

Open concepts: museum digital documentation for education through the AMICO Library™

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Abstract

As education and research institutions struggle to come to terms with networked resources, new kinds of organizations and partnerships are emerging to support the distribution of networked cultural heritage information. The Art Museum Image Consortium (AMICO) (<http://www.amico.org>) provides an example of how museums have collaborated, in a manner that respects the requirements of education and research, to enhance access to the digital multimedia documenting their collections. AMICO has responded to librarians' concerns about administration, economics, access and use in this new information environment, leveraging resources and – we hope – providing cost-effective, unprecedented access to cultural multimedia.

Introduction

The means by which students, scholars, teachers and researchers gain access to information has changed significantly as digital information resources, particularly those delivered via the World Wide Web, have permeated academic culture. In this radically changed information landscape, libraries and librarians have been called upon to embrace new streams of reference materials. The new diversity of electronic sources offers many advantages, as it is often regularly updated, can support multiple users, may provide access without regard to "opening hours," and provide greatly improved access to information for researchers. In the traditional library, a repository of books, periodicals, and other printed matter, the librarian acted as both conduit and filter identifying and providing appropriate sources for their patrons. Libraries have been challenged to find a comfortable position in evolving digital environment, as the focus of their activities has shifted from developing collections to managing access to information. (see the research agendas of organizations such as the Council on Library and Information Resources, CLIR and the Digital Library Federation, DLF).

It is clear to all involved that electronic resources, especially those publicly available on the World Wide Web, are not without problems. They may raise questions of authenticity, legitimacy, information discovery, interoperability and documentation (all issues addressed by initiatives such as the JISC DNER and the DLF). Art libraries provide a case in point for the exploration of issues related to the delivery of a new kind of online content – digital museum documentation.

Museums and galleries too have been working to find their position in this new online landscape (MW97 – MW2001, ArtsConnectEd 2000, IMLS200). This article will explore the administrative, economic, accessibility and content development challenges posed in the online information environment, and illustrate how the Art Museum Image Consortium was influenced by the requirements of scholars and collecting institutions when it planned to make The AMICO Library™ available. Organizations such as the National Humanities Alliance (NHA Principles 1997), the International Consortium of Library Consortia

(ICOLC Principles 1998) and the Association for Research Libraries (ARL Principles 1997), have highlighted issues of particular relevance to research organizations, art librarians, and the faculty, students and researchers they assist, in seeking ongoing access to high quality digital documentation of works of art.

Administration

The administration of a visual resource collection is a challenge. Managing a range of reproduction formats within a demanding environment is a challenge (regularly discussed by the Visual Resource Association, VRA). Introducing the complexities of rights and reproductions administration for digital and networked uses on top of the requirements of more traditional formats has added an increasingly complex layer that revealed a community-wide need for information and guidance (NINCH Town Meetings 2000, VRA Guide, 2000).

Discussion in the community has reached the consensus that for visual resources to be useful in education, the rights to use images in a wide range of normal ways, including classroom projection, online reserve and student paper use, must be readily available. Academics cannot afford the time to clear each specific use, and faculty and students (and their institutions) cannot afford to risk copyright violations in institutional activity, even when some individual uses may be protected by fair use. To make administration as manageable as possible, it is hoped that standard terms and conditions for image use can remain consistent across collections, and thus eliminate confusion and the need to manage "special cases". (See particularly the statement of licensing requirements developed in the Museum Educational Site Licensing Project – MESL 1998a).

When image resources are acquired by an institution, art librarians will often want to administer particular online digital image collections at the institutional level, integrating them with resources available from other sources, or bringing portions of a resource onto university computers to be used locally (Pisciotta 2000). This further challenges the licensing frameworks offered by many electronic journals and databases (LIBLICENSE). Distance education also poses a challenge to the concept of a physical 'site' as does the desire not to restrict access for members of the community working from home, their dorms or traveling to conferences or on sabbatical (see the Distance Education sections of the NINCH Town Meetings 2000 report).

Economics

As the debate over journal subscription pricing has shown, the economics of scholarly communication are changing dramatically in the online environment (LIBLICENSE, Lynch 1999, Mellon 1992). Art libraries seek to acquire digital image collections that are priced in a predictable manner. They want to be assured that their costs will not increase out of proportion to the growth of the collection (or their budget!) and want to limit unpredictable costs such as per-user, or per-use fees. Librarians generally wish that the cost-savings (if any) of electronic publishing, and the benefits the new formats provide, be passed through. However, making electronic image databases may prove to be more expensive than converting print journals. We are creating a new product without a physical analog, for which user requirements and expectations are quite high.

