letting you be the curator and follow your interests through the collection.

2. BAM (http://www.bampfa.berkeley.edu/onlineres/currprojects.html)

   New Media Initiative

   New digital communications and multi-media technologies provide innovative ways to accomplish the museum's mission of education and access to visual culture, and expand the museum's role as a hub of discussion and interchange about art, film, and culture. Local and global communities have new levels of deep, precise access to information on collections and scholarly content from here and gathered virtually from museums around the world. Contemporary artists launch digital art projects in cyberspace. Students, artists, scholars, teachers, filmmakers, and the public have new channels for interaction with content and with each other. BAM/PFA develops shared and open resources through collaboration, and creates spaces where new ideas and voices can be heard, where experimental artists to minority communities to young people present diverse, decentralized interpretations and become participants in culture instead of merely consumers or passive viewers. BAM/PFA employs new media to provide access to existing programs; to deliver new forms of media art; to provide rich information resources; to enable ongoing conversations and community interaction; and to investigate the very models with which educational organizations can shape new media in the service of culture.

3. SFMOMA (http://www.sfmoma.org/INDEX.HTM) Click on "Who is SFMOMA?".

   Mission Statement

   The San Francisco Museum of Modern Art exists to collect, preserve, present, and interpret the best of contemporary and modern art for the purpose of enriching people's lives through aesthetic and learning experiences.

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n) http://machaut.uchicago.edu/cgi-bin/WEBSTER.sh?WORD=transaction

o) http://www.notredame.ac.jp/cgi-bin/wn?transaction

p) http://cuff.link.cs.cmu.edu/cgi-bin/lexfn/lexfn-cuff.cgi?sWord=transaction&tWord=&Atrg=on&Asyn=on&Agen=on&Aspc=on&Acom=on&Apar=on&Aant=on&Arhy=on&Asim=on&Aana=on&query=show

q) http://www.m-w.com/cgi-bin/dictionary?book=Dictionary&va=transaction

r) http://machaut.uchicago.edu/cgi-bin/WEDT1.sh?word=transaction&searchtype=default&constraint=1

s) http://www.pcp.co.uk/cgi-bin/pcollin/search.pl

t) http://www.pcp.co.uk/cgi-bin/pcollin/search.pl