The cost and administrative burden of rights clearance for networked use of visual images is very high; one of the attractions of pre-formed collections is that they come with a bundle of educational rights. But it is essential that external resources be leveraged. Academic

institutions want to be able to easily link locally digitized resources to those acquired from outside sources. Ideally, outside resources would use the same standards that are employed locally, and might even bring toolsets that could be used locally with a combined resource, making it a more attractive proposition.

The outside resource should be economically attractive when examined in light of the cost of local digitization and management of comparable resources. (See Besser/Yamashita 1998 for a full enumeration of the costs associated with digital image resources in universities).

Access

Librarians, probably more so than their clients, are sensitive to the transience of resources that are posted on public web sites. The friable nature of the public web has led to many calls for persistent identifiers and consistent access to online digital resources. The effort required to maintain lists of links to web resources is staggering. As more and more museums move to conceptualizing their public web sites as active programmatic spaces this problem will only be exacerbated. New mechanisms are needed to ensure that there are persistent online digital collections (AIC, AMICO, ARTSTOR). Art librarians would likely enjoy long-term collaborations with these new organizations around the creation of digital art documentation and have a significant role to play in ensuring that these new resources mesh with broad institutional needs.

Librarians want to ensure both access at all times and that provisions for multiple simultaneous users, both of which are potential strengths of online delivery over traditional library materials. The ability to search across a range of types of materials obtained from different sources should also be a strength of electronic resources. But without attention from resource providers, cross-collection searching remains a dream, and materials once they are discovered can often not be easily incorporated into a scholar's ongoing work. (These issues are the focus of the Dublin Core Metadata Initiative, and have informed the work of the VRA Core and CIMI. They are also at the core of the activities of the JISC DNER and the Interoperability Focus.)

Content and Users

Art librarians know that the faculty they serve often require images that are of a high resolution and quality. Online image resources need to be structured to provide images at a number of resolutions that will suit the various purposes and practices of academic work. (Greenhalgh 2000, Object, Image, Inquiry 1998.) Resource providers need to remember that it is the content which is of primary concern to the researchers, rather than its format (Bailey/Graham 2000). There need to be tangible benefits to converting to digital formats for this to be worth the investment in time and energy. Scholars have identified many ways that digital tools and techniques could support the work of art historians (Rhyne 1998, Lavin 1997).

Access to good documentation that meets scholarly requirements (such as the Categories for the Description of Works of Art) is one such ancillary benefit. But documentation associated with the works needs to be consistently formatted. Local practice still abounds in visual collections (Graham 1999). Convenient tools or methods of citing works of art, which are not specific to the publication and point back to the original work of art, are essential to ensure that discourse can take place within and outside the community of those with access to an art image resource (Sandore/Shaik 1998).

Many initiatives have explored these issues over the past decade; a study that has been made all the more challenging by changing nature of Art History and the eager embrace of visual evidence by more Humanities disciplines (as is shown by the work of centers like IATH and projects like Perseus). The Art Museum Image Consortium (AMICO) is one such effort, founded by museums to enable educational use of the digital documentation of their collections. (Bearman/Trant 1998c and 1997d).

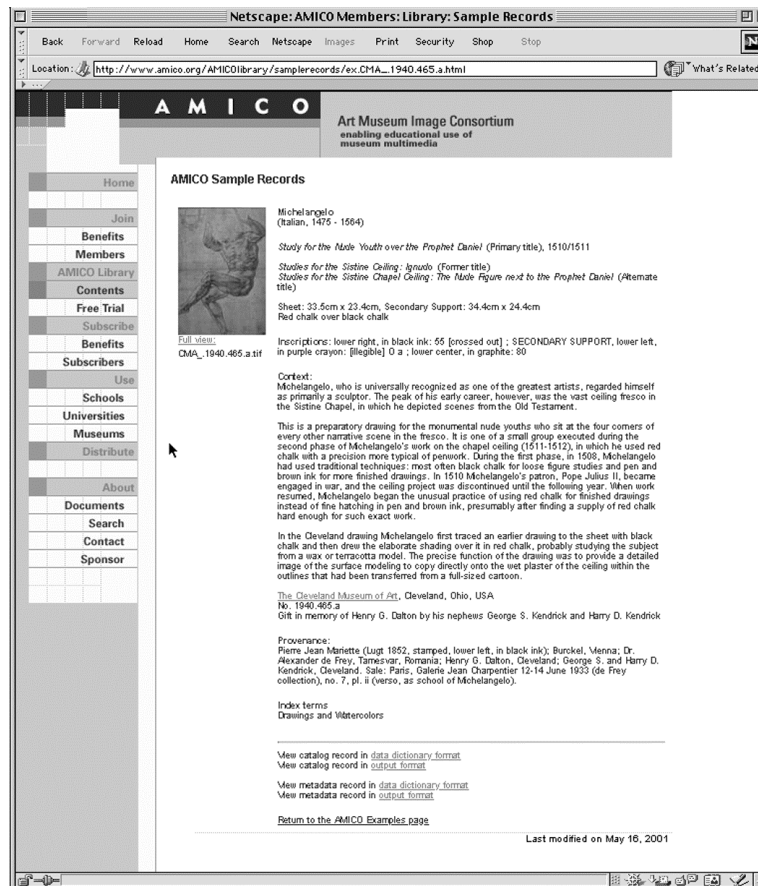
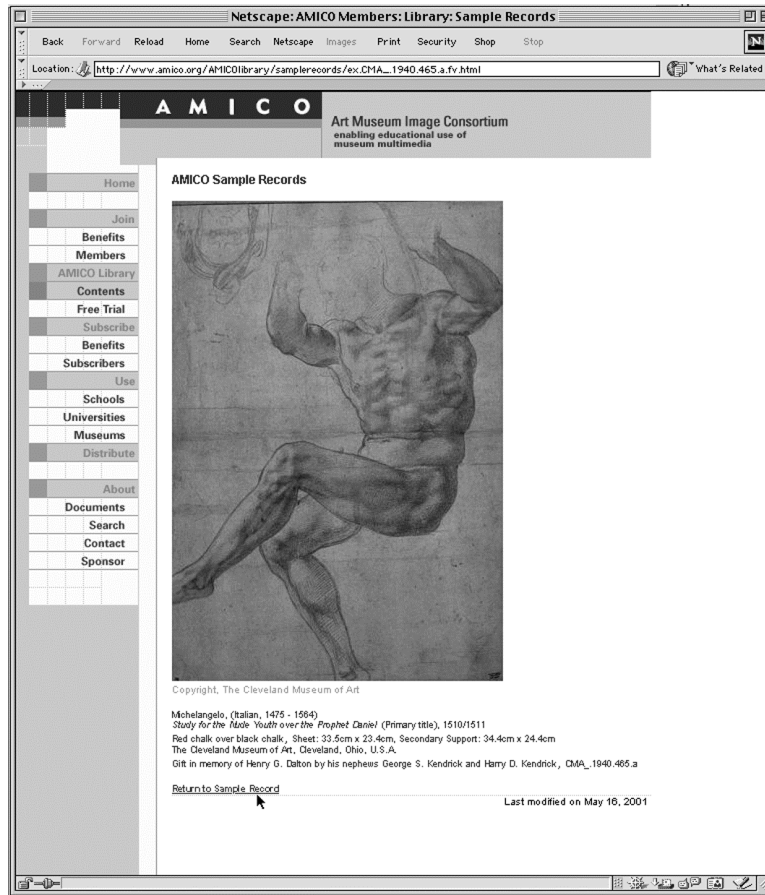


FIGURE 1: Michelangelo, (Italian, 1475 - 1564), Study for the Nude Youth over the Prophet Daniel (Primary title), 1510/1511, Red chalk over black chalk, Sheet: 33.5cm x 23.4cm, Secondary Support: 34.4cm x 24.4cm, The Cleveland Museum of Art, Cleveland, Ohio, U.S.A., Gift in memory of Henry G. Dalton by his nephews George S. Kendrick and Harry D. Kendrick, The AMICO Library: CMA_1940.465.a. Photo: © The Cleveland Museum of Art.



A sample work from The AMICO Library, as shown on AMICO's public web site (http://www.amico.org/AMICOLibrary/samplerecords/CMA_.1940.465.a.html)

Art Museum Image Consortium (AMICO)

The Art Museum Image Consortium (AMICO) is an independent not-for-profit membership organization of institutions with collections of art. AMICO was formed in September 1997 – after an open, intensive, self-funded and collaborative planning process – to encourage expanded educational use of museum collections in digital form. AMICO's members have pooled their collective resources to create a digital library known as The AMICO Library™, which is being offered as a collaborative response to the issues facing museums and educators in the digital environment. (Full background about AMICO's founding, including many planning documents, can be found on its web site <http://www.amico.org>.)

As a museum-governed, non-commercial enterprise AMICO's digital library publication policy has been designed to recover the costs of compilation and distribution of The AMICO Library. Our subscription fees are based on cost-recovery, and AMICO does not return any income to its members. Nor does AMICO subsidize the digitization of works of art in member collections. Our role is to provide a cost-effective and efficient distribution system that enables members to provide additional services to their educational publics without incurring significantly increased costs.

Museums participating in AMICO are motivated by their educational mission. They wish to facilitate the provision of digital documentation of their collections for educational purposes, speed rights clearance for the educational community, and create a forum for the exchange of information and sharing of experience with the technologies and techniques for digitizing of collections documentation

Our hope is that we can find economies of scale that make the process affordable for all involved. The more educational institutions subscribe, lower the cost-per-user of The AMICO Library; it is hoped this will allow AMICO to offer annual subscription charges that remain stable despite the growth of the AMICO Library and the number of users. (A full discussion of the economic rationale for collaboration can be found in Bearman/Trant 1998c.)

AMICO was formed by 22 museums from the United States and Canada as charter members. Today AMICO membership stands at 32 institutions and continues to grow. New members are welcome, and European institutions are actively encouraged to join us. (Full details about membership can be found at <http://www.amico.org/join.html>). Institutions subscribing to The AMICO Library will benefit from the expanding membership of the consortium as new collections are included in the combined resource. All members have seen benefits in collaborating beyond those of acting alone in the digital environment.

We've also found other unforeseen benefits to cooperation: AMICO has been able to facilitate the incorporation of additional Library content through links with other organizations such as Antenna Audio. The Consortium has also facilitated the clearance of rights requests through agreements with the Artists Rights Society (ARS) that cover all AMICO Members uses of works from ARS-represented artists or estates.

Delivering The AMICO Library

There are many players and processes involved in creating The AMICO Library (See Fig. 2). Members create digital content. AMICO compiles and edits it. Distributors deliver it to Institutions, who subscribe on behalf of end users. AMICO's distribution model – while complex – recognizes the expertise required in each of these areas, and leverages collaboration with existing organizations to deliver services in a cost-effective manner. A modular approach to task analysis has enabled us to break down the required skills and expertise at each phase, and develop an appropriate strategy.

The AMICO Process

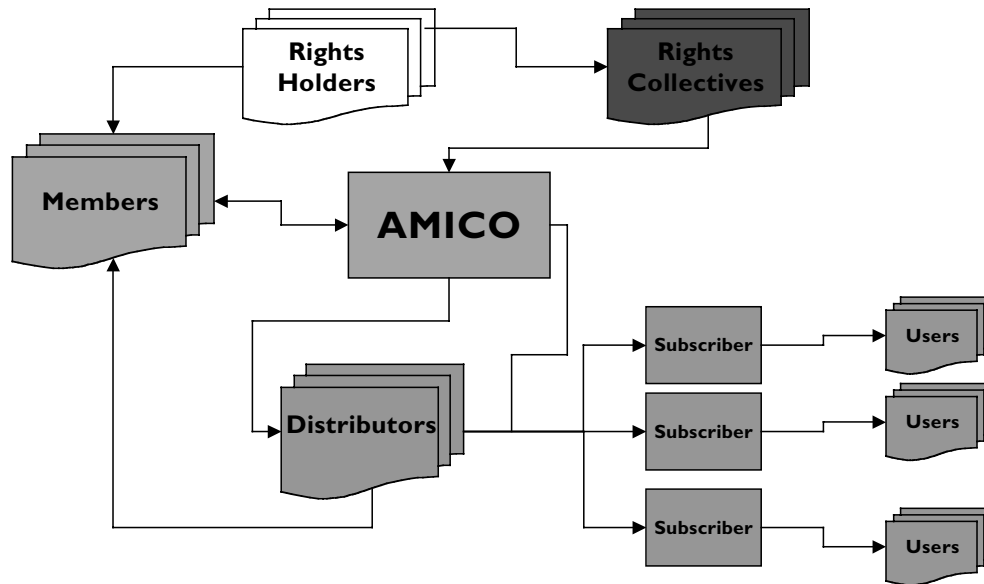


FIGURE 2: The AMICO process displays how AMICO bridges the distance between museum digital collections and educational end users.

AMICO and its members determined that several fundamentally different audiences might want to access the networked cultural heritage that is provided in The AMICO Library: universities, schools, museums and cultural research organizations, and the general public. Each of these groups has particular needs. For example, while a researcher or scholar would like access to a large number of examples of a particular kind of work – for example early photographs – a high-school teacher may only want to use exemplary images representative of early photographic techniques. By collaborating with different information-providing organizations it would be possible for AMICO Library delivery services to be developed that met the particular requirements of each of these communities.

Working with other organization as distributors has also enabled museums to meet the digital library service provision challenge. Museums are not equipped to support world-wide community of users, on a 24-hour-a-day, seven-day-a-week basis. Collaboration with distributors leverages their investment in infrastructure and user support services.

AMICO Distributors integrate The AMICO Library into their information delivery systems and provide access through an interface and with associated tools that meet their clients' needs. It is, therefore, possible to subscribe to The AMICO Library through a number of distinct service providers: The Research Libraries Group (RLG) has offered an academic and research oriented application since 1999. A state-wide consortium in Ohio (OhioLINK) has developed a service for higher education (and is experimenting with delivery to primary and

secondary schools). Several additional distributors will serve primary and secondary school users, public library users, and users in other countries beginning in the fall of 2001.

A multiplicity of distributors enables users in distinct communities to encounter The AMICO Library in environments they already know, integrated with other data. This context adds value, facilitates cross-linking with other resources, and puts AMICO Library content in conjunction with tools that provide for their needs. Our key goal is to have users encounter The AMICO Library when and where they are searching for information.

Addressing Digital Librarians' Needs

The model of a member-led consortium, offering an increasingly rich resource through varied distributors each serving different user communities was developed with an awareness of the requirements of digital librarians and the users of digital resources. We've tried to address expressed concerns regarding administration, economics, access, content and end use.

The AMICO Library is acquired as a library resource, and it is available to all departments and all library branches on campus. Compared to other methods of building a digital resource, such as the digitization of in-house slide collections, and their documentation and rights acquisition, or the licensing of individual digital files, the AMICO Library is a cost-effective means of building a broad digital database of visual resources. Annual growth of the Library and updates to associated documentation assure its continued value.

Campus-wide subscription facilitates administration (all eligible users have access regardless of their department). A single annual subscription fee for unlimited use makes budgeting for resource acquisition predictable. AMICO Library subscriptions are scaled, based on numbers of users, to permit small institutions to obtain affordable access. Consortial subscriptions at a discount offer another mechanism for passing on our cost-savings.

Since librarians act as resource guides to both students and faculty, they need to have stable, known environments so that they can train others. AMICO enters into multi-year agreements with its distributors, so The AMICO Library will be available in a predictable manner. Since AMICO works with established digital resource providers, who offer the AMICO Library within a suite of other resources that libraries already subscribe to, the learning curve to adjust to a new interface or delivery environment is reduced for new users of The AMICO Library.

The AMICO Library License Agreements (available from <http://www.amico.org/subscribe.html>) reflect a delicate balance between the needs of users and the requirements of copyright holders – particularly those who hold copyright in contemporary works of art. They incorporate the experience of collaborative projects such as the Museum Educational Site Licensing Project, and as much as possible meet the principles of organizations such as the ICOLC and the NHA. As an example, AMICO members recognized that many educational and research uses cannot be fully supported solely through a network accessible resource. To allow for more flexibility, including the ability to incorporate AMICO works in online course reserves, The AMICO Library University Agreement allows for adaptations of the content to different formats and deliveries. Authorized users may print images, integrate images from the Library into password-protected course web sites, place images into other software programs for papers and presentations, create slides or download images and place them on a CD, or even incorporate

The AMICO Library with a university-created image database of locally digitized slide collections.

AMICO Library Content

The works of art represented in The AMICO Library reflect the breadth and diversity of the collections of member institutions. Works of art and artifacts available in digital form were created from prehistoric time to the present day and represent a broad range of cultures including African, Asian, Pacific Islands, Meso-American and Pre-Columbian, and Native American, European and American Western art. The AMICO Library contains large numbers of many object types, such as paintings, sculptures, photographs, decorative arts, prints, textiles, books and manuscripts, arms and armor, costumes and jewelry.

The first subscriber edition of The AMICO Library contained images and documentation of over 50,000 works of art from member collections. Since AMICO members contribute additional works from their collections and because AMICO membership is growing, the number of works in The AMICO Library increases every year. The annual update of the Library is issued to subscribers on the first of July each year. The 2001-2002 edition will have over 75,000 works.

The digital documentation included in the AMICO Library is governed by the AMICO Data Specification. Each work of art in the AMICO Library is represented by a textual catalog record with at least one image, recognizing a user requirement for a visual representation of each work of art. Additional images, multimedia and related documents can also be included (Figure 3.) The descriptive standards adopted are based on the *Categories for the Description of Works of Art (CDWA)*, of which the VRA Core is a subset. Each AMICO member maps the fields in their local system to the AMICO Data Dictionary. AMICO compiles contributed documentation, and ensures that the data specification is followed, and indexes the works to enhance retrievability.

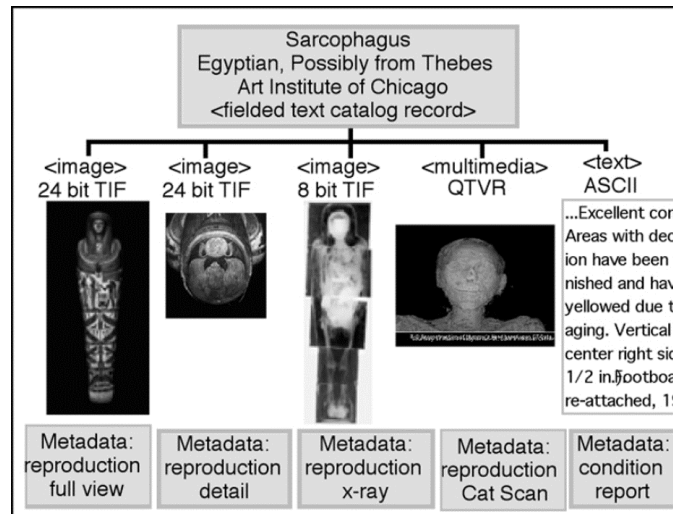


FIGURE 3: *Types of Documentation in The AMICO Library. Each work in the AMICO Library is documented by a catalog record, an image file, and an image record. Additional media files may also be present, each of which also has a metadata record.. © Art Museum Image Consortium and The Art Institute of Chicago, 1998.*

The documentation of works of art provided in The AMICO Library moves beyond that of a standard picture library. As well as basic identification, the AMICO Library offers interpretive content. Peppered throughout the Library are multiple views and details of works, curator commentaries, sound, video, and other multimedia, provenance and exhibition histories, and publication references. Recently AMICO has reached agreements with Antenna Audio™ to add sound files originally created as part of audio tours of museums and with Roland Video™ to incorporate documentary art video.

The AMICO Library also moves beyond the content available on the Web. As a consequence of an agreement between AMICO and the Artists Rights Society (ARS), the AMICO Library includes many works in copyright where rights are held by ARS-represented artists estates. This agreement recognizes the economies of an institutional agreement and the efficiencies a broad contract offers over work-by-work negotiations. It is now much easier for AMICO members to include modern and contemporary works, and consequently The AMICO Library has a wealth of works from the 20th century – over 10,000 works in copyright appear in The AMICO Library 2001 edition. How this associated content enhances learning and understanding is something that museums and educators need to explore systematically and in tandem.

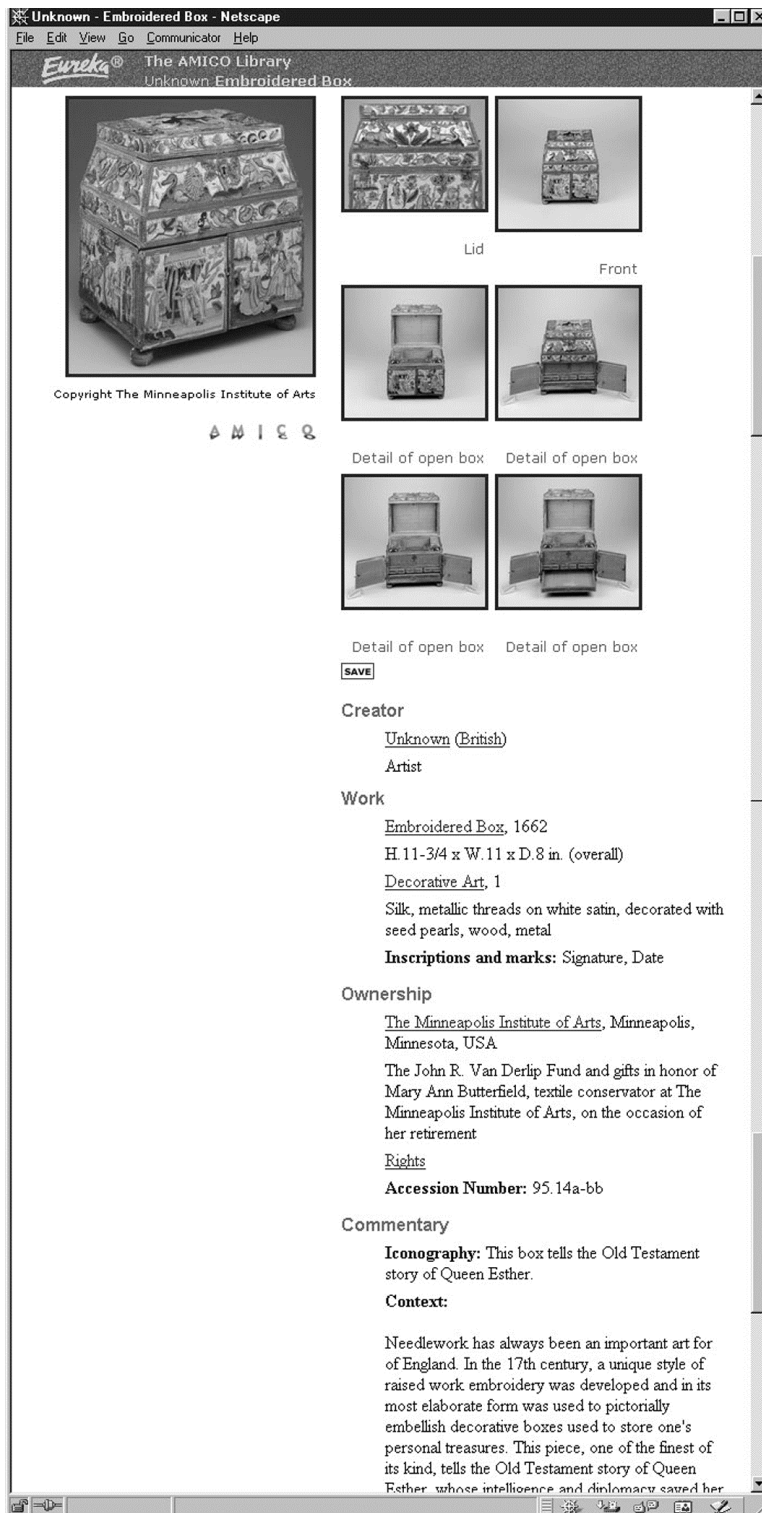


FIGURE 4: An example of a work from the AMICO Library, including extended commentary and multiple views, as seen through the Research Libraries Group (RLG) Eureka Interface: Unknown, (English), Embroidered Box, 1662, silk, metallic threads on white satin, decorated with seed pearls, wood, metal, H.11-3/4 x W.11 x D.8 in. (overall), The Minneapolis Institute of Arts, Minneapolis, Minnesota, U.S.A., The John R. Van Derlip Fund and gifts in honor of Mary

Ann Butterfield, textile conservator at The Minneapolis Institute of Arts, on the occasion of her retirement, The AMICO Library: MIA_95.14a-bb. Photo: © The Minneapolis Institute of Arts.

The selection of works to include in the AMICO Library has been a challenge. Members have had to balance requirements within institutions for limited digitization resources and often have leveraged investment by contributing works to AMICO that have been digitized for publications or Web-based projects. AMICO itself has tried not to be prescriptive; we have encouraged members to contribute those works that are well-known from their collections (including those reproduced in standard art history textbooks) but have also recognized that the desire to introduce users to a broader range of works in their collections is one of the benefits of participation for AMICO members.

AMICO Members are committed to adding digital documentation of works from their collections to The AMICO Library as this documentation becomes available. As a consequence, works included in recent publications, displayed in current exhibitions, or recently acquired are all likely to be seen in The AMICO Library. AMICO conducted a review of major art history texts to encourage its members to contribute other works from their collections that are widely known. But it is not the canon of art history that is the strength of The AMICO Library – it is the wealth of access to unpublished or inaccessible works of art. For example, while a textbook may include one example of a Henry Moore sculpture, the AMICO Library contains hundreds of sculptures, maquettes, drawings and full-size plasters as well as the finished bronzes that are so well known. We hope to enable the new art history (Bailey/ Graham 2000) and facilitate the creation of alternate histories (Walsh 2000) with a breadth of material that moves beyond the ‘canon’.

The range of content in the AMICO Library is beginning to facilitate work in other Humanities disciplines, including history, philosophy, religious studies and cultural studies, as well as art history. Users can compare techniques across cultures and museum collections. They can explore time periods across continents in ways not facilitated by the classic textbook structure of cultural segmentation. And they can find depth in collections that traditional publishing could never afford to illustrate due to economic realities color print reproduction. The AMICO Library contains hundreds of comparative illustrations and accompanying depth of associated works that are not included in the textbooks and perhaps very infrequently on view in the museums themselves, allowing for a "back room" virtual visit to member institutions.

Collaborations with Users

AMICO members seek to build links to user communities to gain an understanding of their needs for digital art documentation, and to explore new ways to incorporate museum collections into learning. There is still much to be learned regarding the effective integration of new media into teaching and learning. It is widely recognized that cultural heritage institutions have a great deal to offer in terms of content. But how best to collate and deliver digital cultural heritage information over networks remains to be fully determined. With a better understanding of the ways in which digital documentation of works of art is used in education, members hope to encourage the design of user interfaces and delivery services both for the AMICO Library™ and for their own educational web services.

The University Testbed was one such project. Before the AMICO Library was made available for subscription, AMICO Launched the University Testbed Project; 12 universities had access to 20,000 works in a preliminary version of The AMICO Library for the 1998-1999 academic year. Participating institutions provided feedback and direction on structuring The AMICO Library prior to its public launch on July 1, 1999 (AMICO University Testbed 1998).

In the fall of 2000, AMICO launched a K-12 Schools Testbed involving a dozen teachers in all disciplines and with students of all ages, from schools across North America. This two-year collaboration has already begun to yield results in the form of new interfaces and tools for primary and secondary school teachers and students that will become part of the AMICO Library distribution environment in the fall of 2001.

AMICO is also beginning to bridge the gap between end users and museum members, using online and traditional communications methods. AMICO has an e-mail distribution list for users to provide feedback and share experiences with the AMICO Library. Library User Group meetings are being held at conferences of associated professional organizations. Suggestions about what users would like to see represented in The AMICO Library are shared regularly with members. Users are also beginning to share their experiences in using The AMICO Library. To facilitate the adoption of digital series of model assignments is being developed to illustrate how such a rich educational resource can be integrated into a broad range of teaching subjects and styles. We'd like Michael Greenhalgh's prediction of an 'environment richer than a darkened room' (2000) come to pass.

Conclusions

Our experience has been a positive one; in the first two years that The AMICO Library has been available for subscription over 120 colleges and universities in the United States and Canada – approximately one million students – have gained access to The AMICO Library. A recent agreement with the Joint Information Systems Committee (JISC) in the United Kingdom makes the Library available to all Higher Education institutions throughout the United Kingdom, comprised of approximately 1.4 million additional students.

We realize, however, that the use of digital resources in art and cultural studies is still in its infancy. The AMICO Library was designed to satisfy several key concerns of the art library community; we remain open to the kinds of experiments that will surface new requirements and new methods. In particular, AMICO hopes that the availability of a persistent, high quality digital art resource will begin to encourage uses that will in turn suggest future tools and content interpretations. We're collaborating to develop teaching tool, that integrates directly into existing software, like Microsoft Word and PowerPoint, and are exploring how to bundle The AMICO Library with other electronic art reference materials and indexes. Through such continued experimentation AMICO Members will continue to enable educational use of the digital documentation of their collections.

Note: If you wish to review The AMICO Library free for 30 days, please visit <http://www.amico.org/trial.html> to make an online request.

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(Our thanks to Judy Silva for her assistance compiling this list of references.)

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